



Handi Quilter, Inc
501 N 400 W
North Salt Lake, UT 84054

1-877-MY-QUILT (697-8458) • www.HandiQuilter.com

HQ Avante® is part of the family of innovative quilting products from Handi Quilter®



HQ Avante®

USER MANUAL

QM30239 • VERSION 3.1



PRINTED 03 /20 /2015

© 2015 Handi Quilter, Inc. All rights reserved. Printed in the U.S.A.



Congratulations on your purchase of the HQ Avanté from Handi Quilter!

You haven't just purchased a quilting machine, you've joined the Handi Quilter family and we welcome you.

Handi Quilter is committed to innovation, reliability, customer service and education. Our machines are "Designed by a Quilter, for Quilters®" and we are committed to your quilting success.

With that in mind, we invite you to bookmark our website: www.HandiQuilter.com and invite you to visit to learn more about the art of quilting. We've posted tips, tricks and tutorials on subjects as diverse as "Oiling Your Machine" to "Loading a Quilt" to "Making Perfect Feathers". We've got videos to watch, pdf files to print out for reference and forums for asking questions.

Remember, if you ever have questions, your local Rep can help you. If the Rep is not available, contact Handi Quilter directly at techsupport@HandiQuilter.com or by calling us at 1-877-697-8458, Monday- Friday, 8-5 MST.

Handi Quilter®, HQ Avanté®, HQ Studio Frame® and Pro-Stitcher® are either trademarks or registered trademarks of Handi Quilter, Inc. Digital tensioner U.S. Patent No. 8,997,669. 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 (135x5) size 18 (pack of 10)
4. Bobbin Case
5. Thread Mast
6. Pin Oiler
7. Lint Brush
8. Screwdriver
9. Power Cord
10. 2.5 mm L Allen tool
11. 3 mm L Allen tool
12. 5 mm L Allen tool
13. Laser Stylus and Clamp
14. Laser Stylus Post
15. Open-toe Handi Foot
16. Extra encoder O-ring
17. HQ Quilting Machines "Getting Started" DVD
18. User Manual
19. HQ Avanté Quilting Machine

Optional Accessories

1. Micro Handles
2. Ruler Base
3. Horizontal Spool Pin
4. Groovy Board Stylus and Adaptor
5. HQ Pro-Stitcher

Table of Contents

	Page
Safety	4
Components (Front Side View)	7
Components (Back Side, Rear and Front Views)	8
Installation (Frames)	9
Installation (Handlebars)	9
Installation (Power Cord)	10
Inserting Needle	11
Changing the Handi Feet	12
Laser Stylus	13
Installation (Thread Mast)	14
Threading the Machine	15
Horizontal Spool Pin	17
Bobbin and Thread Tension Adjustments	19
Easy-Set Tension™ Adjustment	19
Maintenance (Oiling and Lubricating)	20
Touch Screen Displays	18
System Information	27
Diagnostics Tests	28
HQ Stitch Regulator Operation	31
Getting Started Quilting	32
Troubleshooting	33
Warranty Information	37
Warranty Registration Card	39
Installation and Training Checklist	41

Note: A set of Handi Quilter Getting Started DVDs is included with your HQ Avanté machine. Review the DVDs and these instructions to better understand how to set up and use the HQ Avanté.

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 HQ Avanté® 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 using and before cleaning.

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

- The HQ Avanté® 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 HQ Avanté® from the electrical outlet when performing any maintenance, changing the needle, removing thread locks, or when left unattended.
- Do not unplug by pulling on 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 HQ Avanté® should only be used indoors away from moisture.
- The HQ Avanté® should not be stored or used in extreme temperatures.
- Use the HQ Avanté® 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 HQ Avanté® if the cord is damaged or not working correctly. If a mechanical or electrical problem is encountered, return the HQ Avanté® to the nearest authorized service center or the manufacturer for examination, repair, electrical, or mechanical adjustment.
- It is not recommended that the HQ Avanté® quilting machine be used with any machine quilting frame other than those recommended by Handi Quilter.
- 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 Handi Quilter for this machine. Other types of needles may be 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 made by children without supervision.

Save these instructions.

This machine is intended for household use.

Disclaimer

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

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

General Specifications

The HQ Avanté 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 HQ Avanté quilting machine is a high quality machine that incorporates very robust design features and is very easy to service.

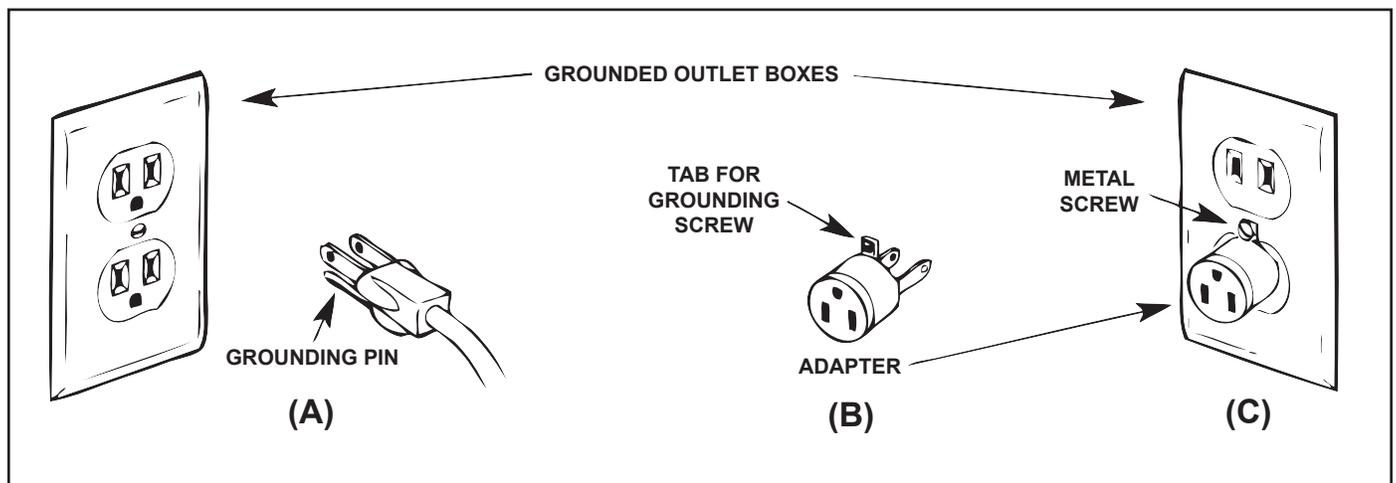
Sewing Opening Dimensions:	(245 mm X 610 mm) 8.25" X 18"
Sewing Speed:	Manual Mode: Min 90spm, Max 2,200spm Regulated Mode: Min 0spm, Max full speed
Stitches-Per-Inch:	4spi – 22spi
Needle System:	134 (135 X 7)
Needle Sizes, (recommended):	12/80 - 20/125
Hook System:	Rotary, Horizontal axis, M-class bobbin
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

Disclaimer

Handi Quilter and its Representatives are in no way legally responsible or liable for damage to the HQ Avanté when used improperly or not in accordance with the guidelines stated in this manual or when used on Machine Quilting Frames not recommended by Handi Quilter.

Handi Quilter representative or Handi Quilter 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 www.HandiQuilter.com.

