



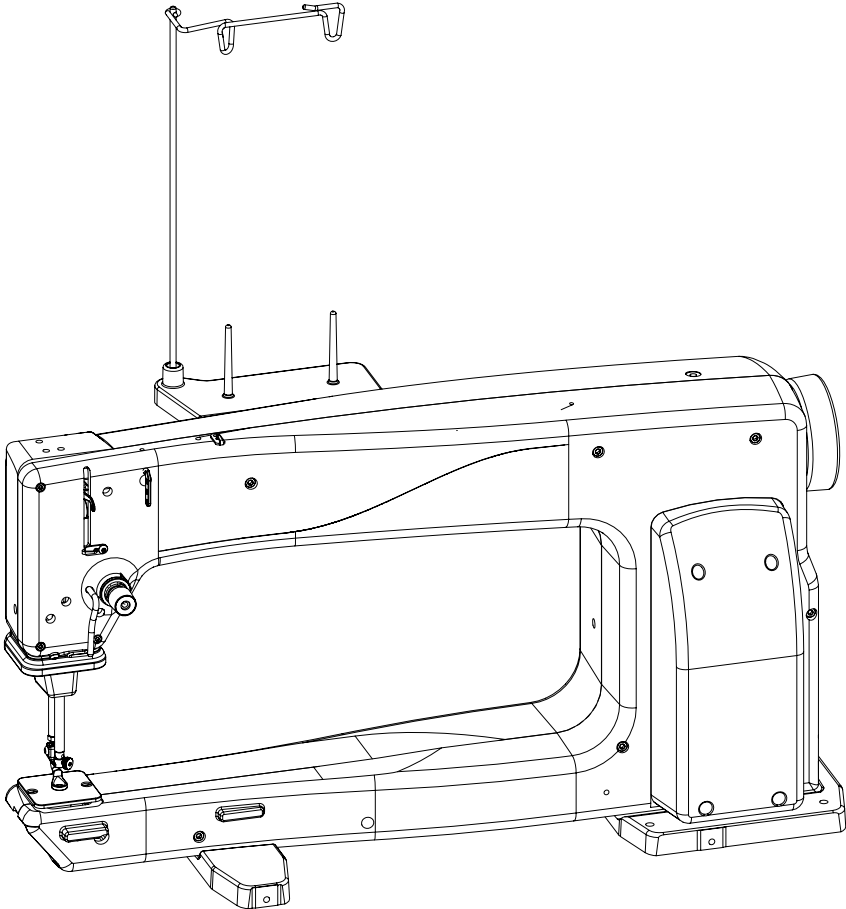
King Quilter II

MACHINE USER MANUAL



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(800) 401-8151





Congratulations on your purchase of the King Quilter from Sewing Machines Plus!

You haven't just purchased a quilting machine, you've joined the Sewing Machines Plus family and we welcome you.

Sewing Machines Plus is committed to innovation, reliability, customer service and education. We are committed to your quilting success.

With that in mind, we invite you to bookmark our website: www.sewingmachinesplus.com and invite you to visit to learn more about the art of quilting or to ask questions.

Printed in the United States of America.

Package Contents

Please keep your original box and packaging

Contents of Package

1. Bobbins (5 pieces, one in machine)
2. Needle (135x5) size 16 (pack of 10)
3. Needle (135 x5) size 18 (pack of 10)
4. Bobbin Case
5. Spool Stand
6. Thread Mast
7. Pin Oiler
8. Lint Brush
9. Screwdriver
10. Power Cord
11. 2.5 mm L Allen tool
12. 4 mm L Allen tool
13. 8mm combo wrench
14. User Manual
15. King Quilter Quilting Machine

Optional Accessories

1. Rear Handlebar with controls
2. Pantograph laser
3. Groovy board stylus adapter kit
4. Ruler base
5. Pro-Stitcher

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Safety Section

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Please note: Do not operate your King Quilter quilting machine until you have completely read the information contained in this manual. Please keep all packaging and order information for warranty purposes.

IMPORTANT SAFETY INSTRUCTIONS

Read all instructions before using this machine.

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

DANGER — To reduce the risk of electric shock:

- A quilting machine should never be left unattended when plugged in. Always unplug the machine from the electrical outlet immediately after use and before cleaning.

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

- The King Quilter is heavy. Never attempt to lift it alone. Always use two people when lifting. Always lift from the throat of the machine, not from the handlebars.
- Always unplug the King Quilter from the electrical outlet when performing any maintenance, changing the needle, removing thread locks, or when left unattended.
- Do not unplug by pulling on the cord. To unplug, grasp the plug, not the cord.
- Keep fingers away from all moving parts. Use caution around the needle or sharp external components.
- Change the needle often. Do not use bent or dull needles. "Every quilt deserves a new needle".

- Switch the machine to the symbol off, or 0 position, to turn it off when making any adjustments in the needle area, such as threading needle, changing needle, threading bobbin, changing hopping foot, and so forth.
- Never drop or insert foreign objects into any opening.
- The King Quilter should only be used indoors, away from moisture.
- The King Quilter should not be stored or used in extreme temperatures.
- Use the King Quilter only for its intended use as described in this manual.
- To disconnect from the wall outlet, push the switch to the off position, then remove the plug from outlet, pulling from the plug, not the cord. Never operate the King Quilter if the cord is damaged or not working correctly. If a mechanical or electrical problem is encountered, return the King Quilter to the nearest authorized service center or the manufacturer for examination, repair, electrical, or mechanical adjustment.
- It is not recommended that the King Quilter quilting machine be used with any machine quilting frame other than those recommended by Sewing Machines Plus.
- Use this quilting machine only for its intended use as described in this manual. Use only attachments recommended by the manufacturer as contained in this manual.
- Never operate the machine with any air openings blocked. Keep ventilation openings of the machine free from the accumulation of lint, dust, and loose cloth.
- Do not operate where aerosol (spray) products are being used or where oxygen is being administered.
- Do not pull or push the machine across the fabric excessively while stitching. It may deflect the needle enough to cause it to break.
- Use only needles designed for free motion quilting and recommended by Sewing Machines Plus for this machine. Other types of needles may break during normal quilting.
- Children shall not play with the machine. Close attention is necessary when this machine is used by or near children.
- This sewing machine may be used by children age 8 years and above and persons with reduced physical, sensory, or mental capabilities or lack

of experience and knowledge if they have been given supervision or instruction concerning use of the machine in a safe way and understand the hazards involved.

- Cleaning and user maintenance shall not be done by children without supervision.

Save these instructions.

This machine is intended for household or commercial use.

Disclaimer

Sewing Machines Plus and its Representatives are in no way legally responsible or liable for damage to the King Quilter when used improperly or not in accordance with the guidelines stated in this manual or when used on machine quilting frames not recommended by Sewing Machines Plus.

To use the machine safely

1. Carefully watch the needle when sewing. Do not touch the hand wheel, take up lever, needle, or other moving parts.
2. Turn the machine off and unplug the cord in the following cases:
 - when you have stopped using the machine
 - when you replace or remove the needle or any other part
 - when you check or clean the machine
 - when you leave the machine unattended
3. Connect the machine directly to the wall outlet or to a surge protector that connects directly to the wall outlet. Do not use extension cords.

To increase the life of your machine

1. Do not store this machine in areas exposed to direct sunlight or high humidity. Never use or store the machine near a heater, an iron, a halogen lamp or other hot things.
2. Use only neutral soaps or detergents to clean the machine. Benzene, solvents and scouring powders can damage the case and the machine and therefore should never be used.

3. Do not drop or bump the machine.
4. Always consult the manual to replace or fix the hopping foot, needle or any other part of the machine. If necessary contact an authorized Sewing Machines Plus representative.

General Specifications

The King Quilter utilizes high-tech electronics and an innovative touch-pad user interface to offer greater functionality and ease of operation to home quilters than ever before conceived in the quilting industry. The King Quilter quilting machine is a high quality machine that incorporates very robust design features and is very easy to service.

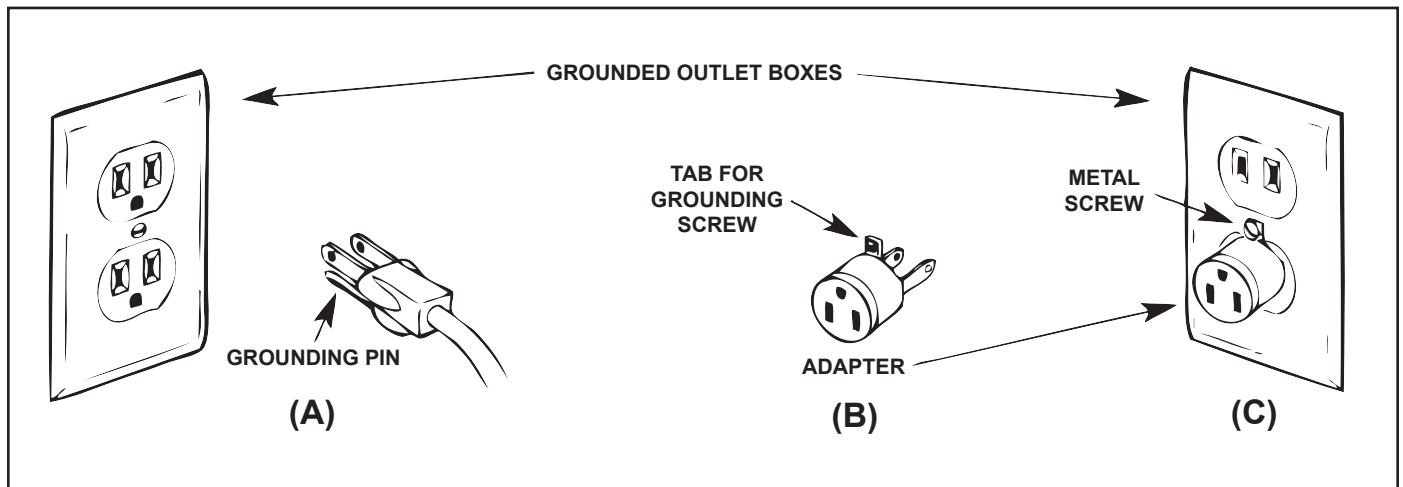
Sewing Opening Dimensions:	(245 mm X 610 mm) 8.25" X 18"
Sewing Speed:	Manual Mode: Min 90spm, Max 2,200spm Regulated Mode: Min 0spm, Max full speed
Stitches-Per-Inch:	4spi – 22spi
Needle System:	134 (135 X 7)
Needle Sizes, (recommended):	12/80 - 20/125
Hook System:	Rotary, Horizontal axis, M-class bobbin
Bobbin Type:	Aluminum, Class M
Bobbin Case:	Type MF
Motor Type:	Brushless DC
Needle Positioning:	Up and down, walking stitch
Electrical Power:	
US and Canada*:	105 – 120 VAC, 47 - 63Hz, 300W peak
Rest of world:	100 – 250 VAC, 47 - 63Hz, 300W peak
*Complies with international certifications	
LED Power Consumption:	8 W
Sew Foot Stroke/Lift:	5 mm
Needle Bar Stroke:	35.3 mm
Take-Up Stroke:	73 mm
Lubrication, main components:	Kluber Lube, permanent
Lubrication of hook:	Velocite 10, Texaco 22

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technical support.

Optional U.S. Grounding for Customers with 120 VAC Connections



This product is for use on a nominal 120 V or nominal 220 V circuit, and has a grounding plug that looks like the plug illustrated in sketch A above. A temporary adapter, which looks like the adapter illustrated in sketches B and C, may be used to connect this plug to a 2-pole receptacle as shown in sketch B if a properly grounded outlet is not available. The temporary 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.

➡ **IMPORTANT:** In Canada, the use of a temporary adapter is not permitted by the Canadian Electric Code.

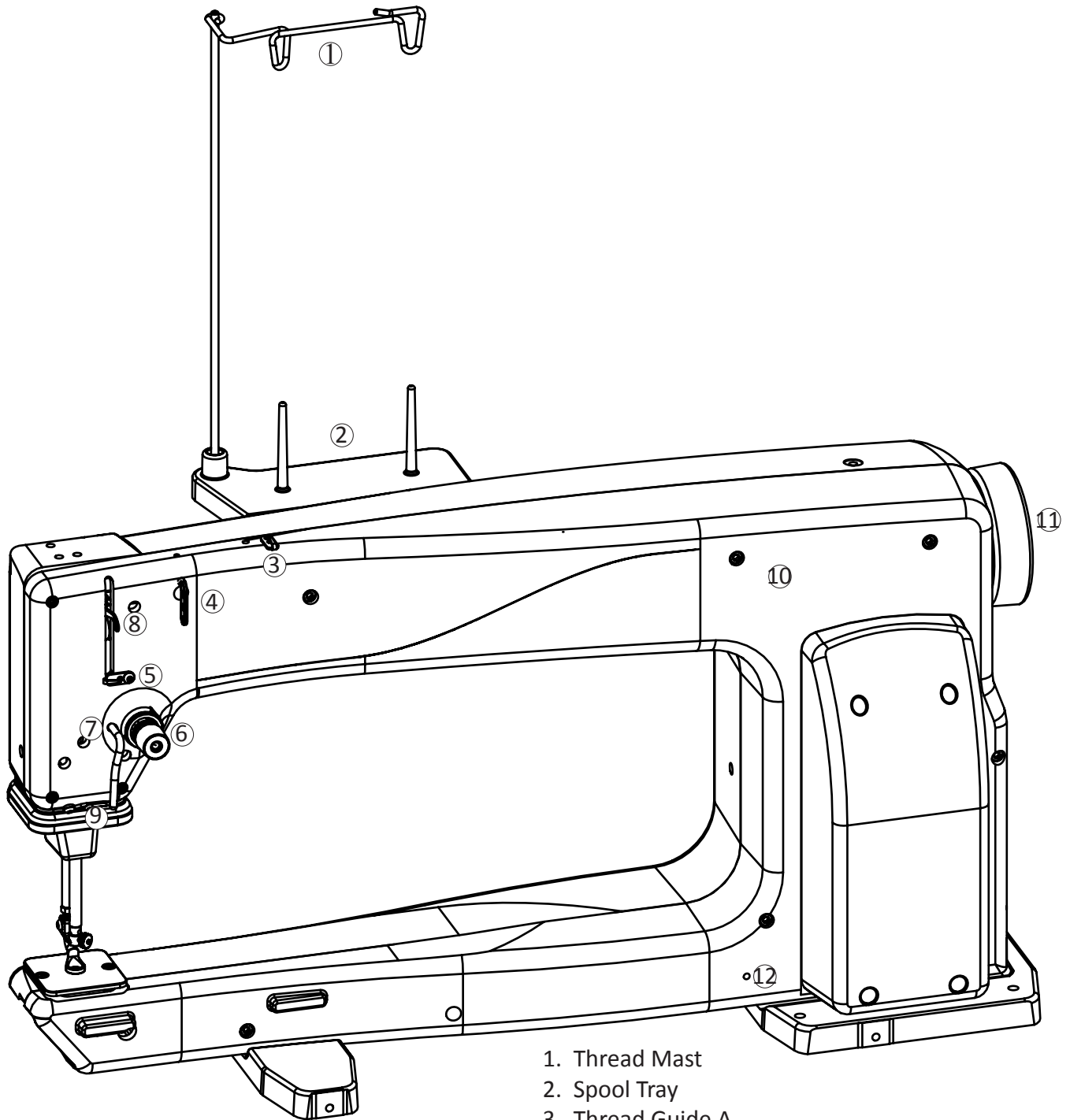
To repair or adjust the machine

If the machine breaks down or needs adjustment, first check the troubleshooting chart in the appendix to inspect and adjust the machine yourself.

