

Back Side View

- 11. Needle Bar
- 12. Needle Bar Thread Guide
- 13. Needle
- 14. Hopping Foot
- 15. Needle Plate
- 16. Presser Bar
- 17. Front Threaded Display Mounting Holes
- 18. Front Base
- 19. Back Casing/Frame
- 20. Rear Base
- 21. Color Touch-Screen Display Connector
- 22. Threaded Horizontal Spool Pin Mounting Hole

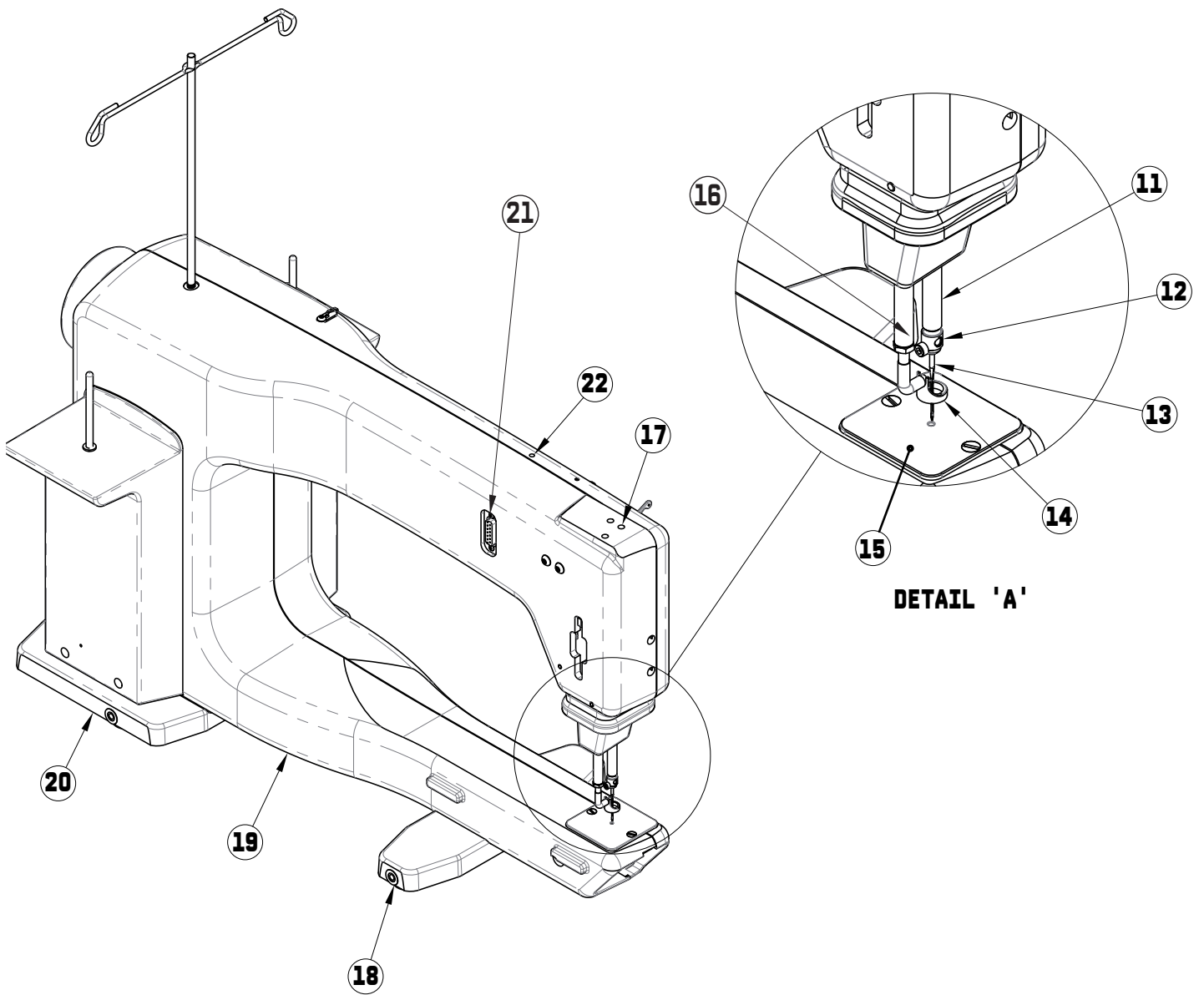


Figure 2

Rear and Front Views

- 23. On/Off Switch
- 24. Power Cord Connector
- 25. Accessory Power Outlet
- 26. Foot Pedal Connector
- 27. Spool Pin 1
- 28. Electronic Control Pod (C-Pod)
- 29. Bobbin Assembly