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

HQ Avanté Components

Front Side View

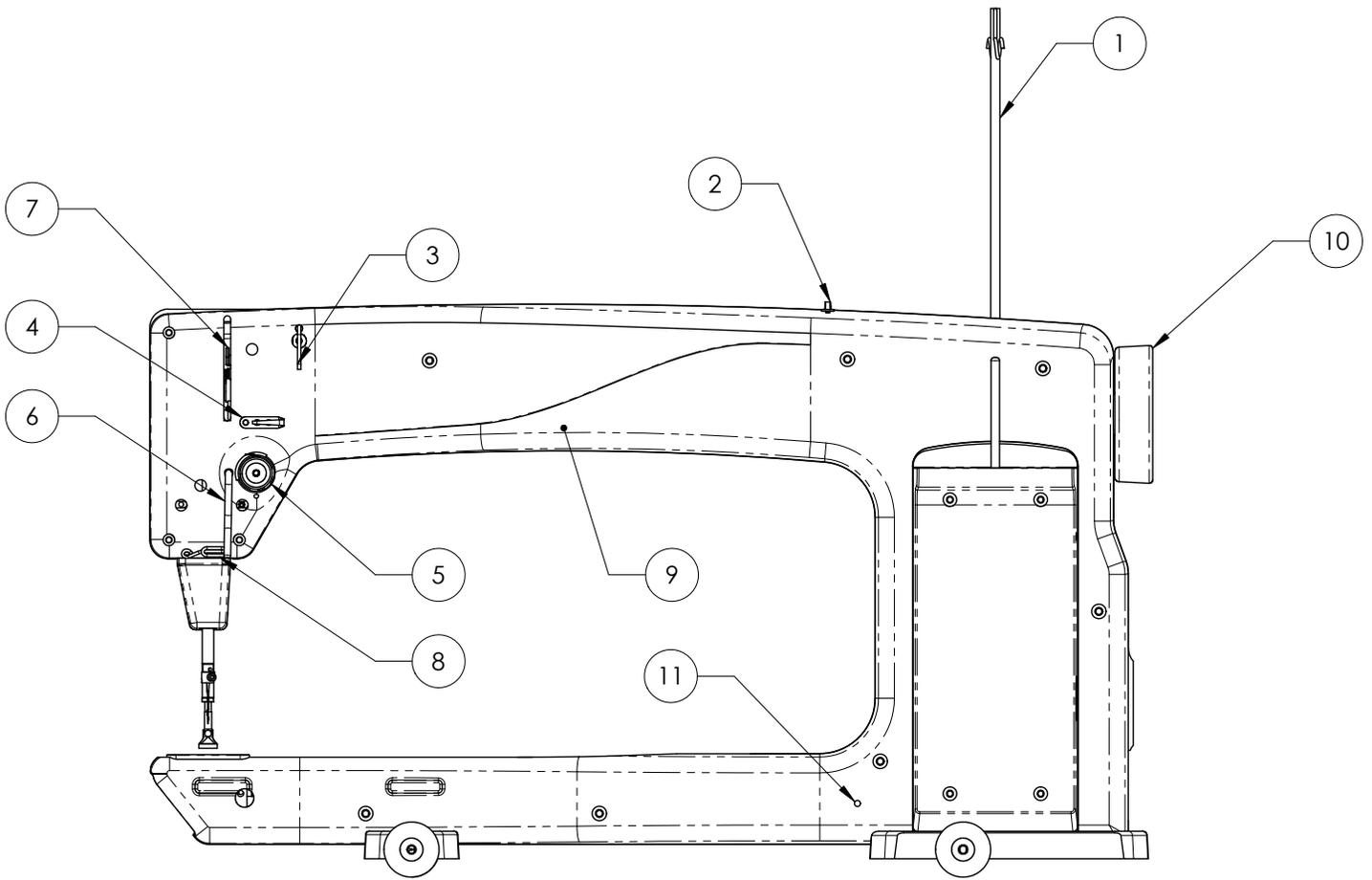


Figure 1

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

Back Side View

- 12. Ruler Foot
- 13. Needle
- 14. Needle Bar Thread Guide
- 15. Needle Bar
- 16. Presser Bar
- 17. Handi Feet Mount
- 18. Needle Plate
- 19. LED Light Ring
- 20. Front Handlebar Connector
- 21. Ruler Base Position Guides
- 22. Front Wheel Base
- 23. Wheels (4)
- 24. Back Casing/Frame
- 25. Rear Wheel Base
- 26. Front Threaded Handle Holes
- 27. Top Laser Stylus Post Hole

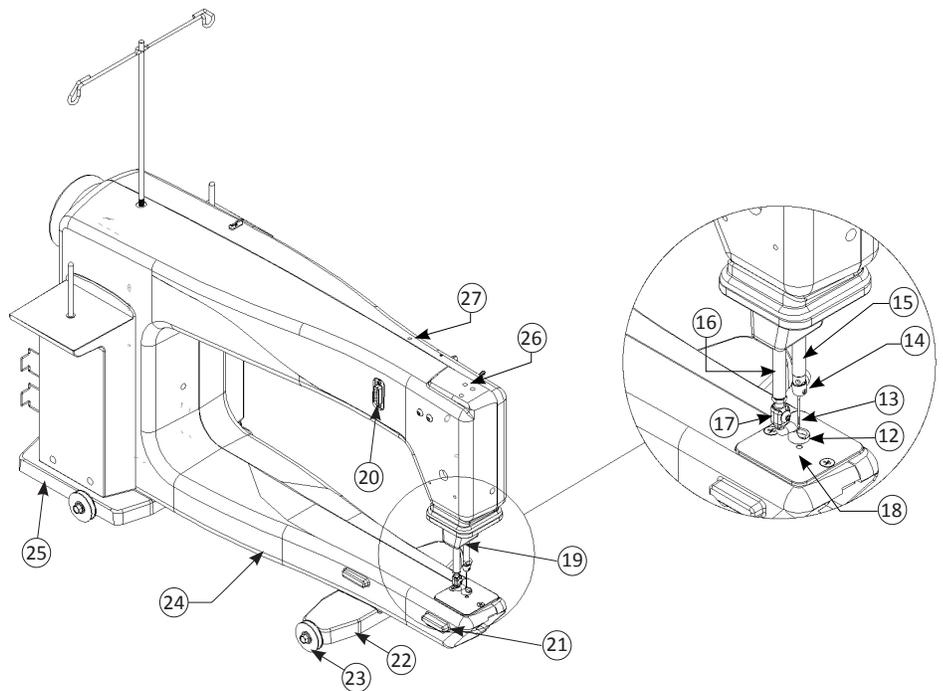


Figure 2

Rear and Front Views

- 28. Spool Pin 1
- 29. Electronic Control Pod (C-Pod)
- 30. Laser Stylus Power Connector
- 31. Serial Port for Stitch Regulator
- 32. Rear Handle Bar Serial Port
- 33. Rear Threaded Handle Holes
- 34. Accessory Power Outlet
- 35. Power Cord Connector
- 36. On/Off Switch
- 37. Power Pod (P-Pod)
- 38. Spool Pin 2
- 39. Bobbin Assembly

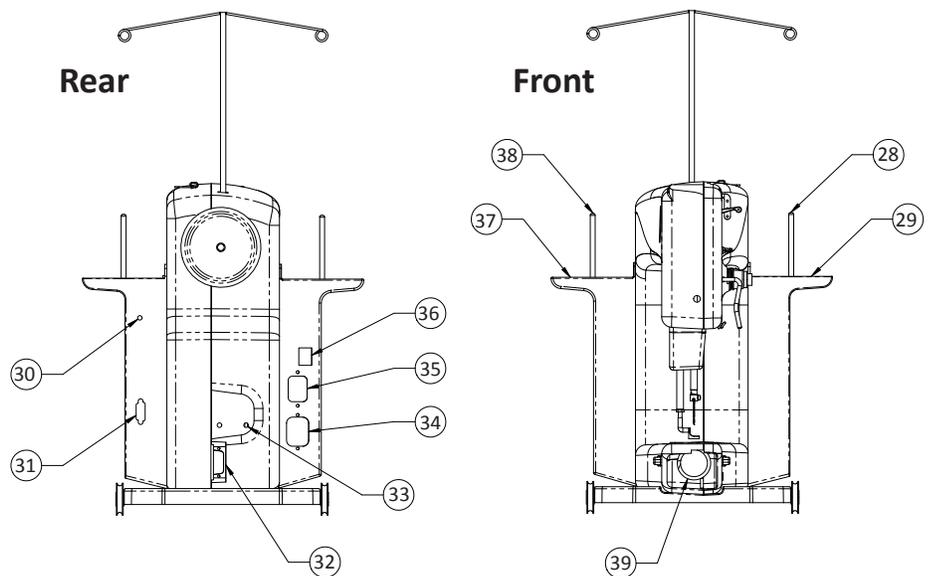


Figure 3

Installation (Studio Frame)

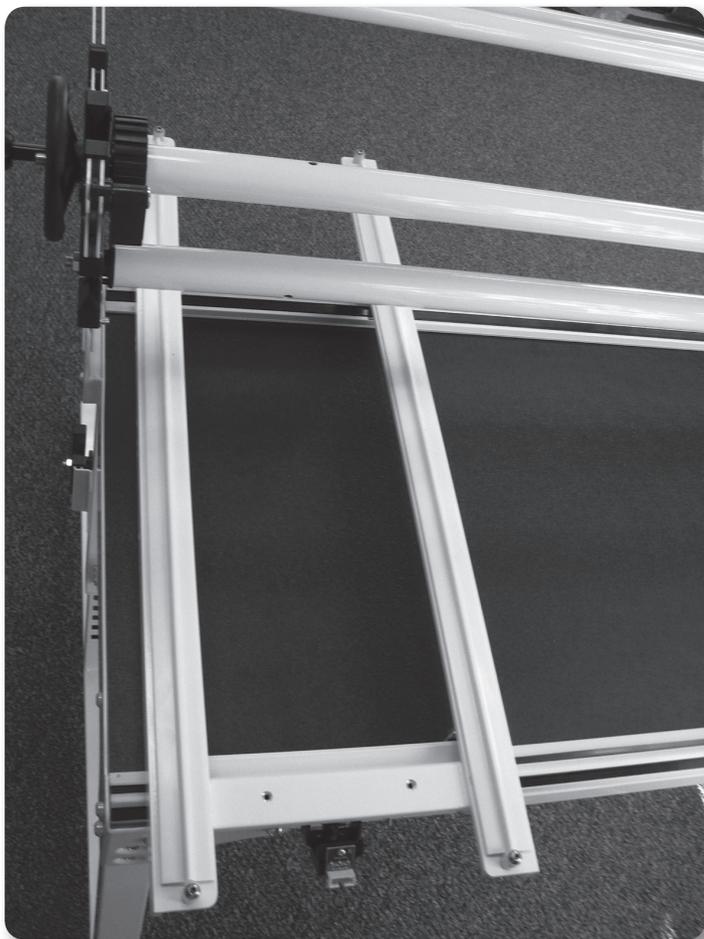


Figure 4

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 (see Figure 4).
2. Place the machine on the carriage.
3. Plug the Ribbon cable 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.
4. The remaining length of cable comes back under the Power Pod from the Rear Encoder Assembly, behind the machine, and into the 9 pin serial port of the machine.
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.

Installing Front Handlebars

Caution: Unplug the HQ Avanté from the electrical outlet. All power to the machine must be turned off when installing the front handles. Failure to do so can result in damage to the machine.

Locate the three long bolts and the 5mm Hex wrench. To install the handlebar, line up the holes on top of the handles with the pre-drilled holes on top of the machine. Slide a single bolt into one of the holes until it stops. Hand-tighten the bolt enough to secure the handles to the top of the machine. Insert and hand-tighten the remaining two handlebar bolts.