For more product information and updates, visit our website at sewingmachinesplus.com.

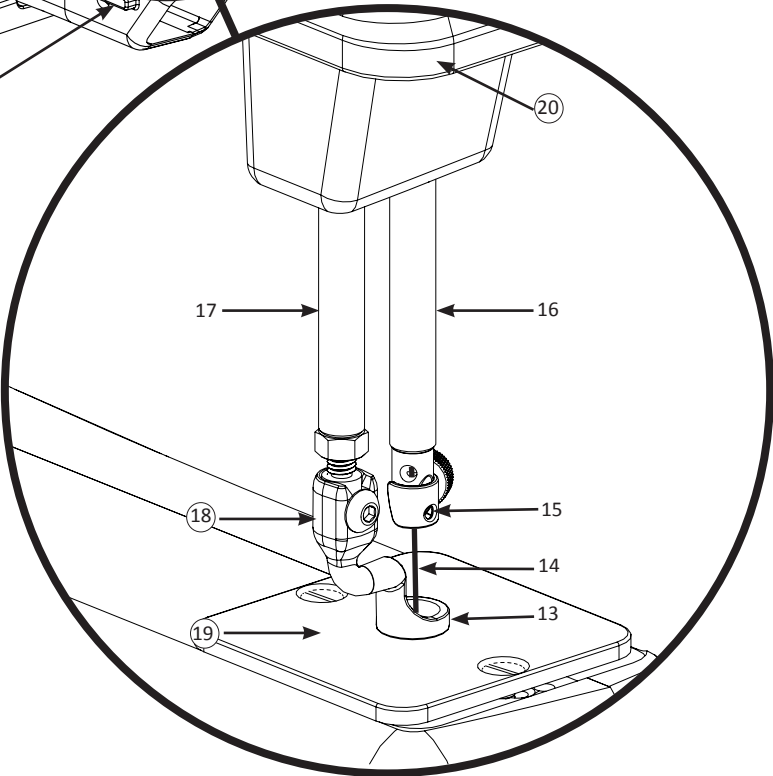
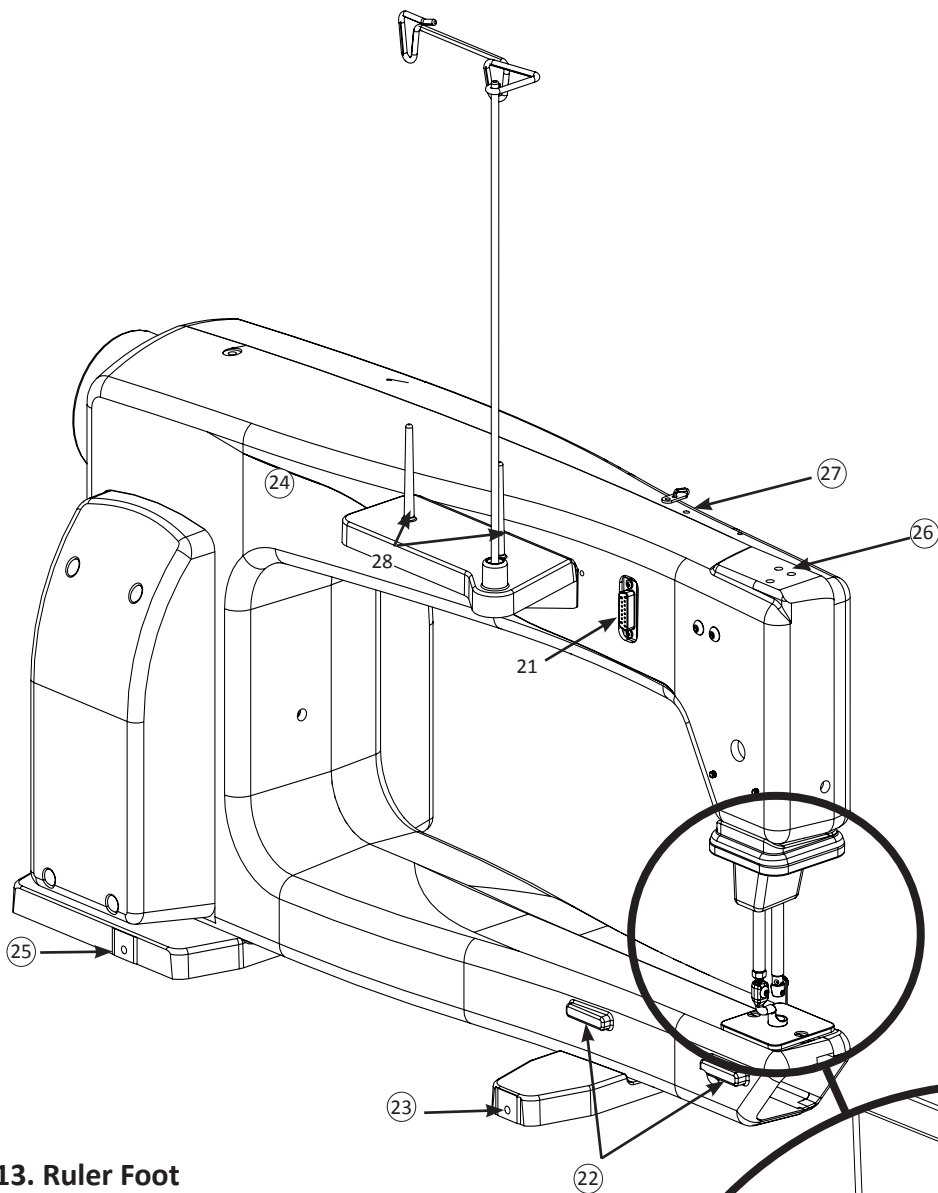
The contents of this manual and product specifications are subject to change without prior notice. Check for updated manuals at www.sewingmachinesplus.com

King Quilter Components - Front Side View



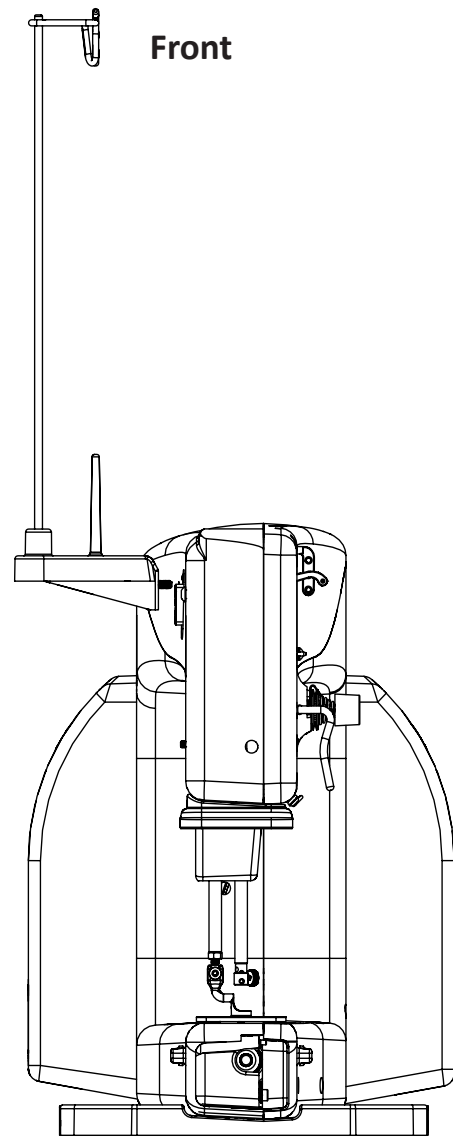
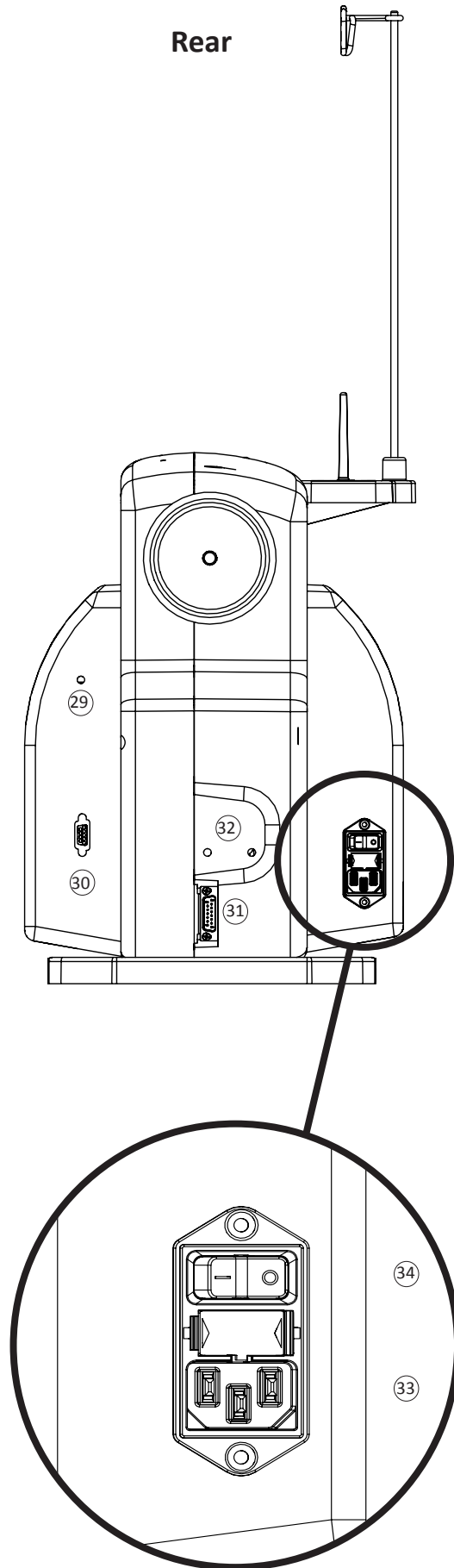
1. Thread Mast
2. Spool Tray
3. Thread Guide A
4. Three Hole Thread Guide B
5. Thread Guide C
6. Tension Assembly
7. Stirrup Thread Guide E
8. Take-Up Lever
9. Thread Guide F
10. Front Casing/Frame
11. Handwheel
12. Side Laser Stylus Post Hole

Back Side View



- 13. Ruler Foot
- 14. Needle
- 15. Needle Bar Thread Guide
- 16. Needle Bar
- 17. Presser Bar
- 18. Feet Mount
- 19. Needle Plate
- 20. LED Light Ring
- 21. Front Handlebar Connector
- 22. Ruler Base Position Guides
- 23. Front Wheel Base
- 24. Back Casing/Frame
- 25. Rear Wheel Base
- 26. Front Threaded Handle Holes
- 27. Top Laser Stylus Post Hole
- 28. Spool pins

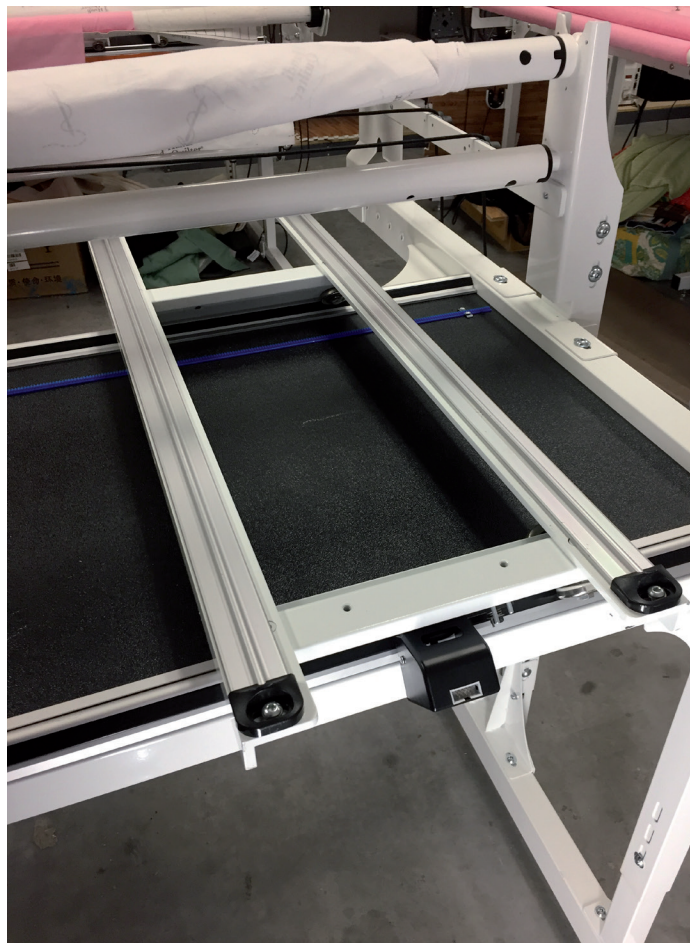
Rear and Front Views



- 29. Laser Stylus Power Connector
- 30. Serial Port for Stitch Regulator
- 31. Rear Handle Bar Serial Port
- 32. Rear Threaded Handle Holes
- 33. Power Cord Connector
- 34. On/Off Switch

Installation (King Quilter Frame)

1. Place the carriage on the table rails, ensuring that the Carriage Encoder Assembly will be toward the back of the machine (the power cord side of the machine). The back side of the carriage has an encoder assembly attached to the rear cross-piece. Be sure to place the carriage on the frame correctly.
2. Place the machine on the carriage.
3. Plug the ribbon cable end into the Carriage Encoder Assembly. The connector is keyed to assure correct alignment. Make sure the keyed portion of the cable connector aligns with the keyed portion of the encoder connector; do not force it.
4. The Y connection (cable going in and out) connects to the machine encoder assembly. The “D” connection and remaining length of cable comes back under the Power Pod from the machine rear encoder assembly, behind the machine, and into the 9 pin serial port of the machine on the control pod.
5. REMEMBER that if the machine is to be removed from the carriage, the cable must be disconnected from the Carriage Encoder Assembly. The other two connectors on the cable should remain in place. Failure to unplug the cable when removing the machine from the carriage could result in damage to the cable, encoders, and carriage.