Use the included 5 mm Hex wrench to securely fasten the handles to the front of the machine.

Once the bolts are in place, plug the 9-pin connector into the serial port located on the left-hand side of the machine (see Figure 2, #18, page 6). Ensure the pins are lined up so they are not damaged when the plug is pushed in. Push the plug securely in place.

Installing Rear Handlebars

Check that the HQ Avantié is unplugged from the electrical outlet. All power to the machine must be turned off when installing the back handlebar. Failure to do so can result in damage to the machine.

The rear handle bar comes mounted with three screws to the “L” bracket. Line up the two holes in the “L” bracket with those on the rear of the machine. Slide the short bolts into holes until they stop. Hand tighten, and then use the 5mm wrench to securely fasten the handles to the back of the machine.

Once the two bolts are in place, plug the 9-pin connector into the serial port underneath the rear handles. Ensure the pins are lined up so they are not damaged when the plug is pushed in. Push the plug securely in place.

Installing the Power Cord

Insert the cord into top power connector on the rear of the machine. Plug the three-prong end into a power source (see Figure 5).

The lower power connector is for powering other attachments developed by Handi Quilter. (Not yet available)

Turning on the HQ Avantié

There are two power switches for your machine. The main power switch is at the rear of the machine and a red power switch is under the right handlebar at the front of the machine for your added convenience (see Figure 6).

The machine is turned on when both switches are turned on. The machine is turned off when both switches are off. However, you may turn off the machine functions by turning off only the front switch if you will be returning to quilt within a day.

Turn on the back switch first by toggling the switch from the 0 position to the 1 position. Then turn on the front switch by toggling it as well. The front switch will not turn on the machine unless the back switch is already on.

Note: After the handles have been completely installed and plugged in, test them by turning the HQ Avantié on/off switch to “on”. You will not be able to turn on the machine until the front handlebars are installed. If nothing is displayed, check that the handlebar cable on the side of the machine is plugged in securely, that your machine is turned on, and that the power cord is plugged into the machine as well as a power source.



Figure 5

IMPORTANT: If you will not be using the machine for more than a day, we recommend you turn off both switches and unplug the power cord from the power source.

IMPORTANT: Refer to the safety instructions.



Figure 6

Inserting (or changing) the Needle

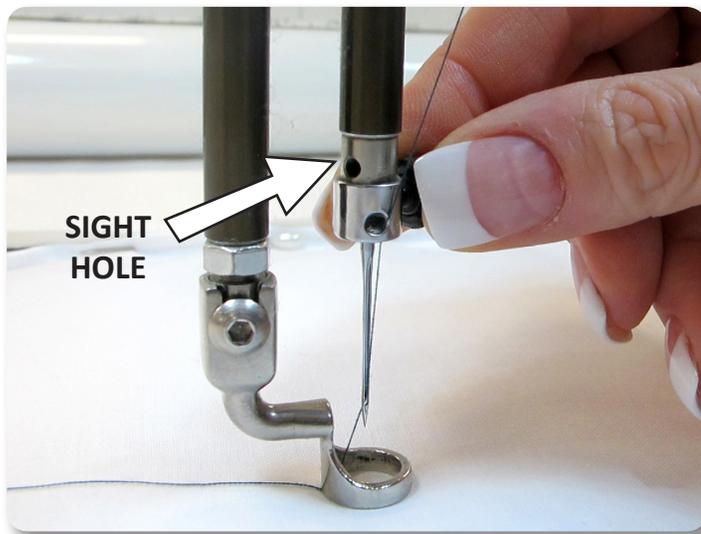


Figure 7

1. Check that all power is turned off.
2. Move the needle bar to the highest position by turning the hand wheel or by pressing the needle up/down control on the handles (prior to turning the power off).
3. Loosen the needle-bar clamp thumb screw (Figure 7).
4. With the scarf (small ground out section/dip on the back side of the needle just above the needle eye) facing the rear hand wheel side of the machine, and the long groove down the front of the needle facing the bobbin case side (see Figure 7), push the needle all the way up into the needle bar – until it can go no farther. Look into the sight hole to verify that the butt of the needle reaches the top of the sight hole.
5. Carefully tighten the needle bar clamp screw. Over tightening the needle clamp screw will result in damaged threads stripping the hole. Stripped holes are not covered under warranty. Another side effect of damaged threads from over-tightening that the needle may be very tight when inserted up into the needle bar. To avoid over-tightening the screw, finger tighten only.

NOTE: Changing the needle is recommended for each new quilt loaded on the machine or any time the needle becomes bent, dull or burred.

IMPORTANT: Check the needle to confirm that it is fully inserted. The needle bar has a stop/sight hole above the needle bar clamp screw – make sure the needle is touching the top of the stop/sight hole (Figure 7). 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 Handi 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 Handi Feet

Your machine came with two Handi 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). Other Handi Feet are available, such as the Handi Feet 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.

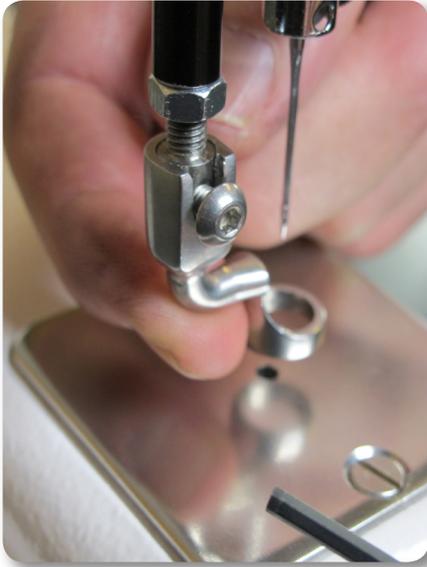


Figure 8

2. Slide the desired foot onto the mount (figure 8). Note that the opening on the side of the foot is lined up with the screw hole. Push the Handi Foot up as far as it will go.

3. 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 (Figure 9).

Figure 9

Laser Stylus Safety and Use Guidelines



Figure 10

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 the same pattern onto a quilt that is being traced with the laser dot.

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 HQ Avanti[®]. Be sure the laser is attached to the HQ Avanti[®] 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 HQ¹⁸ Avanti[®] 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 focusable. The laser is focused by simply grasping the threaded housing surrounding the lens and turning clockwise or counter-clockwise (see Figure 10). The laser image 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 focal 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, and 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 Laser Stylus



Figure 11

For use at front of machine

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 (see Figure 2, #20, page 6). 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 front electronic control pod (see Figure 11).

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 (see Figure 1, #11, page 5), near the rear wheel base. Turn until securely in place. Lock in place with 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.

Installing the Thread Mast

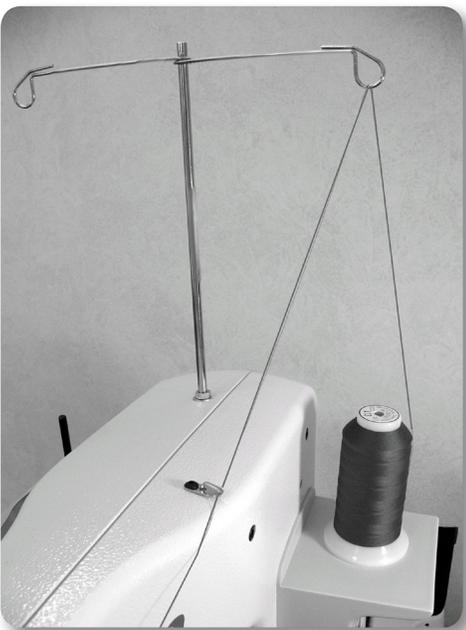


Figure 12

Locate the threaded hole on top of the machine near the rear by the hand wheel. The thread mast comes with the washer and nut on it. Remove the nut and washer, replace the nut onto the mast 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 mast clockwise until it is securely in place. Use the nut to secure the mast to the machine.

Note: The eyelets of the thread mast MUST be centered over the spool pins. This ensures that the cone of thread will not pull, turn or tilt, causing thread tension problems (see Figure 12).

Threading the Machine

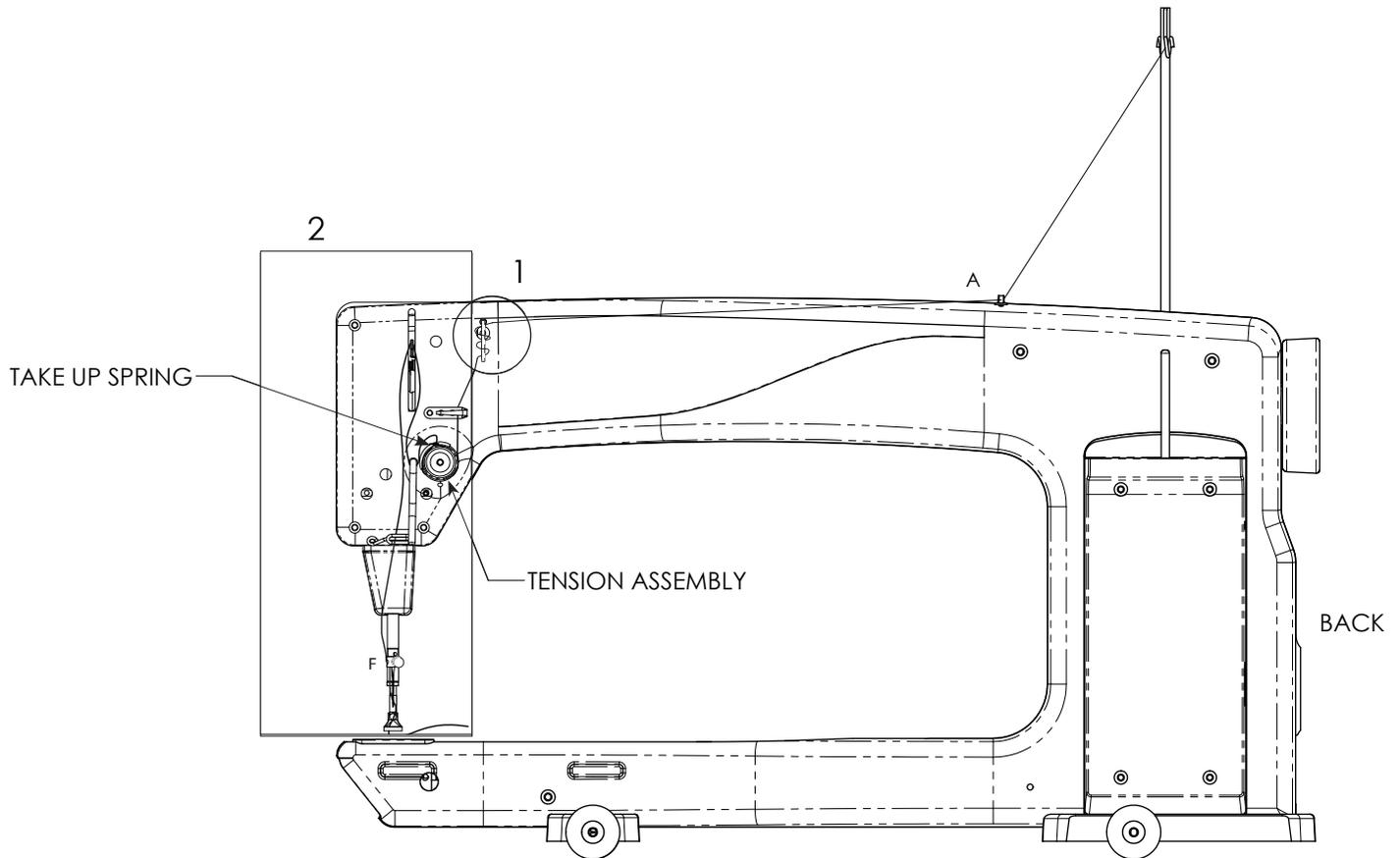


Figure 13

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**. (Figure 13)
2. Continue to the three-hole thread guide **B**. Wrap all three holes from back to front, hand wheel side to needle side (see Figure 14).

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**.

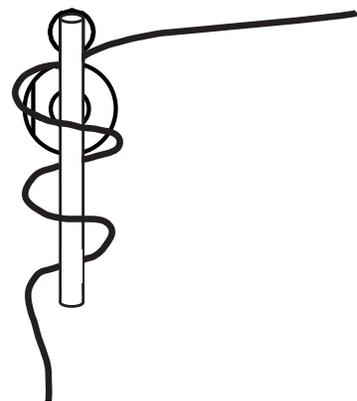
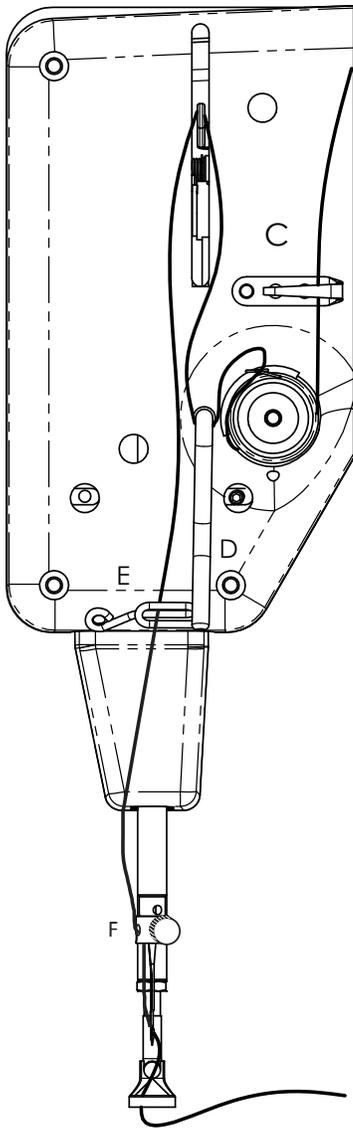


Figure 14

Note: See *Getting Started DVDs* (included with your machine) for videos showing threading and other tips. These videos are also available on www.HandiQuilter.com.



DETAIL 2

Figure 15

3. Thread continues through thread guide **C**, and then down to the **tension assembly** (see Figure 15).

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 it is not, then the thread will pull freely.
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 threads from front to back. Be careful that the thread does not twist around the needle.

Important notes: The HQAvanté 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 HQAvanté 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



Figure 16

Bobbin and Thread Tension Adjustments

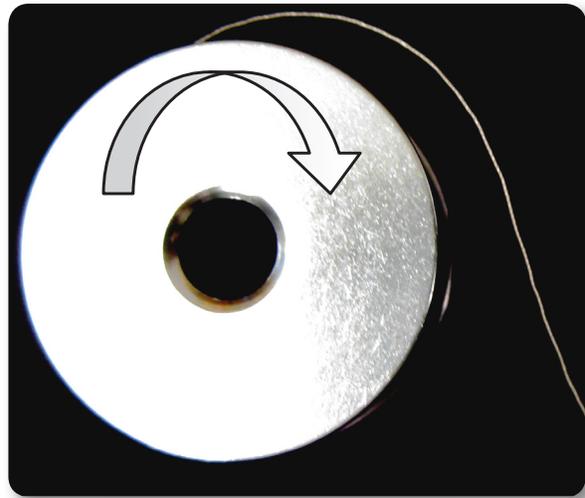


Figure 17

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 (see Figure 16).
3. When using threads on the Horizontal Spool Holder, 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 page 13.

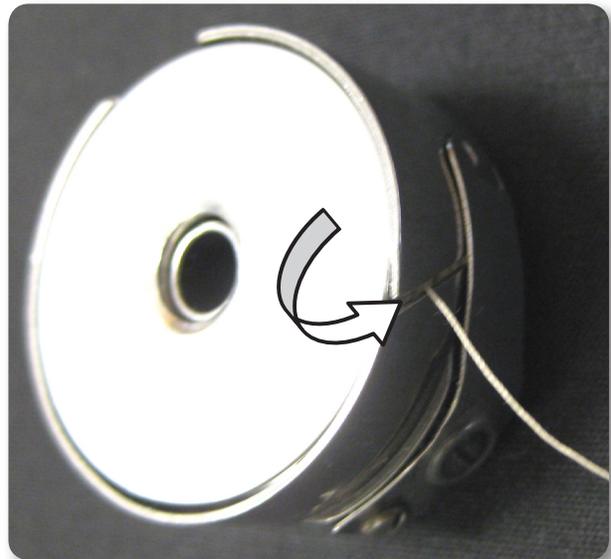


Figure 18

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 (Figure 17).
2. Slide the thread through the slot (Figure 18) and under the tension spring leaving 5 to 6 inches of thread hanging loose (Figure 19, next page).

Note: See the *Getting Started DVDs* (included with your machine) for videos showing adjusting bobbin tension and other tips. These videos are also available on www.HandiQuilter.com.



Figure 19



Figure 20

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 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 (see Figure 20).

Note: It is not suggested that the lever on the bobbin case be used for this installation. The latch lever should be used only for removal of the bobbin case.

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. Pull 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.

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 and if it lifts out of your hand, it is too tight. The small screw in the center of the tension spring is where the adjustment is made (see Figure 21). Turn clockwise to tighten and counter-clockwise to loosen the bobbin case tension. Check your bobbin tension every time a new bobbin is inserted.



Figure 21

Easy-Set 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 HQ Avanti Easy-Set Tension. 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.

As you adjust the tension, a tension value appears on the Main Screen (when the machine is turned on). make a note of this value to easily set the tension again in the future for the same type of thread.

Note: 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 HQ Avanti. Internal oiling is not necessary on the HQ Avanti 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

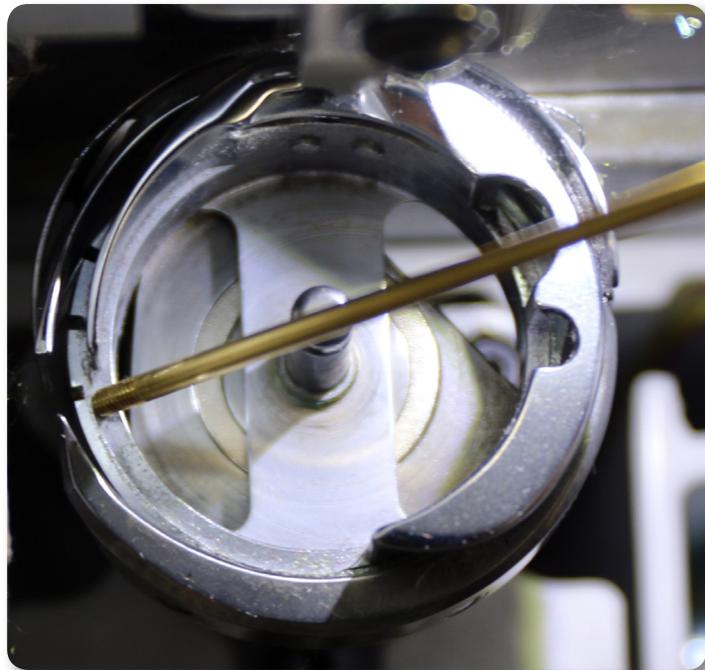


Figure 22

small drop of oil on the hook in the region where the bobbin basket assembly and the rotating hook meet (see Figure 22). 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, or every other bobbin change if used frequently. After oiling, always sew a scrap piece as oil may cling to thread. Over oiling can cause excess dripping from the bobbin assembly. Lack of lubricant may be noticed by a change in the sound of the machine and will affect stitch quality.