Handlebar Information

The King Quilter offers a choice between two different front handlebars and an optional rear handle bar:

- Special Edition Hi-end front handlebar
- Basic Lo-end front handle bar
- Optional rear handle bar

Handlebars come boxed separately from the machine and include the handlebar installation and connection for the appropriate handlebar in the handlebar box.

Information on how the handlebars function can be found in this manual, in the basic handlebar and the special edition handlebar sections.

Installing the Power Cord

Insert the cord into the power connector on the rear of the machine. Plug the three-prong end into a power source.

Turning on the King Quilter

The power switch is at the rear of the machine.

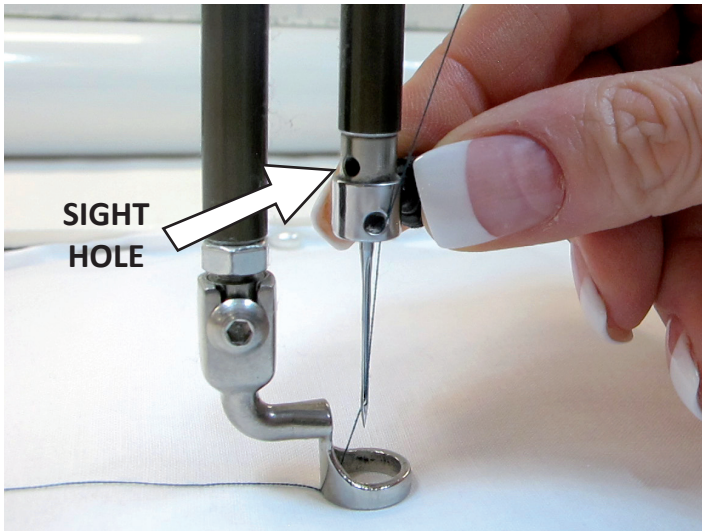
The machine is turned on when the main power switch at the rear of the machine is turned on.

Turn on the back switch by toggling the switch from the 0 position to the 1 position.


- **IMPORTANT:** If you will not be using the machine for more than a day, we recommend you turn the power switch off and unplug the power cord from the power source.
- **IMPORTANT:** Refer to the safety instructions.





Inserting (or changing) the Needle



1. Move the needle bar to the highest position by turning the hand wheel or pressing the needle up/down control on the handles. Then turn off the power.
2. Loosen the needle-bar clamp thumb screw
3. Remove the old needle by pulling it down. Discard the old needle in a safe manner.
4. With the scarf (small ground out dip on the back side of the needle, just above the needle eye) facing toward the back, hand-wheel side, of the machine, and the long groove down the front of the needle facing the bobbin case side, push the needle all the way up into the needle bar until it can go no farther.
5. Carefully tighten the needle bar clamp screw until the needle is securely fastened into the machine. If necessary use the 2.5mm hex tool to secure the needle, however, take care not to over tighten the screw. This may result in damaged or stripped threads in the needle clamp. Damage to the needle clamp may also make it difficult to fully insert the needle, which will change the machine timing, causing more issues. Stripped threads and damage caused by improper needle installation or tightening are not covered under warranty.

 **NOTE:** It is recommended to use a new needle for each new quilt. Also, replace the needle any time it becomes bent, dull or burred.

 **IMPORTANT:** Check the needle to confirm that it is fully inserted. The needle bar has a sight hole above the needle bar clamp screw. Make sure the needle is touching the top of the sight hole (Figure 6). If it is not, the machine timing will be off and it may be possible for the needle to collide with internal parts causing damage not covered by warranty.

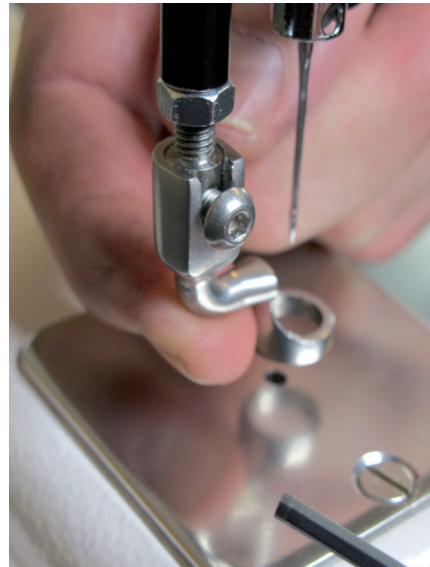
 **CAUTION:** Your King Quilter machine stitches at a much faster speed than your home sewing machine, therefore, it is essential that the needle is firmly seated in the needle bar and fully tightened (but not over tightened). Check often that the needle has not become loose. If the needle comes loose, it could break in the machine causing damage, throw off the machine's timing, or worse, cause bodily harm.

Changing the Feet

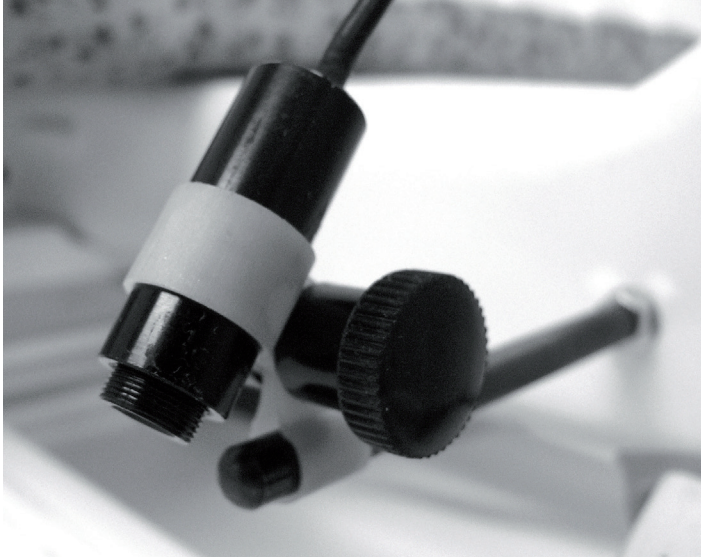
Your machine came with two feet: a ruler foot and an open-toe foot. Use the ruler foot for ruler work and everyday quilting, and the open-toe foot when you need greater stitch visibility (such as micro quilting or thread painting). Other feet are available, such as the Couching Kit.

1. Remove the foot that is on the mount by using the 2.5mm hex wrench to loosen the mounting screw far enough that you can slide the foot off of the mount.
2. Slide the desired foot onto the mount. Note that the opening on the side of the foot is lined up with the screw hole. Push the foot up as far as it will go.

Ensure the foot is centered with the needle when the foot is fully tightened with the 2.5mm hex wrench. If it isn't properly centered, loosen the lock nut; center the foot with the needle; hold the foot in position; and firmly tighten the lock nut.



Installing the Optional Laser Stylus



Begin by locating the laser stylus post, the laser holder and the laser stylus.

To attach the laser stylus to the top of the machine:

1. Locate the threaded hole on top of the machine near the front. The laser stylus guide post comes with the washer and nut on it. Remove the nut and washer, replace the nut onto the post and then place the washer under the nut and onto the machine painted surface. The washer protects the painted surface when the nut is tightened. Tighten the post clockwise until it is securely in place. Use the nut to secure the post to the machine.
2. Be sure the laser stylus is inserted into the laser clamp.
3. Slide the laser clamp over the post to the desired height.
4. Plug the laser into the top port on the side of the electronic control pod.



For use at rear of machine

To attach the laser stylus to the side of the machine:

1. Place the nut on the laser stylus post with the washer under it and thread the laser post into the threaded hole, near the rear wheel base. Turn until securely in place. Lock in place with the lock nut. The washer will be under the nut to protect the machine paint. An unused spool pin can also be used to mount the laser.

Follow steps 2-4 above.



Laser Stylus Safety and Use Guidelines



The laser stylus projects a straight laser beam visible as a dot on surfaces it hits. The laser dot is used as a guide or stylus, allowing you to stitch a pattern onto a quilt by tracing a printed or drawn pattern on paper.

Laser Operation and Use

There is not a separate on/off switch for the laser. Power is supplied to the laser when it is plugged into the back of the control pod on the machine. Be sure the laser is attached to the King Quilter and pointed downward toward the table before connecting it to the port. Never point it in a direction that would project the beam into someone's eyes. If the laser should cease to operate, check to ensure the plug is firmly seated into the King Quilter laser port.

- △ **CAUTION:** Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Laser Focus/Laser Image Size

This high quality laser is able to be focused. The laser is focused by simply grasping the threaded housing surrounding the lens and turning clockwise or counter-clockwise. The laser dot can be adjusted bigger or smaller. The direction of rotation needed is determined by the distance of the laser from the intended focal plane. Experiment by turning the threaded end to achieve your desired size.

Clamp Adjustment

The laser attaches to a mounting post. The post may be vertical or horizontal. The clamp is designed to articulate in any direction by rotating the clamp on the post and pivoting the laser up or down. To make an adjustment, simply loosen the black thumbscrews, position, then retighten.

Location of Laser Labels

The label is attached to the case of the laser and contains an arrow which indicates the direction the laser light will shine when energized. The label must remain in place on the laser. Removal of the label will void the laser's warranty.



Installing the Thread Mast

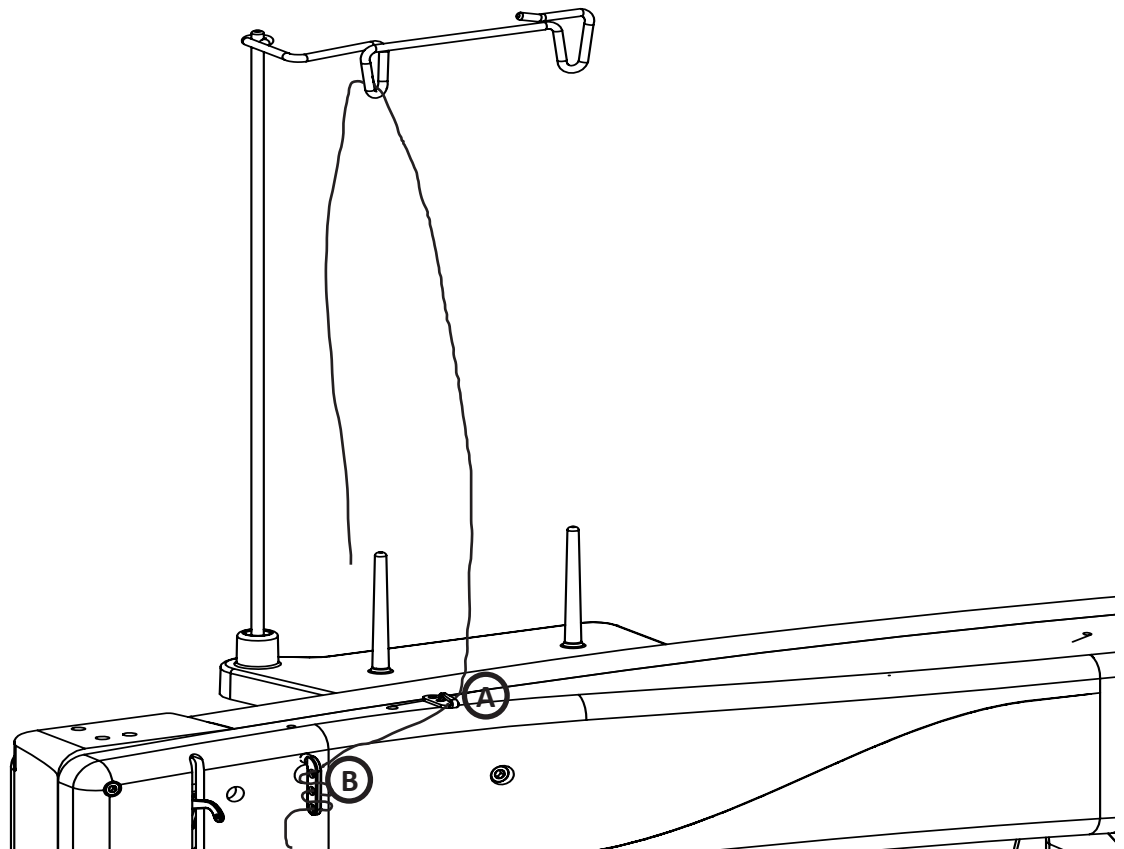


1. Locate the two threaded holes near the front left side of the machine (side opposite the top tension assembly).
2. Insert the two screws, with two washers, through the spool tray/thread mast assembly and tighten them firmly with the 2.5 Allen tool.



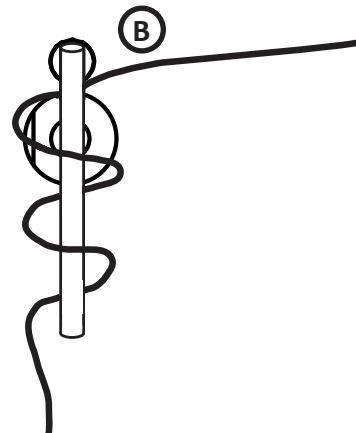
3. After the thread mast is firmly tightened, rotate the eyelets directly over the spool pins. This will help the thread not hang up on the spool pin, causing inconsistent tension issues.

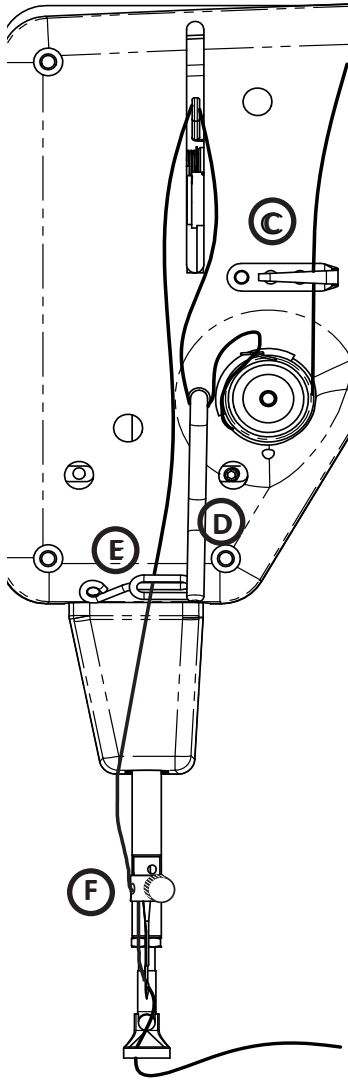
Threading the Machine



1. Place a cone or spool of thread on the spool pin. Pass the thread through **the thread-mast** eyelet from back to front, continuing to thread guide **A**.