Cleaning the Touchscreen

Never use any chemicals to clean your display as this may adversely affect the touch screen response. Use a soft rag dampened with isopropyl alcohol and gently wipe the display to remove any marks.

Using the Touch Screen Displays on the Handlebars

Machine and Handlebar Menus



Figure 23



Figure 24



Figure 25

The HQ Avanté has touch-screen displays on the front and rear handlebars. Settings may be changed at either of these locations.

Main Screen

Manual Mode Screen

Button Functions:

Pressing the “Regulated” button while in the Manual Mode Screen will toggle to the Regulated Mode Screen. The current stitching mode is displayed at the top left corner of the screen. Different options are available depending upon which mode the system is in. (Figure 23)

Needle Stop

The Needle Stop setting enables you to specify whether you want the needle to end in the up or down position when you stop quilting (Figure 24). If you select Down, when you press the stop button on the right handlebar, the needle ends in the down position. If you select Up, the needle ends in the up position when you press the stop button on the right handlebar. Switch between the up and down position by pressing the Needle Stop button.

Easy-Set Tension

The tension box (Figure 25) on the Main Screen shows the current tension setting as a numeric value. As you turn the tension dial clockwise to tighten the top tension, the number increases in increments of five. As you turn the tension dial counterclockwise to loosen the top tension, the number decreases in increments of five. The faster you turn the dial, the faster the numbers increase or decrease.

After setting the bobbin tension, test the top tension by stitching on a fabric scrap on the edge of the quilt batting and backing. Increase or decrease as needed until you have achieved balanced tension. Make a note of the type of thread (weight, brand, color) you’re using and the tension value. You will be able to quickly and easily set the tension when you use this same thread again in the future.



Figure 26

Bobbin Thread Indicator

If you use the Low-Bobbin Estimator feature, The Bobbin Thread Indicator box (Figure 26) 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, REC appears on the screen to remind you that it is estimating the bobbin capacity.

Speed

Pressing the Limit “+” will increase the manual mode motor speed and pressing the Limit “-” 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. (Figure 27)

Manual Presets

Save up to three manual-mode preset speeds to quickly switch between speed preferences. For example, you may prefer a slower speed when using rulers and a faster speed when doing all-over meandering quilting. Use the “+” and “-” buttons to adjust the speed percentage and then press one of the record buttons next to the preset value to store that speed as a preset. When you want to use one of the preset speeds, simply press the speed. (Figure 27)

On/Off Indicator

The box in the center of the top bar turns green when you press the “Start” button on the handles to indicate the needle is in motion. When you press “Stop,” the box will turn red. (Figure 28)

Regulated Mode Screen Button Functions

Stitches Per Inch (SPI)

Pressing the “+” or “-” buttons near the top right portion of the screen will increase or decrease the stitches per inch (SPI) setting. The setting is reflected in the white indicator box at the top right portion of the screen. This value can be adjusted between 4 and 18 stitches per inch. (Figure 29)



Figure 27



Figure 28



Figure 29



Figure 30

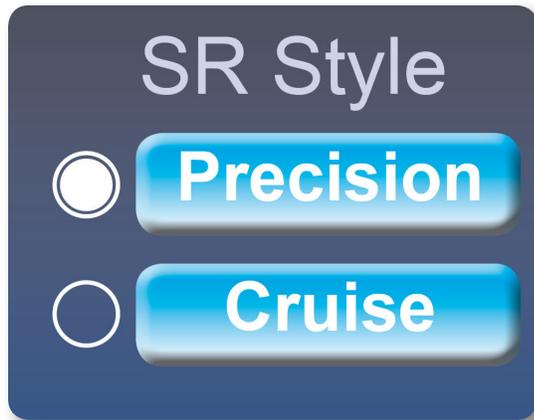


Figure 31

Basting Stitches

There are four basting stitch settings controlled by the stitches per inch function. After the SPI reaches its lowest stitch setting of 4 stitches per inch, pressing the “-” button will activate the basting settings:

- 0.5-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)

After selecting the basting stitch setting, begin quilting by pressing the Start button. As you move the machine across the quilt, it will perform a stitch (needle down and then needle up) every half inch, one inch, two inches, or four inches according to your choice. The basting stitch options are available in stitch regulation mode: Cruise and Precision.

(Figure 29)

Stitch Regulation Style (SR)

The “SR Style” box in the lower left-hand corner of the screen indicates whether the machine is in “Precision” regulation mode or in “Cruise” regulation mode. (Figure 30)

Precision

If “Precision” mode is selected, the HQ Avanti will not start stitching until you begin pushing the machine.

(Figure 31)



Figure 32

Cruise

If “Cruise” mode is selected, when you press “Start” on the handles the machine will immediately begin stitching at the percent speed indicated below the “Cruise” button. The “Cruise” speed is the minimum speed the machine will stitch, regardless of how slow you are pushing the machine. This means that when you slow down to a stop, the needle will continue stitching at the set cruise speed until you begin moving the machine faster than what the cruise speed is set to or you press the “Stop” button on the handles. The “Cruise” speed can be adjusted using the “+” and “-” buttons that appear below the “Cruise” button when “Cruise” mode is selected. “Cruise” speed can be adjusted between 3% and 50%. (Figure 32)



Figure 33

The start indicator box, which is the box at the top center of the screen, 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 “Cruise” speed.

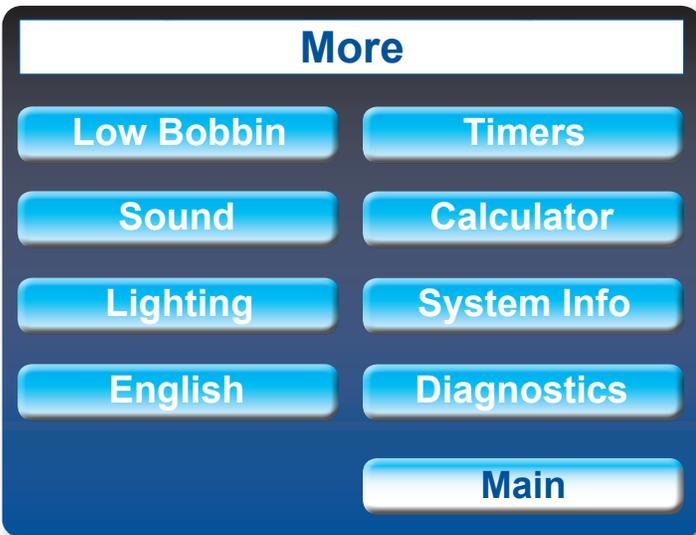


Figure 34

On/Off Indicator

If the machine does not sense that it has been moved in any direction after it has been started, it will automatically stop regulation mode and the start indicator box will turn red. When in “Precision” mode, this happens when no movement of the machine has been detected for two minutes. A system message will appear on the screen to warn the user the machine has stopped. This box is cleared by pressing the “OK” button. In “Cruise” mode, the machine will stop stitching after about three seconds if no movement has occurred.

More Menu

The More screen provides access to other functions available on the HQ Avanti (Figure 34).



Figure 35



Figure 36



Figure 37

Low Bobbin

The HQ Avanté includes a low bobbin capability so you can estimate how soon your bobbin thread will run out. This Low Bobbin Capacity 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 (Figure 35 and 36).

To estimate how much thread is on a bobbin, place a full bobbin in the machine and under the heading Bobbin Thread Capacity, press the Record button (Figure 36) Quilt as usual.

When the bobbin runs out, press the square Stop Recording button and note the number that is indicated under the Bobbin Thread Capacity (Figure 36), perhaps 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 Bobbin Thread Capacity 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 the capacity value, an alarm will sound warning you that your bobbin is nearly out of thread (Figure 37).

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.

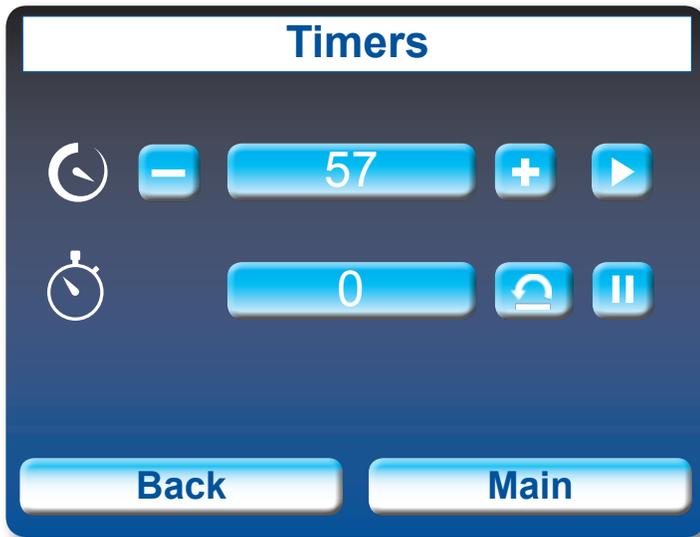


Figure 38

Timers

There are two useful timers. The first (top) timer 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 “play” button to activate the timer. When the time duration has elapsed, an alarm will sound and a message appears on the display (Figure 38).