2. Continue to the three-hole thread guide **B**. Thread all three holes from back to front, hand wheel side to needle side, wrapping the thread around the thread guide as you go.. **NOTE:** The purpose of the three-hole thread guide **B** is to prevent loops of thread coming off the thread cone from going into the top tension as a knot, causing thread breakage and bad tension. For most threads on a cone, it is important to thread all three holes for consistent results and to make adjustments at the top tension assembly. An exception to this rule is when working with very delicate threads, such as holographic or threads that are prone to breakage, in which case you may try skipping one or two holes on thread guide **B**.





3. Thread continues through thread guide **C**, and then down to the **tension assembly**.

NOTE: It is important that the thread is “flossed” up between the two tension discs. If the thread is not firmly in place between the two tension discs, the thread rests on the outside of the tension discs (without tension) and looping on fabric or thread nests may occur.

4. Once the thread is in place, be sure that the thread catches on the take-up spring and then pull it down under the stirrup (thread guide **D**).
5. Bring the thread back up through the take-up lever from back to front, and then down through thread guide **E**. Pull the thread at the take up lever to ensure that it is properly flossed between the tension disks. If it is properly flossed in the tension disks you should feel some resistance as you pull the thread. If the thread pulls freely, the thread is not properly seated between the tension disks.
6. Pull the thread down to the needle thread guide and thread through the hole (thread guide **F**).
7. Make sure the thread is following the groove down the front of the needle and thread through the eye of the needle from front to back. Be careful that the thread does not twist around the needle.

IMPORTANT: The King Quilter quilting machine does not have a presser foot lever or top tension release like a home sewing machine. On a home sewing machine the top tension is released when the presser foot is raised, allowing the thread to come freely out of the machine. When a home machine is threaded, the presser foot is raised and the tension discs are released and open for the thread to easily fall between the tension discs. This is not the case with the King Quilter quilting machine where the top tension is always tight and the tension discs are never open. Therefore, the thread must be pulled up or “flossed” between the tension discs or it will stay outside the discs and float without tension, causing serious tension problems and/or thread nests. It is also possible to bend the needle while it is threaded if care is not taken while moving the machine around the quilt because the top tension is never released.


Optional Horizontal Spool Pin

1. An optional horizontal spool pin is available for metallic and specialty threads wound on a spool (not a cone).
2. The horizontal spool pin mounts on the laser stylus guide post on the top of the machine.
3. When using threads on the Horizontal Spool Pin, skip thread guide A. Thread the top hole only of the three-hole thread guide B, back to front.
4. Continue threading the machine as described in steps 3 through 7 on the previous page.




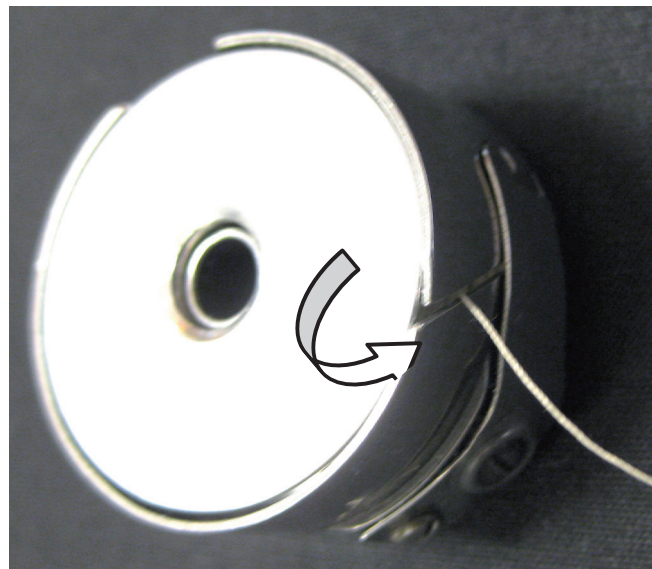
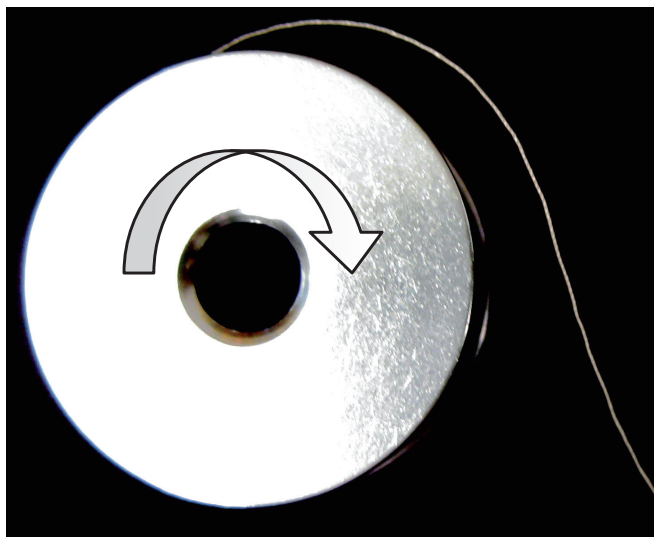
Bobbin and Thread Tension Adjustments

Inserting the Bobbin

 **NOTE:** Turn off the power switch while inserting the bobbin case or anytime your hands are near the needle area.

1. Place the bobbin in the bobbin case so that the thread pulls off clockwise when viewing the open side
2. Slide the thread through the slot and under the tension spring leaving 5 to 6 inches of thread hanging loose (see bottom image).
3. Turn off the power switch while inserting the bobbin case or anytime the hands are near the needle area.
4. Do not lift the lever on bobbin case when placing it in the machine. Fit the bobbin case onto the hook spindle in the machine. Rotate the casing until the open throat keys into the alignment notch in the middle of the hook. Push the casing in until it stops in place. Push inward until it clicks.

 **NOTE:** It is suggested that the lever on the bobbin case NOT be used for installation. The latch lever should be used only for removal of the bobbin case.



Bobbin and Thread Tension Adjustments - Continued

Bobbin Tension

The bobbin tension is the foundation tension for the entire machine. To test that bobbin tension is correct, hold the bobbin case in the palm of your hand with the open end facing up. Wrap the thread around your index finger and while pulling up on the thread and gently wiggling the finger front to back (not up and down which is not consistent), the bobbin case should lift up on its side, but NOT lift out of your hand. If it will not lift up onto its side, it is too loose. If it lifts out of your hand, it is too tight. The larger screw in the center of the tension spring is where the adjustment is made. Turn slightly clockwise to tighten and counter-clockwise to loosen the bobbin case tension. Check your bobbin tension every time a new bobbin is inserted.



Drawing the Bobbin Thread to the Top of the Quilt

1. After the machine is threaded, locate needle up/needle down button on the left handle.
2. While firmly holding the tail of the needle thread with the left hand, press the needle up/down button with right hand, bringing the needle back to the up position.
3. Move the machine three to four inches away while holding the needle thread.
4. Bobbin thread will pull up and through to the top, allowing you to grasp the loop and pull it to the desired length.



Top Tension Adjustment

- **IMPORTANT:** Top tension should be adjusted only after the bobbin case foundation tension adjustment is made.

Puckering, gathers and thread breakage occur when the top tension is too tight. Loops and thread nests occur on the back when the top thread tension is too loose. Tension may need to be adjusted depending on the fabric, thread or batting you are using on each project.

It is easy to set the top tension with the King Quilter. To adjust the top tension tighter, turn the tension knob **clockwise**. To loosen the tension, turn the tension knob **counterclockwise**. Unlike the bobbin-case adjustment, which requires minute adjustments (like the tick of a clock), the top tension knob might need to be turned anywhere from 1/4 of a turn to two to four turns to achieve balanced tension depending on the thread.

- **IMPORTANT:** Before adjusting the top tension, remember to floss or pull the top thread up into the tension discs or it will float outside the discs providing little or no top tension. This could cause significant tension or nesting problems on the bottom side of the quilt.



Maintenance

Cleaning and Lubricating the Machine

Only use light sewing machine oil in the King Quilter. Internal oiling is not necessary on the King Quilter except when the machine is taken to a service technician for routine maintenance and cleaning. The hook assembly, however, needs regular lubricating. Failure to keep the hook assembly lubricated can cause severe damage to the machine.

To lubricate, turn off the machine. Remove bobbin and case before oiling. Clean around the hook assembly with a soft brush to remove lint. Put a very small drop of oil on the hook in the region where the bobbin basket assembly and the rotating hook meet.

- ➡ **IMPORTANT:** Oiling too much can cause tension or stitching problems until the excess oil is displaced.

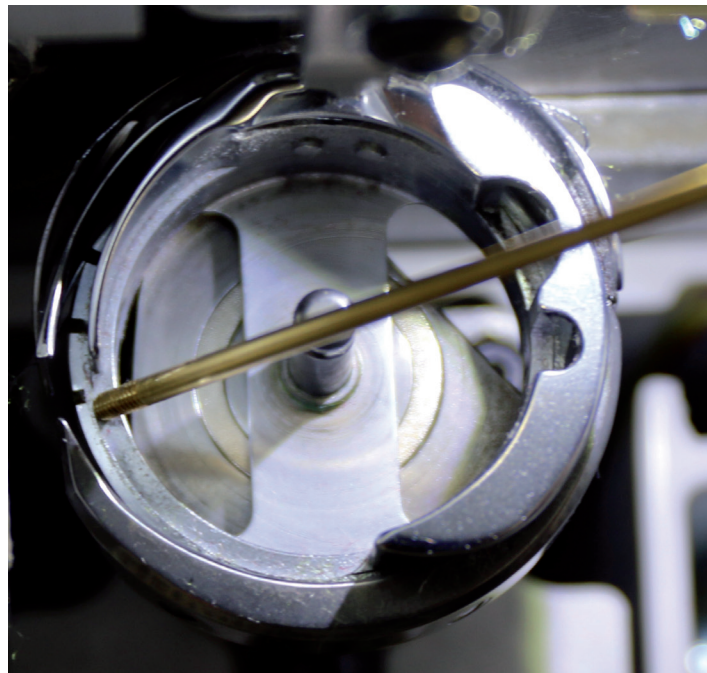
The bobbin basket is the portion of the hook that the bobbin case snaps into. The bobbin basket remains stationary while the hook rotates around the basket. The oil lubricates the region where these two components interlock. A drop of oil in the region indicated will work its way back into the interlocking area of the hook and bobbin basket.

The frequency of lubrication depends upon the usage of the machine. Lubricating is recommended before running the machine if it has not been used regularly. During use oil with every other bobbin change. Lack of lubricant may be noticed by a change in the sound of the machine and will affect stitch quality.


- ➡ **IMPORTANT:** After oiling, always sew on a scrap piece as oil may cling to thread. Over oiling can cause excess dripping from the bobbin assembly.

Cleaning the Touchscreen

Never use any chemicals to clean your display as this may adversely affect the touch screen response. Use a micro fiber cloth dampened with water, or if necessary a 50/50 solution of water and vinegar. Never spray water or the solution directly on the screen, but onto the micro fiber cloth instead.



Basic Handle Bar Screens - Overview

-  The basic handle bar screens are the same for the basic front handlebar and the optional rear handlebar.

Basic King Quilter Handle / Display Menu Screens:

The basic machine handle bar screen has 6 buttons on the home screen:

M: M for Manual Stitching Speed. Percentage is selectable from 0% to 100% by pressing the plus minus keys on the main screen or handlebars. The machine will run the selected speed percentage as soon as the start button is pressed.


P: P for Precision Stitch Regulation. In this mode the Stitches Per Inch (SPI) is selectable on the basic machine from 4 to 18 SPI. The machine will start to sew once the machine is moved by the operator in this mode.

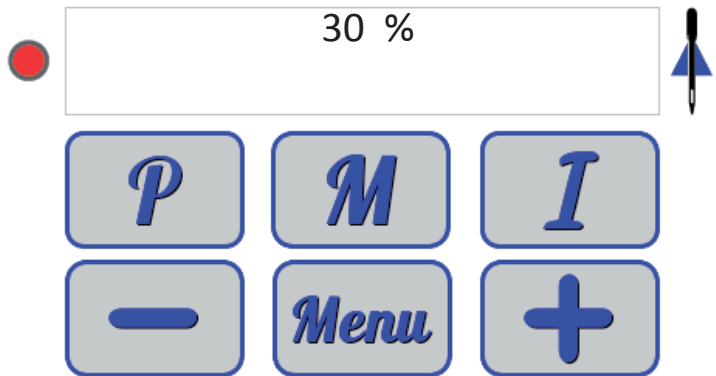
I: I for Idle / Cruise Stitch Regulation. In this mode the Stitches Per Inch (SPI) is selectable on the basic machine from 4 to 18 SPI. The Idle/Cruise speed is also selectable from 3% to 50%. The idle speed is the minimum speed the machine will run as soon as the operator presses the start button. The machine will run no slower than the idle/cruise speed setting, as soon as the start button is pressed.

-: Minus Key. This is used for making adjustments

Menu: Menu Key. This is used to switch between screen choices

+: Plus Key. This is used for making adjustments.



-  **NOTE:** When the button is pressed enough it will snap/click and change to a lighter color.





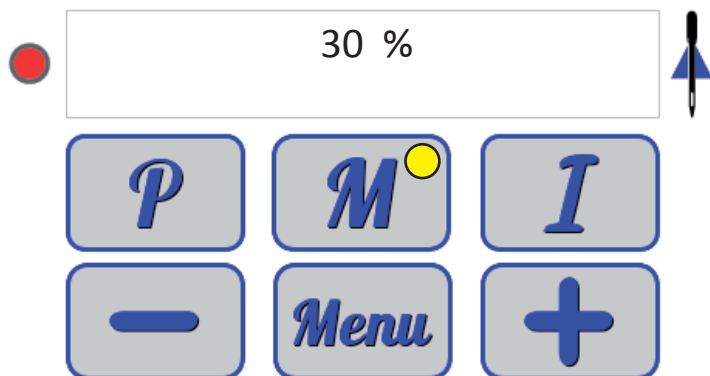
Basic Handle Bar Screens

Manual Mode selected (M has yellow dot) in the off/stop mode (red light).

- Press the plus or minus key to change the speed setting up or down

 **NOTE:**  The red dot means the machine is off, stopped and not ready to quilt when the machine is moved.

 **NOTE:**  The green dot means the machine is on and ready to quilt when moved.





Precision Stitch Regulation Mode (P has yellow dot) stop mode (red light)

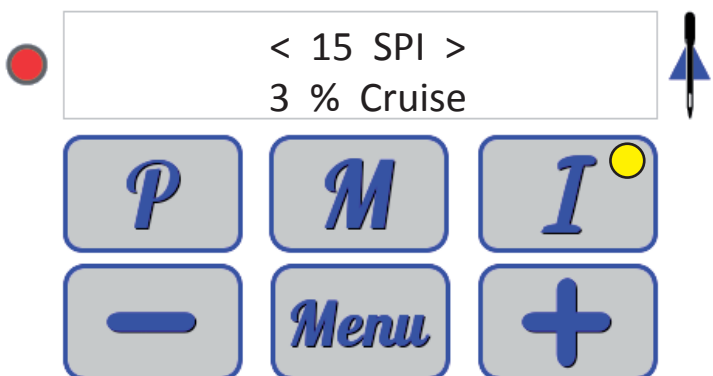
- Press the plus or minus key to change the stitches per inch (SPI) setting up or down.