The second (bottom) timer enables you to track how much time you spend 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.

Sound Screen

The “Volume” portion of this screen has two buttons and a sliding control. Pressing on the “Mute” button turns the alarm volume off. Pressing the “Max” button turns the volume to its loudest level. Pressing the sliding control in any position sets the volume to the level indicated in that control. Pressing and moving back and forth across the sliding control will change the volume up as it is moved left to right and down as it is moved from right to left. The Over-Speed Alarm box allows the user to turn the alarm on and off. (Figure 39)

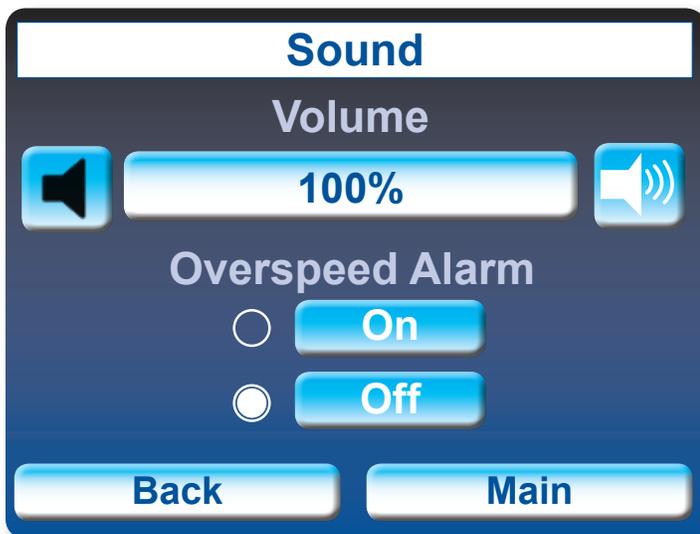


Figure 39

Press the “Main” button to return to the “Regulated” or “Manual” menu screen or the “Back” button to return to the “More” menu screen.

Calculator

A basic calculator is provided. This function has been found to be especially convenient for customers with machines that have the HQ Pro-Stitcher®. (Figure 40)

Press the “Main” button to return to the “Regulated” or “Manual” menu screen or the “Back” button to return to the “More” menu screen.

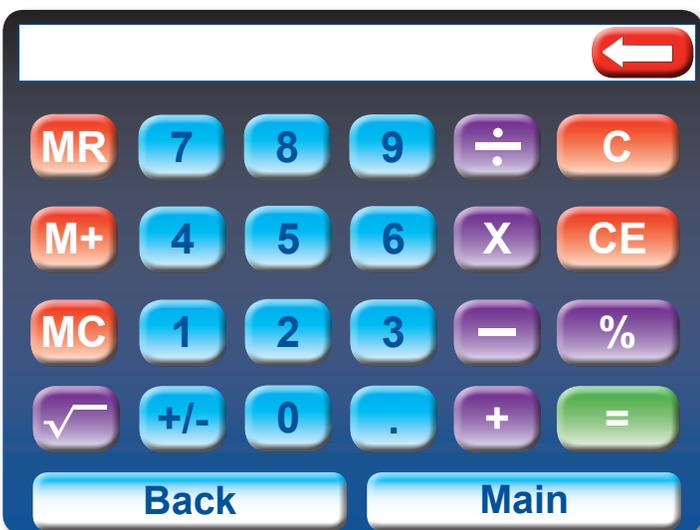


Figure 40

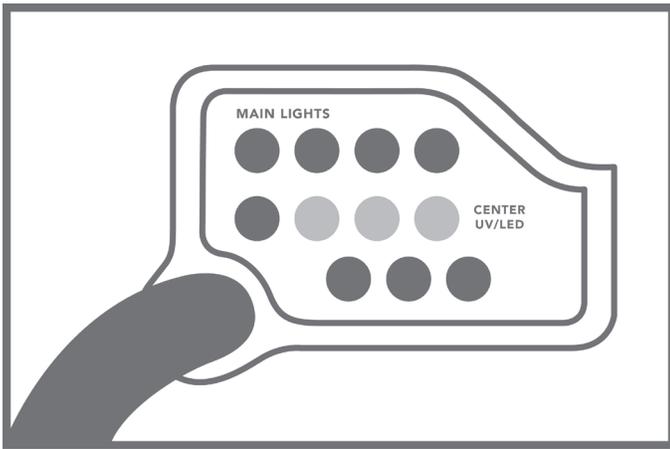


Figure 41

Lights

The HQ Avanté comes equipped with six white (LED) lights, two UV lights (in the center row) on each side of the front handlebars (Figure 41), and an LED light ring around the needle bar. There are three open lighting positions on each side of the handlebars that provide room for two additional white lights and one UV light on each side in the center row.

Turn lights on or off by touching the Light Power button. Use the other buttons to indicate which light groups are on when the light power is on. (Figure 42)

Touch Main Lights to enable the six white lights on each side of the handlebars.

Touch the Center/UV button to enable the center row of lights on each side of the handlebars. If UV lights are installed in the center row, turn off the main lights when using them by pressing Main Lights.

Touch the Light Ring button to enable the LED light ring.

Touch All Lights to enable all lights. You will be prompted that you shouldn't turn on all lights if UV lights are installed. Note that you can replace the UV lights with white lights if you want more white lights for quilting.

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 Handi Quilter 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.

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



Figure 42

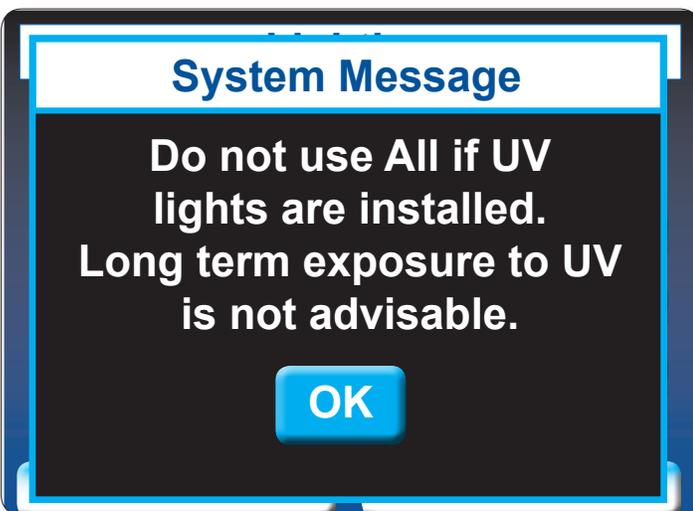


Figure 43

NOTE: When you turn on the machine after it has been off, only the main lights will come on. Return to the Lighting screen to turn on other light groups.

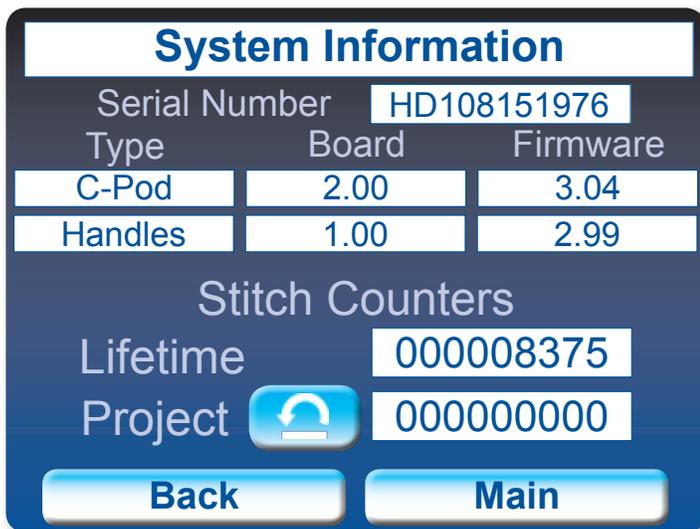


Figure 44

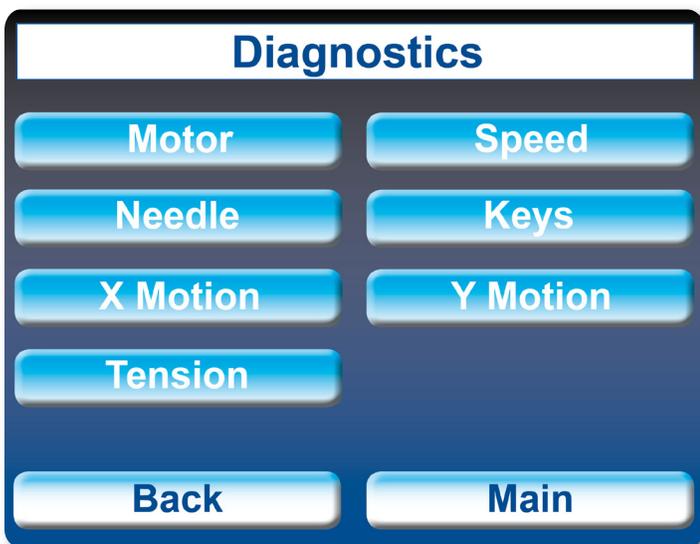


Figure 45

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

System Information

The serial number of the machine is displayed at the top of the System Information screen. This number matches the one found on the label at the back of the machine under the rear handlebar.