Idle / Cruise Stitch Regulation Mode (I has yellow dot) stop mode (red light)

- Press the plus or minus key to change the settings up or down

 **NOTE:** Hit the "I" button when it has the yellow dot  to toggle up or down between the SPI and Idle/Cruise speed on the display. Then use the + or - key to adjust them.




Basic Handle Bar Screens - Continued

When the menu button is pressed it toggles through the following screens. Each time the menu button is pressed it changes to the next screen until it returns to the original quilting screen with speed % and SPI shown on the previous page. There are 13 other screens besides the three regular quilting screens.

Use this screen to set the default for either needle stop up or needle stop down as desired.


To change needle stop position use + or - key.



The control panel consists of two rows of buttons. The top row has three buttons labeled 'P', 'M', and 'I'. The bottom row has three buttons: a minus sign '-', the word 'Menu', and a plus sign '+'. To the right of the panel is a pen icon pointing upwards.

Use this screen to turn the light ring on or off as desired.

Press + or - to turn light ring on and off.



The control panel consists of two rows of buttons. The top row has three buttons labeled 'P', 'M', and 'I'. The bottom row has three buttons: a minus sign '-', the word 'Menu', and a plus sign '+'. To the right of the panel is a pen icon pointing upwards.

Use this screen to track the lifetime stitch count on your machine. You cannot reset this to zero.

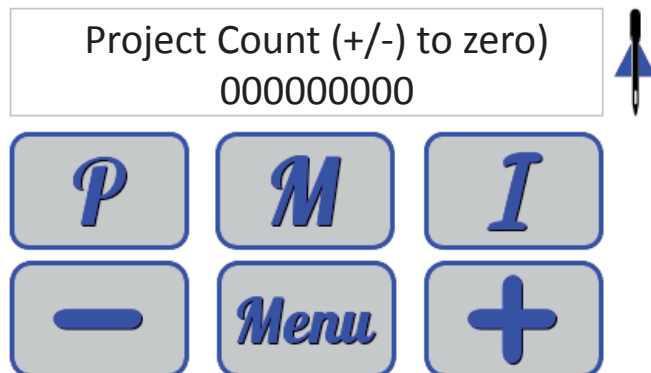
Lifetime Stitch Count
00000000



The control panel consists of two rows of buttons. The top row has three buttons labeled 'P', 'M', and 'I'. The bottom row has three buttons: a minus sign '-', the word 'Menu', and a plus sign '+'. To the right of the panel is a pen icon pointing upwards.

Basic Handle Bar Screens - Continued

Use this screen to track the number of stitches on a project. This can be reset to zero.

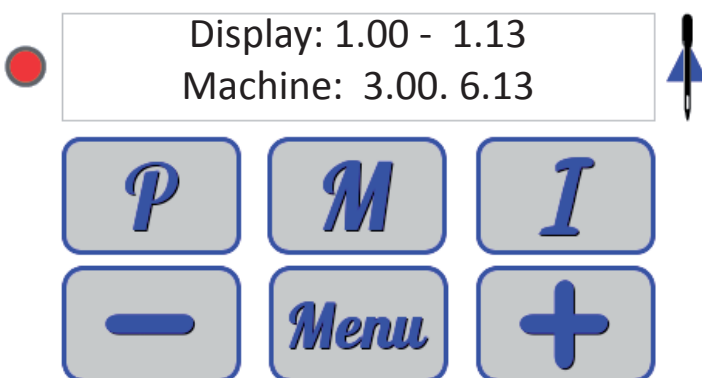


Display:

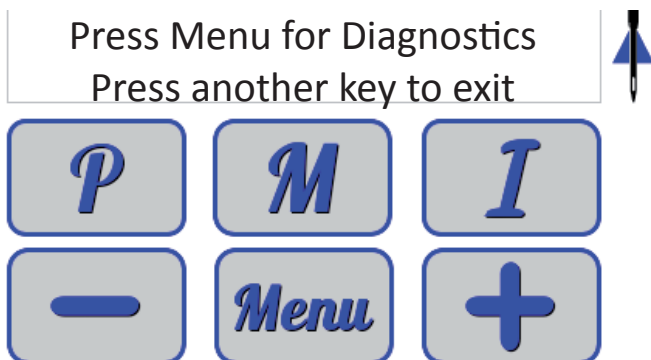
- 1st number hardware version
- 2nd number software version

Machine:

- 1st number hardware version
- 2nd number software version



Use this screen to go into diagnostic options by pressing menu or to return to quilting screens by pressing another key to exit the menus.



Basic Handle Bar Screens - Continued

Use this screen to check the carriage X encoder functionality, left to right or right to left.

● ↑

Move right and left slowly.
Tones should be heard.

<i>P</i>	<i>M</i>	<i>I</i>
—	<i>Menu</i>	+

Use this screen to check the machine Y encoder functionality, front to back or back to front.

● ↑

Move front to back slowly.
Tones should be heard.

<i>P</i>	<i>M</i>	<i>I</i>
—	<i>Menu</i>	+

Use this screen to check the needle stop up and down encoder functionality.

● ↑

Turn handwheel slowly.
Tone for 1/3 of cycle.

<i>P</i>	<i>M</i>	<i>I</i>
—	<i>Menu</i>	+

Basic Handle Bar Screens - Continued

Use this screen to check the 100 divisions on the main shaft speed encoder sensor.



Press start 99-100 is OK.

0



Press each key to see if communications are taking place properly for each key.



Name of pressed key:



Use this screen for testing the hall sensors within the motor.

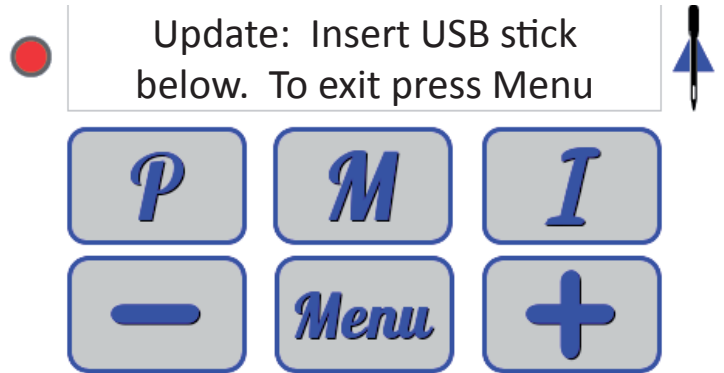


Rotate handwheel slowly.
Tones will sound regularly.

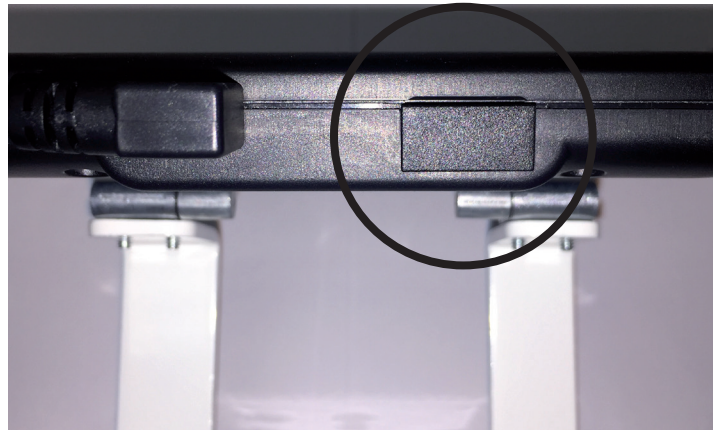


Basic Handlebar Screens - Updating Software

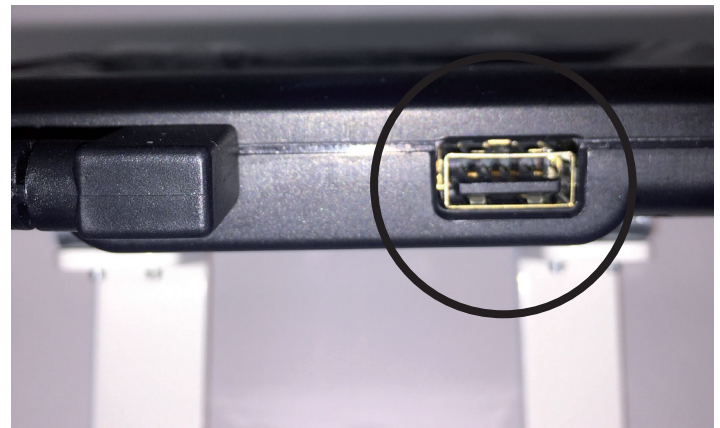
Use this to update the machine or display software.



1. Turn on the machine.



2. Remove the protective plastic black plug from the bottom of the display . This will expose the regular large USB connection for updating the machine or display.



3. Insert the USB flash drive containing the needed display and or the machine files into the bottom of the display where you removed the black plug.

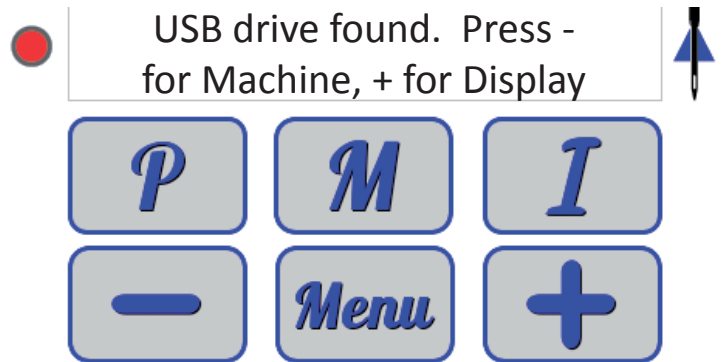
➡ **IMPORTANT:** The files must be on the main drive and not in a sub-folder.



Basic Handlebar Screens - Updating Software - Continued

- When the machine locates an update on the USB flash drive you will be prompted to select the minus button (-) on the display to update the machine or the plus button (+) on the display to update the display.

➤ **IMPORTANT:** You cannot use the plus or minus buttons on the handlebars, you must use the buttons on the touch display screen.



- During the update the screen will shut down.

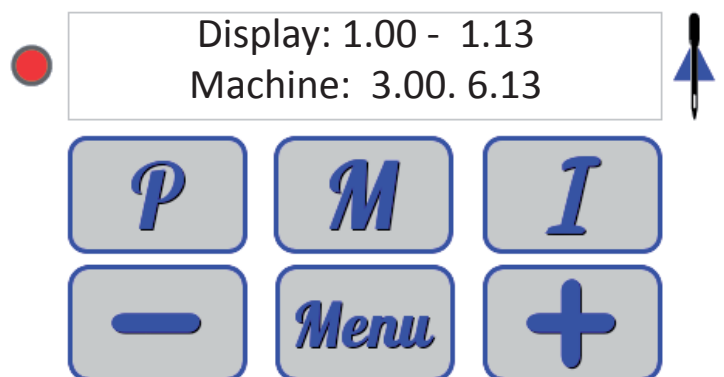
✍ **NOTE:** do not disturb the machine or display during this time period.

- After a minute or two there will be a beep and the screen will reboot to the King Quilter display screen.



- To check the current display and machine information, press the menu button to scroll down through the features until you reach the machine/display information screen

- Once the update are complete, remove the USB flash drive and reinsert the protective plug into the USB port.



Special Edition Machine Overview

Handlebar Display Menu Screens:

The special edition machine handle bar has 4 stitch mode buttons on the home screen:

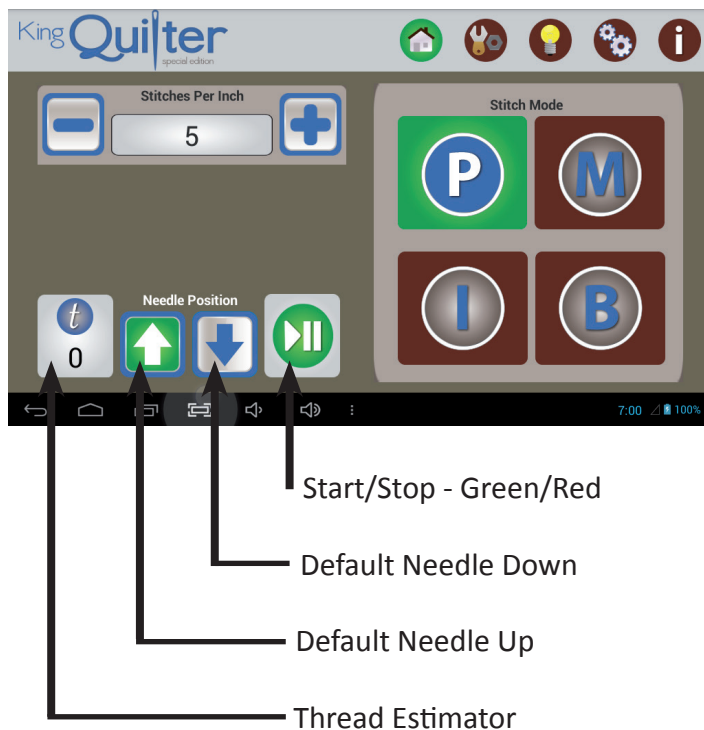
P: P for Precision Stitch Regulation Mode. In this mode the Stitches Per Inch (SPI) is selectable on the special edition machine from 4 to 22. The machine will start to sew once the machine is moved by the operator in this mode.

M: M for Manual mode Stitching. Speed percentage is selectable from 0% to 100% by pressing the plus / minus keys on the main screen or handlebars. The machine will run the selected speed percentage as soon as the start button is pressed. The special edition machine also has two manual preset speeds within manual mode.

I: I for Idle / Cruise Stitch Regulation. In this mode the Stitches Per Inch (SPI) is selectable on the special edition machine from 4 to 22. The Idle/Cruise speed is also selectable from 3% to 50%. The idle speed is the minimum speed the machine will run as soon as the operator presses the start button. The machine will run no slower than the idle/cruise speed setting, as soon as the start button is pressed.

B: Basting stitch. Four basting stitch lengths are available. The options are 4 inch, 2 inch, 1 inch and 1/2 inch. Press the minus key to get less stitches per inch and to go from 1/2 inch to 1 inch to 2 inch and finally to 4 inch basting stitches.