Information contained in the white boxes below the serial number identifies the electronics board revision numbers as well as the firmware revision numbers of the HQ Avanté and its handlebars. The Lifetime and Trip (or project) stitch counters count the number of stitches the machine is performed. The Lifetime count is the total number of stitches made since the machine was built. The Trip Counter can be reset to keep track of the number of stitches made during a given project. To reset this counter, press the blue “Reset” button just to the left of the “Trip” box. The Lifetime counter cannot be reset and should be used as an indicator to determine when general machine maintenance should be performed by an authorized Handi Quilter Representative. (Figure 44)

Press the “Main” button to return to the “Regulated” or “Manual” menu screen or the “Back” button to return to the “More” menu screen.

Set Language

The HQ Avanté screens can appear in English, French, German, or Spanish. On the More Screen, press the lower-left button to cycle between English, Français, Deutsch, and Español. After selecting your preferred language, press Main to return to the Main Screen.

Diagnostics Screen

Six different diagnostics 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. (Figure 45)

Press the “Main” button to return to the “Regulated” or “Manual” menu screen or the “Back” button to return to the “More” menu screen.



Figure 46



Figure 47



Figure 48

Diagnostics Tests

Motor Sensor Test

The “Motor” Sensor test can help you determine whether they may be a problem with the HQ¹⁸ Avanté motor. Slowly rotating the handwheel should result in a pulsing audible “beep.” If you get a constant solid “beep” or no “beep” at all, this indicates a failed test and the machine should be inspected by a qualified Handi Quilter repair technician.

(Figure 46)

Press the “Main” button to return to the “Regulated” or “Manual” menu screen or the “Back” button to return to the “More” menu screen.

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 half of a stitch cycle followed by no “beep” for the other half. (Figure 47)

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 Handi Quilter repair technician.

Press the “Main” button to return to the “Regulated” or “Manual” menu screen or the “Back” button to return to the “More” menu screen.

X Motion Sensor Test

Use the X Motion Sensor test to verify functionality of the “X” stitch regulator encoder (the encoder mounted at the rear of the carriage). As you slowly move the carriage left and 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. The most likely cause of a problem is a stitch regulator 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 main control board. (Figure 48)



Figure 49

Press the “Main” button to return to the “Regulated” or “Manual” menu screen or the “Back” button to return to the “More” menu screen.

Motor Speed Sensor Test

The “Speed” Sensor test can help you determine whether or not there is a problem with the HQ Avanté 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. (Figure 49)

Press the “Main” button to return to the “Regulated” or “Manual” menu screen or the “Back” button to return to the “More” menu screen.

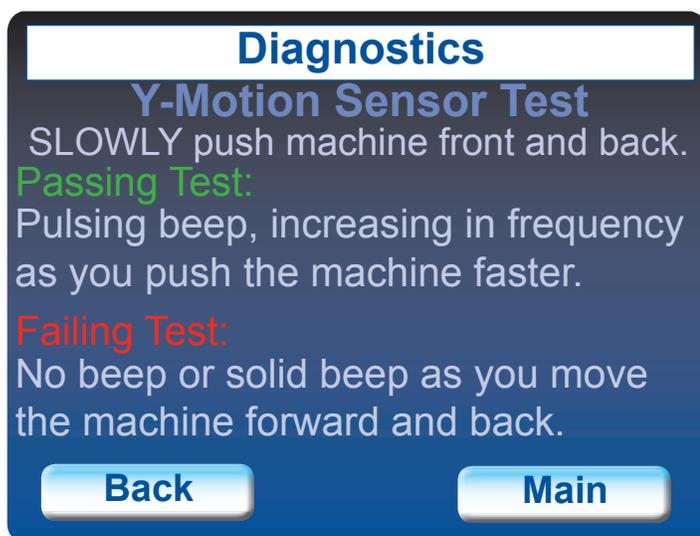


Figure 50

Y Motion Sensor Test

Use the Y Motion Sensor test to verify functionality of the “Y” stitch regulator encoder (the encoder mounted to the rear power pod side machine wheel). As you slowly move the carriage toward and away from you, 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 a stitch regulator wheel that is not making consistent contact with the track. Check the spring tension on the sensor assembly on the machine to assure that it will easily return to the fully extended (down) 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. (Figure 50)

Press the “Main” button to return to the “Regulated” or “Manual” menu screen or the “Back” button to return to the “More” menu screen.

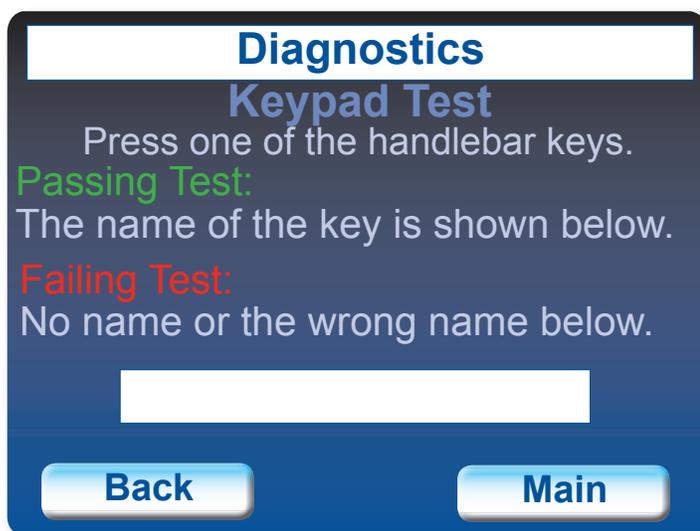


Figure 51

Keypad Test

The Keypad test allows the user to press any of the four keys on the front or back handles to verify that the HQ¹⁸ Avanté is reading the buttons as they are pressed. When a key is pressed the name of the key that is pressed will appear in the white box. When it is released, the name will disappear. Perform this test on the rear display for the rear keys, and the front display for the front keys. (Figure 51)

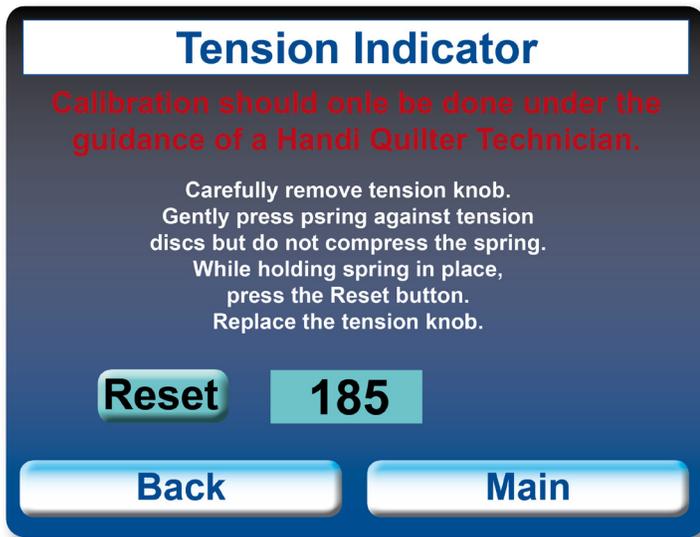


Figure 52

Press the “Main” button to return to the “Regulated” or “Manual” menu screen or the “Back” button to return to the “More” menu screen.

Calibrate Tension

The Tension button enables you to calibrate the tension device. You should only calibrate the tension device under the direction of Handi Quilter technical support.

While calibrating the tension, you will be asked to do the following:

1. Remove the tension knob.
2. Gently press the spring against the tension discs while not compressing the spring.
3. While holding the spring in place, press Reset.
4. When calibration is complete, replace the tension knob.

HQ STITCH REGULATOR OPERATION

Choose from Two Types of Stitch Regulation: Cruise or Precision

In regulation mode the status box at the top left of the screen should say “Regulated”. If it says “Manual”, simply press the “Regulated” button on the touch screen to switch from “Manual” mode to “Regulated” mode.

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 **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.

Cruise Regulation Mode

When in Cruise 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 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%). Handi Quilter recommends beginning with a setting of 3%.

When to Use 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 HQ Avanté 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 message box will appear. This indicates that the system has stopped and you will need to press the “Start” button again 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 commence 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 **OVERSPEED CONDITION**, during which, the machine cannot maintain stitch regulation until you slow your motions to an appropriate speed. The Overspeed 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 HQ Avanté 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 HQ Avanté, 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 unpick. 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 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 HQ¹⁸ Avanté, combined with the Avanté 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 HQ Avanté® 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 12-13). ▶ 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 12). ▶ 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 12). ▶ 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 12).
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. See pages 14-16. ▶ 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 Handi Quilter. Using the wrong needle with a smaller shank diameter 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 an authorized HQ¹⁸ Avanté representative.**

This page intentionally left blank.



501 N 400 W
North Salt Lake, UT 84054

Phone: 801-292-7988; 877-697-8458
Fax: 801-294-3011
E-mail: sales@handiquilter.com
www.HandiQuilter.com

Warranty issues should, whenever possible, be first submitted to the Representative who completed your service/training certificate. These representatives have been selected for their dedication to customer satisfaction and superior service. They provide follow-up advice, training, service, accessories and other services.

Representatives may offer their own warranties in addition to those offered by the manufacturer, but do not obligate the manufacturer.

HQ QUILTING MACHINE LIMITED WARRANTY

Handi Quilter, Inc. (hereinafter HQ) offers a limited warranty on the HQ QUILTING MACHINE (hereinafter "Machine") to be free of defects in workmanship and materials under normal use upon the terms and conditions hereinafter set forth:

- (a) **90 day Limited Warranty** - During the first 90 days from date of purchase, HQ will repair any manufacturing defect without charge for parts or labor. All subsequent warranties include parts costs only.
- (b) **10 year Limited Manufacturer's Warranty.** HQ warrants the sewing head is free of casting or machining imperfections causing product failure. This warranty does not extend to mechanical or electronic/electrical parts, which are covered under a separate warranty, or consequential damage to the head caused by mechanical or electronic/electrical part failures beyond their warranty period.
- (c) **5 year Mechanical Warranty** For any mechanical failure within this period, manufacturer will provide free replacement parts, customer pays for labor and shipping. See warranty exclusions.
- (d) **5 year electronic/electrical warranty.** The electric/electronic components are warranted to be free from manufacturing defects for five years from the date of purchase. If any defect is reported within this period, manufacturer will provide free replacement parts, customer pays for labor and shipping. The 5 year electronic/electrical warranty will be invalid if the machine is left plugged into a power source when not in use.

The limited warranty stated in sections (b), (c) and (d) above shall be limited solely to the replacement of parts which, in the opinion of HQ, are defective in workmanship or material and are returned to HQ, or an authorized repair facility, or such other point or place that may be designated by HQ. All other costs, including cost of freight and shipment for repair under this warranty, shall be the customer's costs.

This warranty shall be in force only for the original purchaser.

The machine registration card must be completed and received by HQ before warranty is valid.

Warranty Exclusions

HQ shall have no obligation for any claim under this warranty if the machine has been misused, abused, neglected, damaged in transit or has been altered from the standard specifications established by HQ, or if proper maintenance and lubrication have not been timely performed.

No warranties extend beyond the express warranty offered. HQ disclaims all other warranties, express or implied, regarding the Products, including any implied warranties of merchantability or fitness for a particular purpose. In the United States, some laws do not allow the exclusion of the implied warranties.

Specific exclusions of warranty limitations include, but are not limited to, the following:

- General, consequential, incidental or special damages including damage to fabric or material, the cost of rework or lost profits, the cost of installation or removal of any Products, and any inspection, testing, or redesign caused by any defect or by the repair or replacement of Products arising from a defect in any Product.
- Products which are received by HQ improperly packaged, altered, or physically damaged.
- Counterfeit or altered label(s) or stickers.
- Broken pins on connectors.
- Stripped screws or nuts.
- Connector(s) damaged, cracked, missing or broken.
- Missing, torn or punctured seal(s).

- Any use besides machine quilting applications using customary fabrics, threads and accessories.
- Operator error in the customary use of the Product.
- Internal adjustments, tampering or parts replacement done by anyone except authorized Representatives or customers specifically authorized by Handi Quilter Customer Support or warranty repair personnel on a case by case basis.

The warranty does not cover and the user assumes the risk of and there is hereby excluded any liability to HQ for failure, defects, loss, deterioration, personal injury or damage which are due to: (1) ordinary wear and tear or exposure, (2) abuse, misuse, negligence, or (3) use of parts not authorized by HQ.

In no event shall HQ be liable to the purchaser of the Machine or to third parties for special or consequential damages, including, but not limited to, death or personal injuries.

HQ does not assume, or authorize any person to assume on its behalf, any other obligation of liability other than that set forth herein.

Some states do not allow exclusion of limitation of incidental or consequential damages, so above limitation or exclusion may not apply. This warranty gives the purchaser specific legal rights and the purchaser may also have other rights, which may vary for State to State.

Exclusive Remedy

Remedy is limited to the repair or replacement of the defective Product. HQ may elect which remedy or combination of remedies to provide at its sole discretion and shall have a reasonable time, after determining that a defective Product exists, to repair or replace the defective product. Replacement Product may be from new or serviceable used parts. HQ's warranty applies to repaired or replaced Products for the balance of the applicable period of the original warranty or ninety days from the date of shipment of a repaired or replaced Product, whichever is longer.

HQ's entire liability for any defective Product shall in no event exceed the purchase price for the defective Product. This limitation applies even if Handi Quilter cannot or does not repair or replace any defective Product.

Warranty Claims

Service under the above warranties may be obtained by returning the quilting machine, with proof of purchase, to the authorized Representative from whom the machine was purchased, a local Representative, or to Handi Quilter Customer Support.

Any product to be returned to the factory, either by customers or Representatives, must be accompanied by a Return Material Authorization Number (RMA). RMAs may be obtained by email (sales@handiquilter.com) or by calling customer support toll free at 1-877-697-8458. If it is determined that the Product may be defective, an RMA number will be issued with instructions for Product return. An unauthorized return (a return without an RMA number) will be shipped back to customer at customer's expense. Authorized returns are to be shipped prepaid and insured in an approved shipping container. The original box and packaging materials should be kept for storing or shipping.

Shipping Costs

Shipping is the responsibility of the customer.

Product Service and Maintenance

Replace needles every 2 to 4 hours (1 to 2 per large quilt) and lubricate bobbin hook every 3 to 4 hours of use. Periodically check the thread tensioner. Use a small brush to clean out all lint, loose thread or obstructions from the bobbin hook.

Servicing is recommended annually from a qualified Representative. Servicing will cover belt tensioning, encoder positioning, bearing retainers, hook axial play and timing, presser and needle-bar adjustment and internal lubrication to take-up lever, hopping foot levers, bushings/bearings.

Handi Quilter, Inc.
Customer Service Department
501 N. 400 West
North Salt Lake, Utah 84054

11/01/14

Warranty Registration

11/01/14

Return this registration card within 30 days of purchase or if you prefer, register online at

<http://www.handiquilter.com/warranty>.

MAIL TO: Handi Quilter, Inc.
Warranty Registration
501 N 400 W
North Salt Lake, Utah 84054

WARRANTY REGISTRATION CARD

The HQ Quilting Machine warranty is 10 years manufacturer's warranty on casting and machining of the case, 5 years mechanical, and 5 years electronic/electrical. Check with your local HQ Representative for details on getting service or making warranty claims.

Customer Name: _____

Company/Business Name (if any): _____

Address: _____

City: _____ **State:** _____ **Zip:** _____

Day Phone: (____) _____ **Evening Phone:** (____) _____

Fax: (____) _____ **Email:** _____

HQ Quilting Machine Model (circle one): HQ Avanté HQ Fusion HQ Infinity HQ Sweet Sixteen

HQ Serial Number: _____ **Order Number (5 digits):** _____

Purchase Date: _____ **Date Machine Received:** _____

Location of Purchase: _____ **City:** _____ **State:** _____

Type of use intended:

- Home/Personal
- Some commercial
- Other _____
- Shared w/ Friends
- Mostly commercial

Level of machine-quilting skills:

- Novice
- Intermediate
- Experienced

Skill adjusting sewing machines:

- Novice
- Intermediate
- Experienced

Cut along dotted line and mail or fax this registration information within 30 days of purchase.

This page was intentionally left blank.

HQ Quilting Machine New Owner and Training Checklist and Certificate



You are entitled to a one-time free introductory training class on the use of your HQ quilting machine as well as free adjustments for 60 days and any repairs covered by the warranty. Present this checklist to your authorized HQ quilting machine Rep to receive these free services.

Table

- How to adjust length
(Not applicable for HQ Sweet Sixteen)
- How to adjust height

Machine Setup

- Identify the main parts of the machine and where they are located
- Ensure machine is properly mounted to the carriage or table
- Check all cable connections
- Ensure power outlet is available and does not cause a trip hazard
- Recommend and explain the importance of a power strip with surge protection
- Ensure the table is level
- Show how to wind a bobbin (*including how to adjust the tensioner and the capacity lever*)
- Show how to load a quilt

Machine Operation (all machines)

- How to turn the machine on and off
- How to change the needle
- How to change the Handi Feet
- How to properly thread the machine
- How to set the bottom tension (*bobbin case*); teach the drop test
- How to set the upper tension
- How to bring up the bobbin thread
- How to tie off
- How to use the menus: explain each menu
- How to adjust light settings

Machine Operation

(HQ Avanté, HQ Fusion, HQ Infinity)

- How to switch between stitch regulation and manual mode
- How to set the speed in manual mode
- How to set the stitches-per-inch in stitch regulation
- How to use Cruise stitch regulation
- How to use Precision stitch regulation
- How to use the front and rear handlebars
- How to use the laser pointer stylus and the included pantograph
- Review features unique to the purchased machine

HQ Sweet Sixteen only

- How to use the foot control
- How to use the color touch screen
- How to use the functions of the touch screen
- How to set the presets and My Speed
- How to use needle up/down and tie-off buttons

Machine Maintenance

- How to oil the bobbin hook: where, how, and when
- How to clean the bobbin hook area
- How to clean wheels and tracks (*where applicable*)

IMPORTANT: Read before signing

By signing this training checklist you are acknowledging you have been personally instructed in the operation of the Handi Quilter machine you purchased. Additional training by this HQ Retailer or any other HQ Retailer may result in being charged for additional instruction.

Customer Name _____

Customer Signature _____

Training Date _____

Trainer Name _____

Rep Signature _____

HQ Rep Business Name _____

Business City and State/Province _____

HQ Quilting Machine Model (circle one)

HQ Avanté HQ Fusion HQ Infinity HQ Sweet Sixteen

Machine Serial Number _____

Representative: To register training services provided, return completed and signed certificate by FAX (1-801-294-3011) or MAIL:

Handi Quilter
501 North 400 West
North Salt Lake, UT 84054

Retain a copy for your records.

Cut along dotted line and mail of fax this registration information within 30 days of purchase.

This page was intentionally left blank.