- -: Minus Key, used for making adjustments
- Stitch Numerical Display
- +: Plus Key, used for making adjustments.
- Bobbin Estimator Display (counts down to zero)
- Default Needle Up button
- Default Needle Down button
- Start / Stop button (hit green to go or turn on the machine and red to stop or turn off the machine)



Special Edition Lighting:

In addition to the light ring, the special edition handle bars also have lights and UV lights.

- Light Ring
- Handlebar lights
- UV lights

Special Handle Bar Functions:

- Adjustable
- Micro handle positioning

Speed

Pressing the “+” will increase the manual mode motor speed and pressing the “-” button will decrease the manual mode motor speed. This has the same effect as pressing the “+” and “-” buttons on the actual handles. The speed range is between 5% and 100%, or between 90 and 2,200 stitches per minute (SPM). The percent speed is displayed in the white box at the top of the screen.

Special Edition Machine Overview - Continued

Example image: P is selected (green), needle up is selected (green) as the needle position default when the stop button is pressed, and the play/pause button is activated (green). Once you press the green play/pause button, the button will turn red and the machine will turn on; the needle will start to move as soon as the machine is moved across the quilt. When the red pause/play button is pressed the machine will turn off and the button will change to green, meaning the machine is off and ready to start again, once the green button is pressed.



Important Note: Once the play pause button is pressed the P (green) button will turn to gray. This is to visually indicate the machine is in the on, ready to sew mode, as soon as the machine is moved across the quilt.

Special Edition Handlebar Screens: Home Screen

P: P for Precision Stitch

Regulation Mode. P is green when selected. In this mode the Stitches Per Inch (SPI) is selectable from 4 to 22 on the special edition machine. The machine will start to sew once the machine is moved by the operator, in this mode.

M: M for Manual mode Stitching.

Speed percentage is selectable from 3% to 100% by pressing the plus/minus keys on the main screen or handlebars. The machine will run the selected speed percentage as soon as the start button is pressed.

Special Edition Presets:

The special edition machine also has two customizable preset speeds within manual mode. The folder button is pressed to save a speed setting. The speed setting % button is pressed to select that saved setting. The plus/minus keys adjust the speed setting on the speed display. The selected speed displays when a preset button is pressed.

I: I for Idle / Cruise Stitch

Regulation. In this mode the Stitches Per Inch (SPI) is selectable on the special edition machine from 4 to 22. The Idle/Cruise speed is also selectable from 3% to 50%. The idle speed is the minimum speed the machine will run as soon as the operator presses the start button. The machine will run no slower than the idle/cruise speed setting, as soon as the start button is pressed. For this reason it is usually set at a low number, e.g. 3%.



Special Edition Handlebar Screens: Home Screen - Continued

B: Basting stitch. Four basting stitch lengths are available. The options are 4 inch, 2 inch, 1 inch and 1/2 inch. One presses the minus key to get less stitches per inch and to go from 1/2 inch to 1 inch to 2 inch and finally to 4 inch basting stitches.

- 1/2-inch baste (one stitch every half-inch movement of the machine)
- 1-inch baste (one stitch every one inch movement of the machine)
- 2-inch baste (one stitch every two inches of movement of the machine)
- 4-inch baste (one stitch every four inches of movement of the machine)



Special Edition Handlebar Screens: Tools (Calculator and Timers)

Tools: The second button from the left on the top menu is the Tools menu. The icon looks like a wrench. When pressed it brings up the following menus:

- **Calculator (shown in green)**
- Timers
- Update
- Diagnostics

When the top button is pressed the calculator button turns green and the calculator is displayed.



Tools: Timers

When Timers button (clock icon) is pressed the Timers menu comes up (green). Timers left to right are:

- Run timer
- Stitch Counter
- Count Down Timer

The timers help track time, stitches or amount of time left to work.



Run Time Timer: The Run Time Timer tracks how long the machine has run on a quilt project. When you begin a new project, press the reset button. Then press the “play” button to begin recording your quilting time. The timer records when the machine is quilting. The time is saved even when the machine is turned off. When you begin another quilting session, quilting time is added to the timer. Only press “reset” when you want to zero-out the timer and begin a new timing session.

Stitch Counter: The Stitch Counter tracks the number of stitches you have done on a project. Only press “reset” when you want to zero out the counter.

Count Down Timer with Alarm: The Count Down Timer with Alarm is a reminder timer. It enables you to set an alarm to go off after a specific period of time, similar to a kitchen timer. Use the “+” and “-” buttons to set the time duration. Then press the on/off button to activate the timer. When the time duration has elapsed, an alarm will sound.

Special Edition Handlebar Screens: Tools (Update) Updating the Display

Tools: Update

The Update button (circular double arrows icon) will turn green when pressed. This is used to update the display software.

- ➔ **IMPORTANT:** The Special Edition display does not offer machine software update capability. The machine software can be updated with the optional rear handlebar or by Sewing Machines Plus.



Updating the Display Software

1. Remove the protective plug from the large USB port on the bottom of the display.



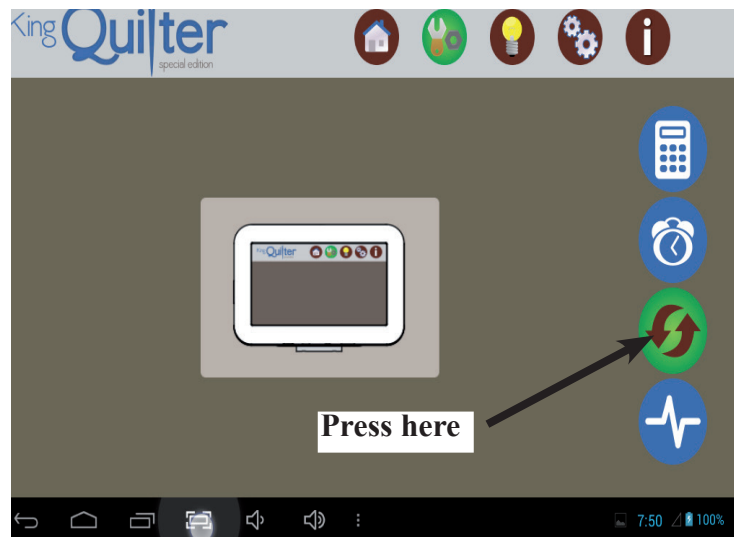
Special Edition Handlebar Screens: Tools (Updating the Display - Cont.)

2. Insert the USB flash drive containing the display software into the USB port.

- **IMPORTANT:** The display update must be in the main directory of the flash drive and not in a folder or subdirectory.



3. In the Tools menu select Update, the circular double arrow icon should now be green.



4. Select the display image on the center of the touch screen by touching it.

5. Tap the desired update version on the touch screen to select it (usually the latest version, if there are more than one on your USB flash drive).

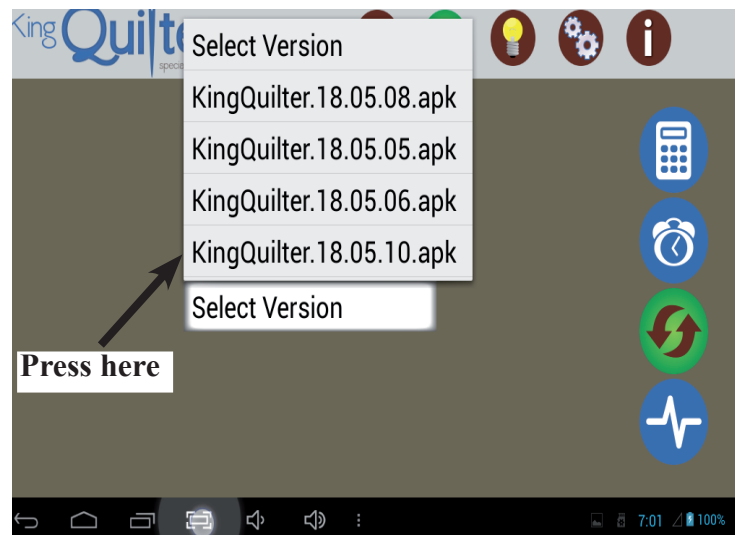


Special Edition Handlebar Screens: Tools (Updating the Display Cont.)

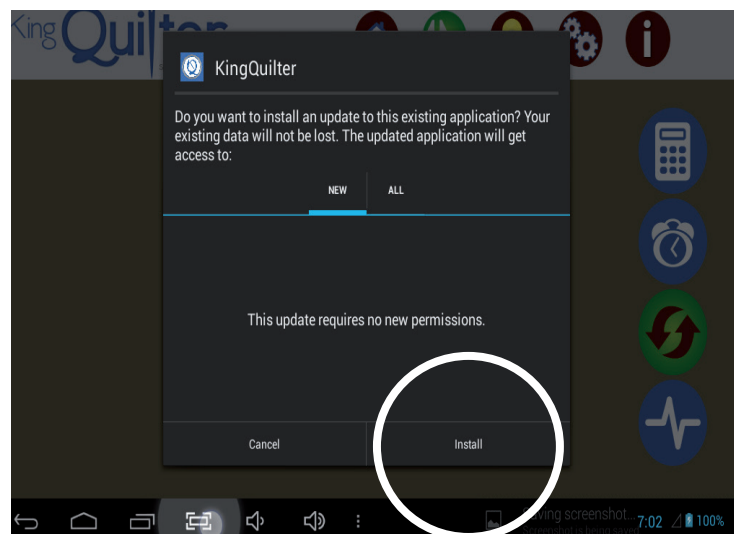
5. Tap Select Version on the touch screen to populate the updates available on the USB flash drive.



6. Tap the desired update version on the touch screen to select it (usually the latest version, if there are more than one on your USB flash drive).

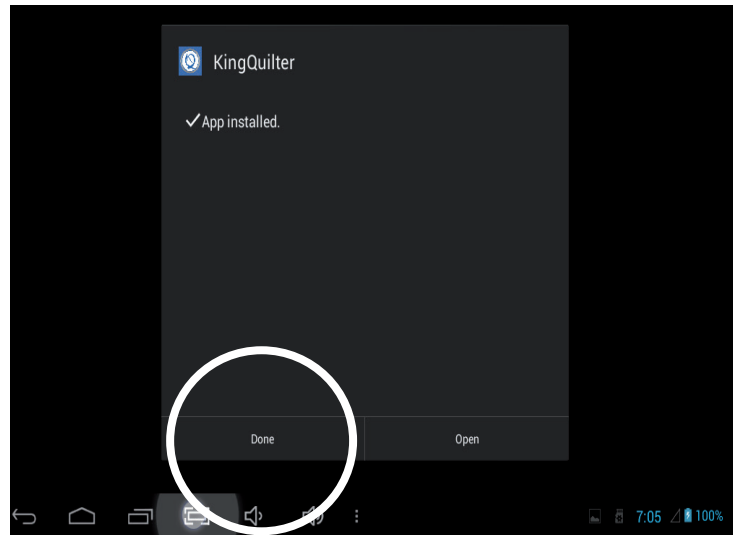


7. On the pop-up select "Install" (new should be the default and you should not have to change anything, just touch Install).



Special Edition Handlebar Screens: Tools (Updating the Display Cont.)

8. When the application has finished installing select “Done”.



Special Edition Handlebar Screens: Tools (Diagnostics)

Tools: Diagnostics

The fourth and final button on the tools menu is the diagnostics button and will turn green when pressed. Six different diagnostic tests can be performed on the machine. These functions test the motion encoders, the motor control functions, the key switches and the internal position sensors. They are in order from left to right:

- Y: for checking stitch regulation encoder front to back
- X: for checking stitch regulation encoder left to right
- Needle position sensor, for checking sensor operation
- Keys, for checking key operation
- Motor test, for testing the hall sensors in the motor.
- Speed Test, for testing the speed sensor, 99-100 is OK.

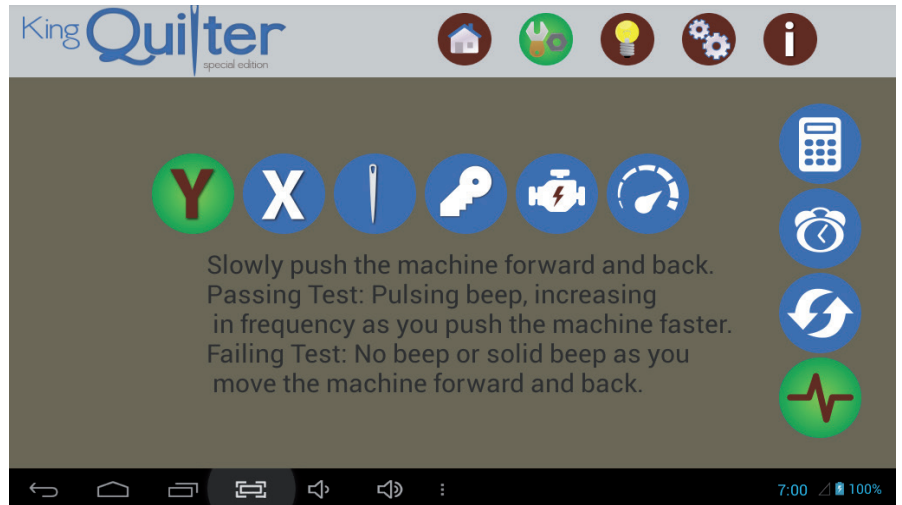


Special Edition Handlebar Screens: Tools (Diagnostics - Y and X)

Y Motion Sensor Test

Use the Y machine encoder / motion sensor to check the machine front to back motion functionality of the Y stitch regulation encoder mounted at the machine's left rear wheel.

As you slowly move the machine front to back you should hear a pulsing "beep" that pulses faster as you move faster. A solid beep, no beep, or periods of irregular beeping (with constant motion) indicate a problem with the Y encoder.



The most likely cause of a problem is an encoder assembly wheel that is not making consistent contact with the track. Check the spring tension on the sensor assembly on the carriage to assure that it will easily return to the fully extended position after being compressed. Also assure that the track is straight with no dips or indentations and that it is clean and free of contamination. Other causes are an unplugged or damaged cable or possibly an issue with the machine's main control board.

X Motion Sensor Test

Use the X carriage encoder / motion sensor to check the left to right motion functionality of the X stitch regulation encoder mounted at the rear of the carriage.

As you slowly move the machine left to right you should hear a pulsing "beep" that pulses faster as you move faster. A solid beep, no beep, or periods of irregular beeping (with constant motion) indicate a problem with the X encoder sensor assembly.



The most likely cause of a problem is an encoder assembly where the wheel is not making consistent contact with the track. Check the spring tension on the encoder assembly on the carriage to assure that it will easily return to the fully extended position after being compressed. Also assure that the track is straight with no dips or indentations and that it is clean and free of contamination. Other causes are an unplugged or damaged cable or possibly an issue with the main control board.

Special Edition Handlebar Screens: Tools (Diagnostics - Needle and Key)

Needle Sensor Test

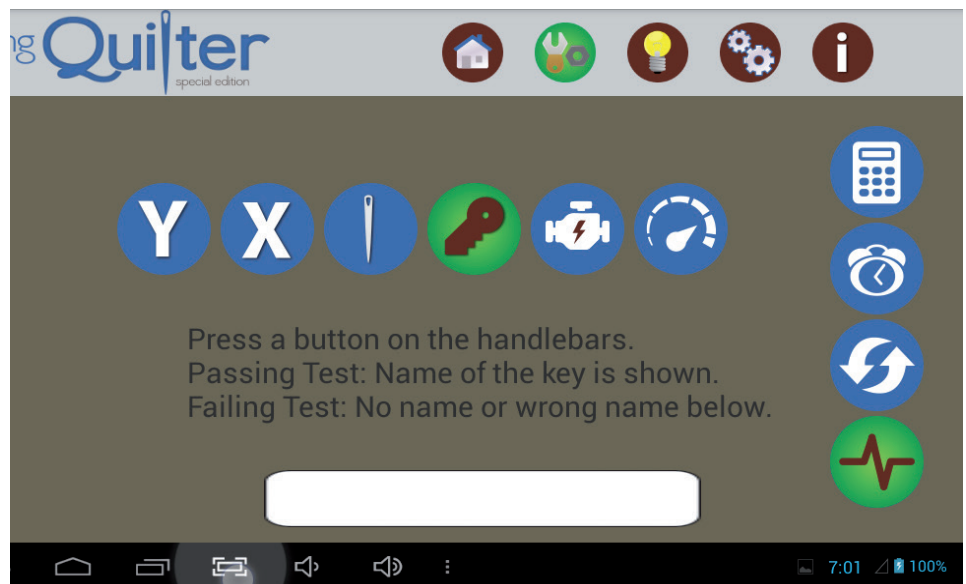
The Needle Sensor test will indicate whether the needle position sensor is functioning properly. Rotating the handwheel should result in a “beep” for 1/3 of a stitch cycle and no beep for the rest of the stitch cycle; the machine will beep from when the take-up lever is up until the needle is down.

If you hear a constant beep or no beep at all for a full 360° rotation of the handwheel, this indicates a failed test and the machine should be inspected by a qualified Sewing Machines Plus repair technician.



Key or Button Test

The key test is for checking each key or button for functionality, to confirm communication between the handlebar and the machine when the key or button is pressed.



Special Edition Handlebar Screens: Tools (Diagnostics - Motor Tests)

Motor Test:

Use this screen for testing the hall sensors within the motor.

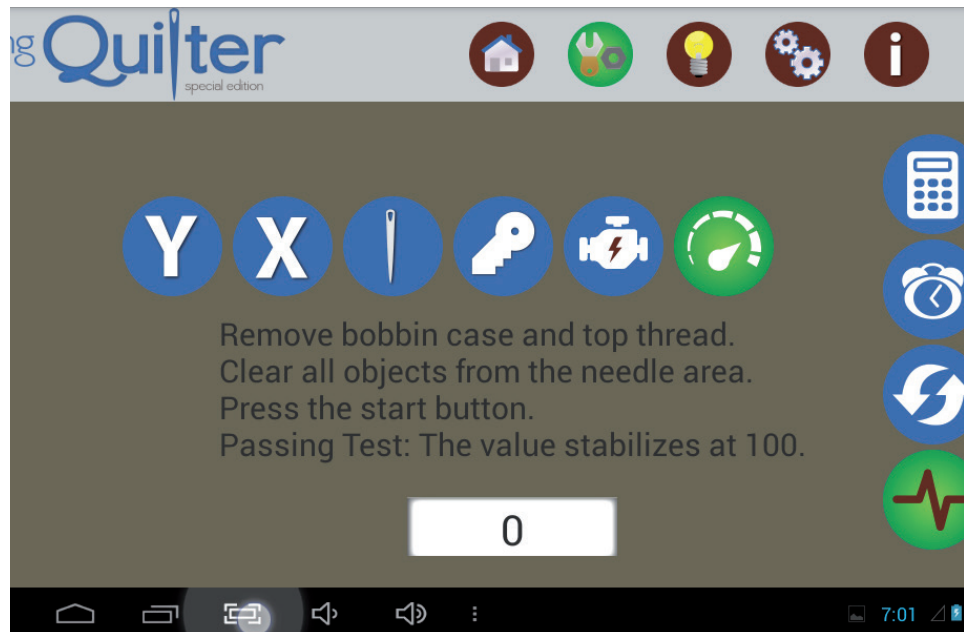


Motor Speed Sensor Test:

Use this screen to check the 100 divisions on the main shaft speed encoder sensor.

Motor Speed Sensor Test

The "Speed" Sensor test can help you determine whether or not there is a problem with the King Quilter speed sensor. Before performing this test, remove the bobbin case and the top thread. Press the "Start" button and the machine will begin slowly rotating. The white box will show a number that should stabilize at 100 if the sensor is functioning properly. Pressing "Start" again will stop the machine. Note: 99-100 is OK.



Special Edition Handlebar Screens: Lighting

The King Quilter Special Edition handlebar comes equipped with LED lights and UV lights. The machine also has a light ring to illuminate around the needle area.

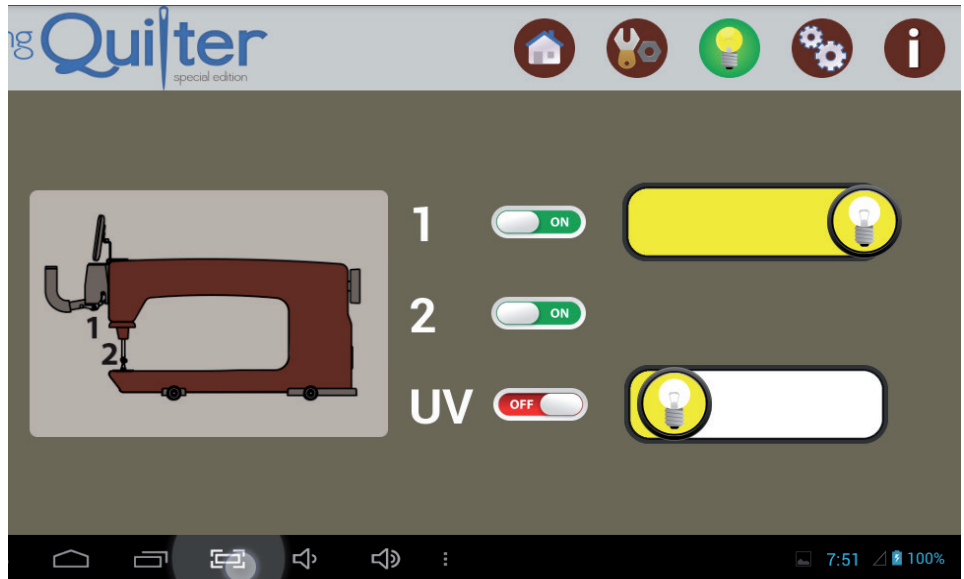
“1”: The handlebar LED lights are controlled by the green/on and red/off switch in the center labelled “1”. Handlebar LED brightness is controlled by the yellow slider switch at the right

“2”: The light ring around the needle area is controlled by the green/on and red/off switch in the center labelled “2”. Light ring LED brightness is controlled by the yellow slider switch at the right of “1”.

Note: the same yellow slider switch controls the handlebar LEDs and the light ring LEDs.

“UV”: UV lights are controlled by the green/on and red/off switch to the right of “UV”. UV light brightness is controlled by the yellow slider switch to the right of “UV”.

△ **CAUTION:** Looking directly into the UV lights or prolonged exposure to the UV lights can damage your eyes. Limit the use of the UV lights to avoid permanent eye damage. Using UV A/B blocking sunglasses will reduce eye strain and limit the effects of prolonged exposure to UV lighting.



△ **CAUTION:** Users who have had cataract surgery should not use the UV lighting unless they have had UV A/B blocking replacement lenses implanted as part of the surgery.

UV lighting

UV lighting can be very useful when trying to view white thread or white chalk on white fabric. The best contrast is achieved when viewed in a dark or dimly lit room. Although Sewing Machines Plus has chosen to use UV lights which emit a light wavelength at the lowest end of the UV spectrum to minimize eye strain and damage, constant or direct exposure to any UV lighting can cause eye strain and may lead to permanent eye damage. Be careful and avoid looking directly at the UV lights (which emit a violet colored light). The UV lights should only be used when other lighting sources cannot produce the visual contrast necessary to achieve accurate quilting.

Special Edition Handlebar Screens: Settings (Thread Indicator)

Main Screen:

Bobbin Thread Indicator

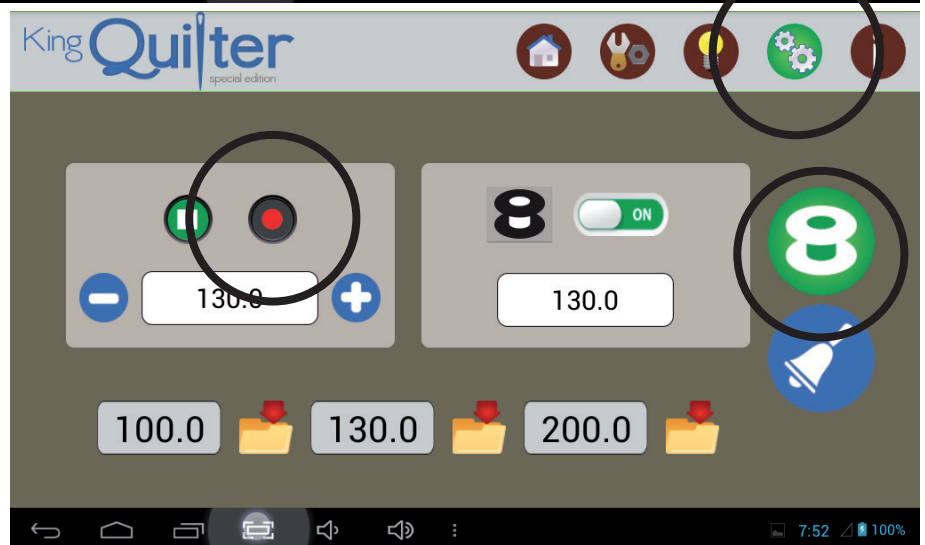
If you use the Low-Bobbin Estimator feature, The Bobbin Thread Indicator box on the main screen, shows how much bobbin thread remains on the bobbin. The value counts down until it gets to zero, at which time the low-bobbin alarm alerts you that it is time to put in a new bobbin, if the alarm is enabled. While the machine is recording how much thread is on a bobbin, the record button is green.



Settings:

Low Bobbin

The King Quilter includes a low bobbin estimator so you can estimate when your bobbin thread will run out. This low bobbin estimator is based on an estimate of how much of a particular thread can fit on a bobbin, in combination with other quilting factors such as tension, stitches per inch, and how much bobbin thread you pull up when beginning and ending your quilting.



Record:

To estimate how much thread is on a bobbin, place a full bobbin in the machine and select the “Settings” button on the top menu bar. It will turn green. Next select the “Bobbin” button. Touch the “Record” button to start recording the bobbin thread capacity.

When the bobbin runs out, press the square “Stop Recording” button and note the number that is indicated under the Bobbin Thread Capacity e.g. 210. Since you want a warning as to when the bobbin is getting low, use the “-” button to specify a lower number, such as 195. Save that as one of the three Bobbin Thread Estimator Presets. You might want to make a note as to which type of thread the preset represents. Put a new bobbin with the same thread into the machine and press the New Bobbin button. Then press the Alarm button. As you quilt, the remaining bobbin thread value will estimate how much thread remains on the current bobbin, and when you reach zero, an alarm will sound warning you that your bobbin is nearly out of thread.

Special Edition Handlebar Screens: Settings - continued

Settings:

Low Bobbin Alarm

To turn the low bobbin alarm on, select "Settings" from the top menu bar. Next select the bobbin button until green to turn on the alarm.

Timer Alarms:

To turn on the timer alarms, select the alarm button until green.



Note: When operating in Manual mode, the low bobbin function assumes you will stitch at approximately the last SPI setting you had on the regulated screen. If the SPI setting was below 8 stitches per inch, the function will assume you will quilt at 10 stitches per inch. It is advisable therefore to set the stitches per inch that you will be quilting on the regulated screen before you change to manual mode.

You can store three Bobbin Thread Capacity preset values, one for each of three different types of thread. Simply go through the record process with a full bobbin of that type of thread and then store the capacity as a preset. When you switch to using that type of thread, press appropriate preset button. Insert a full bobbin with that type of thread, press New Bobbin, and all of the settings will be based on that type of thread.

Special Edition Handlebar Screens: Information

System Information

This screen displays the machine hardware, display hardware, and the handlebar hardware versions on the left. It also displays the machine software, display software and handlebar software versions on the right.

Lifetime Stitch Count:

Lifetime stitch count on the machine appears at the bottom right of this information screen.



On/Off Indicator

The start/stop button at the bottom center of the screen, turns green when you press the Start button on the handles to indicate the motor is on and the needle is ready to move in precision mode or already moving in manual or cruise mode.

The start/stop indicator button will change from red to green as soon as you press the Start button on the handles. If you are in Precision mode, the needle will not start moving until you start moving the machine, so this green indicator shows that the Start command was accepted and the machine is ready to begin stitching. In Cruise mode, the red box will turn to green and the needle will begin stitching immediately at the set Idle/Cruise speed.

STITCH REGULATOR OPERATION

Choose from Two Types of Stitch Regulation: Precision or Idle/Cruise

IMPORTANT NOTES ABOUT TURNING STITCH-REGULATION ON OR OFF

You can stop the machine at any time by pushing either the “Start/Stop” or the “Needle Up/Down” key on the handles. In **Idle/Cruise Regulation** mode, if you don’t move the machine after 3 or 4 seconds, the machine will stop and position the needle. In **Precision Regulation** mode, the needle pauses when you stop moving the machine and will begin stitching again when you start moving the machine. Press the “Start/Stop” (or “Needle Up/Down”) key in Precision Regulation mode to stop the needle completely and cause the needle to position itself in the Needle Up or Down position.

Idle/Cruise Regulation Mode

When in Idle/Cruise Regulation mode, the start indicator box in the bottom center of the “Regulated” screen is red. When you press the “Start/Stop” key to start the machine, the indicator will turn green AND the needle will begin moving up and down.

The minimum speed of the needle is dependent upon the setting you choose (from 3% to 50%). Sewing Machines Plus recommends beginning with a setting of 3%.

When to Use Idle/Cruise Regulation Mode

The constant minimum stitching speed featured in the Cruise Regulation mode is used for precise placement of stitching when backtracking (such as along the tops of feathers) or when creating sharp points (such as the point of a star or the bottom of a heart).

Precision Regulation Mode

When in Precision Regulation mode, the start indicator box in the top center of the “Regulated” screen is red. When you press the “Start/Stop” key to start the machine, the indicator will turn green. As you start moving the machine, it will begin stitching. When you stop moving the machine, the needle pauses (sometimes in mid-stroke).

When you press the “Start/Stop” (or “Needle Up/Down”) key to stop the machine, the indicator will turn red, showing that the needle will not move when you move the machine. **Always make sure the indicator is RED when you are in Precision Regulation**

mode prior to working with your hands near the needle (changing the needle, replacing the bobbin, etc.) to avoid unwanted stitching in your quilt or your hands!

If you leave the King Quilter in Precision Regulation mode with the start indicator box green and do not move the machine for two minutes, the system will “time-out” and a the following message will appear: “ERROR - Stopped! Press start to resume quilting”.

When to Use Precision Regulation Mode

Precision Regulation mode is especially useful for ruler work. Stitch along the length of the ruler for the span of your hand and stop. When you stop moving the machine, the needle pauses. Do not turn off the machine. Move the ruler and resume quilting. The Precision Regulation helps you avoid “bobbles” and uneven stitches.

Quilting Speed While in Stitch-Regulation Mode

It is important not to move the machine too fast, since this will result in an **OVER-SPEED CONDITION**, during which, the machine cannot maintain stitch regulation until you slow your motions to an appropriate speed. The Over-speed Alarm will alert you to this condition, giving you the signal to slow down. Stitch regulation is not a license to move the machine as fast as you can. Its purpose is to maintain even stitches while quilting at an appropriate speed.

You can return to manual mode by pushing the “Manual” button below the “Regulated” button on the touch screen display.

Getting Started Quilting

Thread Requirements

Threads have a tendency to dry rot over a period of time. Be sure to choose high quality threads for your valuable heirloom quilts. Most machine quilting threads on the market today are acceptable.

Needle Requirements

For general quilting, a size 16/100 needle will accommodate most threads and fabrics. Heavier threads, such as top stitch and some decorative threads, require a larger needle such as 18/110 or 20/120. Lofty batts and heavier fabrics such as denim, canvas or densely woven fabric may also require a larger needle.

To Prepare for Quilting

With any quilting machine, it is important to understand the basics of free motion quilting. The King Quilter quilting machine does not have feed dogs like domestic machines, therefore, the fabric does not automatically feed under the hopping foot. The operator should synchronize the speed as well as the movement of the machine to get an even, consistent stitch.

In order to become comfortable with the free motion of the King Quilter, users can begin with a few beginner techniques.

In Manual Mode: Set the machine at a medium speed and begin moving it until you become accustomed to the resistance. By moving the machine faster, the stitches begin to elongate. The stitch speed can either be increased or the machine can be moved slower to get the stitches back to the desired length. By moving the machine slower, the stitches get shorter and can build up on top of each other, breaking the thread or making it extremely difficult to pick out. The stitch speed can be decreased, while maintaining a constant motion with the machine to bring the stitches back to the desired length.

In Stitch Regulator Mode: Set the machine to desired stitch length. Begin moving the machine to become accustomed to the resistance. The machine motor will slow down or speed up to maintain a consistent stitch length according to how quickly or slowly you move the machine. Moving the machine too fast or in radical or jerky movements will defeat the stitch regulator function.

In MANUAL or IDLE/CRUISE REGULATION mode, when pressing the “Start/Stop” key on the front or rear handle bars to begin quilting, make certain to begin moving the machine immediately. If the needle stitches in one place too long, the stitches build up on top of each other causing a build-up of thread or thread breakage. When bringing the machine to a complete stop press the “Start/Stop” key at the same moment the machine stops moving. If the machine is still moving when the “Start/Stop” key is pressed, it can cause deflection in the needle, possibly causing it to bend or break.

In PRECISION REGULATION mode, the needle will not begin moving when you press the “Start/Stop” key until you begin moving the machine.

When quilting, relax your hands and maintain a light touch on the handlebars. Gripping the handlebars too tightly may cause body tension, resulting in poor quilting quality. The King Quilter, combined with the King Quilter Frame system will give you a smooth even glide.

Troubleshooting

Stitches are Skipping	Corrective Measure
<ul style="list-style-type: none"> ▶ The needle is damaged, dull, bent, or installed improperly ▶ Incorrect needle size ▶ The needle has not been positioned properly ▶ Fabric is too tight on the frame ▶ Thread tension too tight ▶ Improper threading 	<ul style="list-style-type: none"> ▶ Replace the needle often, normally once or twice per day for continuous quilting or at least once per quilt. Use King Quilter recommended needles. ▶ Always change the needle if the needle has struck any hard object such as a straight pin, etc. The tip of the needle can become damaged or burred, resulting in fabric damage as well as skipped stitches, thread breakage or shredding. ▶ Always change the needle if it has been hit, bumped or pulled off center while maneuvering the machine about the quilt. A slightly bent needle can be a major cause of skipped stitches. ▶ Check for the proper size of needle for the work and thread being applied to the quilting operation. Some battings and fabrics used in quilting may constrict or impede the thread passing through the front groove of the needle. This diminishes the loop lift required for stitch formation. Typically, a larger needle will solve the problem; however, it has been found that certain smaller sizes of needles as well as the use of ball pointed needles solve some specific problems. ▶ Position the needle properly to the needle bar. Inspect the position of the needle to make sure the needle is at the 6 o'clock position — If you stand directly in front of the needle (facing the bobbin case side of the machine), you will see the entire needle eye directly facing you. This is 6 o'clock position. Make sure (1) the needle is installed all the way into the needle bar to the needle stop hole in the needle bar, (2) the long groove in the needle is toward the front (bobbin case side), and (3) the scarf/scooped out part of the needle is toward the handwheel. The needle can sometimes be rotated to 5 o'clock (slightly right) or 7 o'clock (slightly left) in order to adjust for a more positive thread loop pickup by the hook point. ▶ Loosen pole tension on the frame. Fabric that is rolled too tight causes the fibers to separate. This reduces the needle friction on the thread resulting in a smaller thread loop. ▶ Loosen top tension. Re-check top and bobbin tension (see pages 22-24). ▶ Inspect that the thread take-up lever, thread stirrup or tension spring are all threaded correctly.
<p>The Needle Breaks</p> <ul style="list-style-type: none"> ▶ The needle is bent or not installed properly ▶ The needle hits the throat plate 	<p>Corrective Measure</p> <ul style="list-style-type: none"> ▶ Replace or correctly change the needle. Make sure that the needle is pushed up into the needle bar clamp until it can go no farther (visually check that it is up to the top of the stop/sight hole above the needle bar clamp screw). Failure to do so can cause damage in the bobbin area and throat plate. ▶ Correctly position the needle, throat plate or hopping foot. Replace with a new needle.
<p>Stitches are Puckered</p> <ul style="list-style-type: none"> ▶ The tension is not balanced ▶ Needle too large for material 	<p>Corrective Measure</p> <ul style="list-style-type: none"> ▶ Balance the tension of the needle thread after ensuring the bobbin tension is adjusted correctly (see page 22). ▶ Replace the needle with a size better suited for the fabric.
<p>Stitch Quality is Poor</p> <ul style="list-style-type: none"> ▶ The tension is not balanced ▶ Bobbin case is damaged, corroded, dirty, etc ▶ Moving the machine too fast for needle speed selected ▶ Encoder wheels do not consistently touch the track 	<p>Corrective Measure</p> <ul style="list-style-type: none"> ▶ Adjust the tension of the needle thread after ensuring the bobbin tension is adjusted correctly (see page 22). ▶ Since thread slides over the surface of the bobbin case at a high speed, make sure the case is free of any lint or foreign matter that could impede thread passage through the machine. ▶ Synchronize machine movement and needle speed to get roughly 8-10 stitches per inch. Elongated stitches are an indication of moving the machine too fast for the current speed. ▶ Clean the track and the rubber wheel on each encoder. Even a tiny speck on the wheel can cause problems with regulation. Check the spring tension on the encoder assemblies. If the retaining nut is even slightly too tight it can prevent the wheel from properly pressing against the track.



Troubleshooting

Tension is Poor	Corrective Measure
<ul style="list-style-type: none"> ▶ “Fuzz” caught under the tension spring in the bobbin ▶ Poorly wound bobbin. 	<ul style="list-style-type: none"> ▶ If using short staple threads, inexpensive or industrial threads or coated threads, lint and other material will build up under the tension leaf spring and begin to lift the spring, reducing the spring’s ability to compress against the thread. By inserting a needle under the spring and clearing out the lint, the bobbin tension will return fairly close to its preset tension. ▶ If the bobbin is wound too tight or too loose, this can lead to poor and inconsistent tension. Make sure when the bobbin is wound that the thread tension is not so tight that the wound bobbin thread feels hard and causes the bobbin to bulge when it is wound. It should also not be so loose that the thread is spongy, causing the thread to tangle as it is wound.
Hand Wheel Won’t Rotate	Corrective Measure
<ul style="list-style-type: none"> ▶ Thread is entangled and caught in the hook 	<ul style="list-style-type: none"> ▶ Turn off the machine and unplug the machine from the electrical outlet. Lubricate the hook, strongly turn the hand wheel clockwise and if necessary counterclockwise several times, and then remove the thread caught in the hook.
Thread Nests Under Quilt	Corrective Measure
<ul style="list-style-type: none"> ▶ Not enough tension on top thread ▶ Improper threading 	<ul style="list-style-type: none"> ▶ Check that the machine is threaded correctly. Make certain that the thread is flossed snugly in place between the two tension discs. If machine is threaded correctly, tighten top tension by rotating the tension knob clockwise. ▶ Refer to threading diagram and threading instructions (page 19).
Hard to Guide Machine	Corrective Measure
<ul style="list-style-type: none"> ▶ Carriage wheels not centered on track ▶ Thread caught in wheels 	<ul style="list-style-type: none"> ▶ Center the carriage wheels on top of the continuous track. Check that the machine carriage has not “jumped” track. ▶ Remove all thread or debris in wheels. Check that the tracks are free of lint and threads.
Motor Fails to Run	Corrective Measure
<ul style="list-style-type: none"> ▶ On/Off switch turned off ▶ Machine not receiving power 	<ul style="list-style-type: none"> ▶ Turn the machine on by using the switch on the back power pod. ▶ Check that the power connector is securely plugged into the back of the machine and the three-prong end is plugged into the power source.
Uneven Quilt Design	Corrective Measure
<ul style="list-style-type: none"> ▶ Take-up rollers may be bowed or bent ▶ Leaders are stretched/worn 	<ul style="list-style-type: none"> ▶ Make certain the fabric is not rolled too tight, causing the poles to bow. Check that poles are inserted completely together with the push pin engaged so bowing won’t occur. ▶ If fabric is beginning to stretch or fray, contact Handi Quilter for replacement leaders.
Thread Backlash	Corrective Measure
<ul style="list-style-type: none"> ▶ Bobbin thread tangles within the bobbin case, tangles and winds onto the hook spindle, or occasionally forms loops on the bottom of the quilt. 	<ul style="list-style-type: none"> ▶ The bobbin should sit in the bobbin case such that one side is very minimally above the edge of the bobbin case and if you lightly press down on the bobbin, it descends slightly into the case. To adjust the backlash spring, place the bobbin in the case and hold it with the bobbin facing up. Then use a tiny screw driver to adjust the screw on the outside front shiny surface of the bobbin case (not the screw inside the bobbin case. Turn the screw counterclockwise to raise the backlash spring (and raise the bobbin) or turn it clockwise to lower the backlash spring (and lower the bobbin). After making an adjustment, reinsert the bobbin into the machine, bring up the bobbin thread, and test stitching. Make additional adjustments if necessary.

Troubleshooting

Needle Thread Breaks	Corrective Measure
<ul style="list-style-type: none"> ▶ Thread cones/spools are poor quality or may have severe twisting or thread rot ▶ Top and bobbin tensions not balanced ▶ The machine head has been threaded incorrectly or thread spools are not positioned correctly ▶ Particles in tension discs ▶ Bobbin rotation is not smooth ▶ Needle is burred, bent or dull, or installed incorrectly ▶ Needle not suited for thread ▶ Hesitating too long at one point in pattern ▶ Improper needle/hook relationship ▶ Damage or "Burr" at needle hole of throat plate or other thread handling part ▶ Wrong type of needle ▶ Other possible problems 	<ul style="list-style-type: none"> ▶ Look for severe twisting of threads when approximately 12 to 15 inches has been pulled off, with the ends pinched together. Cotton threads are particularly susceptible to dry rot which makes thread brittle. Do not use poor quality thread, or thread that is rotted or brittle. ▶ Check thread tension in top and bobbin for proper balance. ▶ Check that the machine is threaded correctly. ▶ Inspect for accidental double wrapping of thread on thread guides. ▶ Inspect the thread mast, making sure the eyelets of the mast are directly over the spools. ▶ Inspect the vertical positioning of the thread cones. Tipped cones can dramatically affect thread tension and can cause breakage. ▶ Inspect for particles and remove any fuzz or debris. ▶ Change the bobbin. The slightest hesitation of the bobbin rotation can be the cause of dramatic tension change and thread breakage. ▶ Change the needle at least once per quilt. Make sure the needle is installed to the top of the stop hole in the needle bar. ▶ Replace the needle to one better suited for the thread. Use the proper size needle. ▶ Move more quickly so stitches don't overlap or build up. When starting the machine, begin moving immediately. Sewing in one place too long will cause the thread to break. ▶ Timing of the machine is improper. Consult a repair technician. ▶ If thread is shredding at the throat plate, check for burrs or jagged edges. Gently rub with metal cloth to remove the sharp edge. Consult a repair technician to polish any hard to reach or delicate areas, or if the burr is inside the throat. ▶ Use needles recommended by Sewing Machines Plus. Using the wrong needle causes many problems. For example, a system 1738 or 287WH needle with a shank diameter of 1.64mm will fit loosely into the needle bar clamp. This condition allows the needles to fit into the clamp at an angle which may cause problems including skipped stitches and the needle positioned too far away from the hook point. ▶ Needle too close to hook, causing friction and possible collision of hook point and needle (broken thread). ▶ Needle plate damage ▶ Hook damage ▶ Broken needles or damaged needle bar clamp
No Visible Display	Corrective Measure
<ul style="list-style-type: none"> ▶ Cable unplugged 	<ul style="list-style-type: none"> ▶ Check the communication cable that connects the handlebar to the casing of the machine and make sure that the connections are secure.

*** If the troubleshooting above does not eliminate the problem, please consult Sewing Machines Plus.**