- 30. LED Light Ring
- 31. Power Pod (P-Pod)
- 32. Spool Pin 2

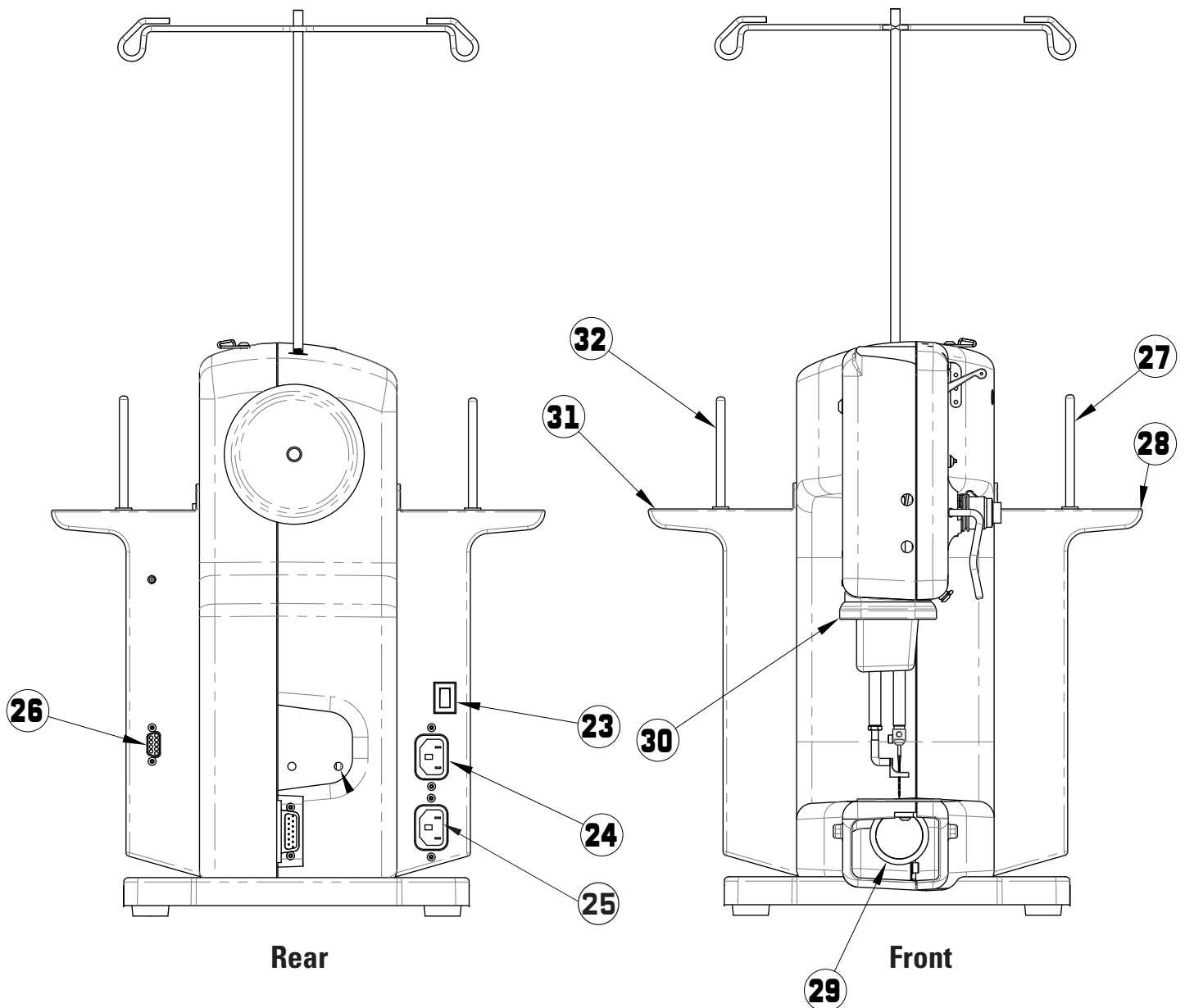


Figure 3

Setting Up the Table (and Taking it Down for Storage)

The HQ Sweet Sixteen table has been designed to accommodate the HQ Sweet Sixteen machine. It has folding legs that are height-adjustable and is heavy enough to provide stabilization for quilting at high speeds.

1. Open the box and gently remove the table, taking care not to drop the table on the floor. The table weighs nearly 50 pounds, so it is recommended that you ask someone to help.
2. Unfold the legs, pulling on the horizontal braces until the legs snap into place. Set the table upright.
3. Make the table taller by pinching the two height-adjustment tabs on each set of legs and lifting on table, while holding legs down with foot. Make the table shorter by pinching the same tabs and pushing down on the table.
4. To store the table, remove machine and return legs to their lowest position.
5. The legs are attached to the table top with brackets of two different sizes. One is longer than the other. Identify the long and the short leg brackets.
6. Fold in the short bracket leg first. Push on the horizontal braces to loosen the legs and push them back toward the table top.
7. Repeat with the long bracket leg.

Placing the Machine in the Table

1. We recommend having someone help lift and place the machine.
2. Lift the machine by putting one arm through the throat space.
3. Guide the machine from the back of the table into the slot. Machine is positioned correctly when the back of the machine is flush with the back of the table.

Installing the Power Cord



Figure 4

Check that the On/Off switch (page 7, Figure 3, #23) is turned off (the 0 setting). Plug the power cord into the top power outlet on the back of the machine (Figure 4). Do not plug the power cord into a power source at this time.

The lower power connector is available for powering future attachments as they are developed by Handi Quilter. (Not yet available.)

Installing the Foot Pedal

1. Plug in the foot pedal cord end into the foot pedal connector (see page 7, Figure 3, #26).
2. Place the foot pedal under the table where operator can reach it from the front of the machine.

Installing the Thread Mast



Figure 5

1. Locate the threaded hole on top of the machine near the rear by the hand wheel.
2. The thread mast comes with a washer and a nut. Remove the nut and washer, replace the nut onto the mast for two or three turns.
3. The washer protects the painted surface when the nut is tightened. Place the washer on the hole and insert the thread mast.
4. Turn the thread mast clockwise several revolutions, stopping when the mast eyelets are positioned directly over the spool pins.
5. Tighten 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, which will cause thread tension problems (see **Figure 5**).

Installing the Color Touch-Screen

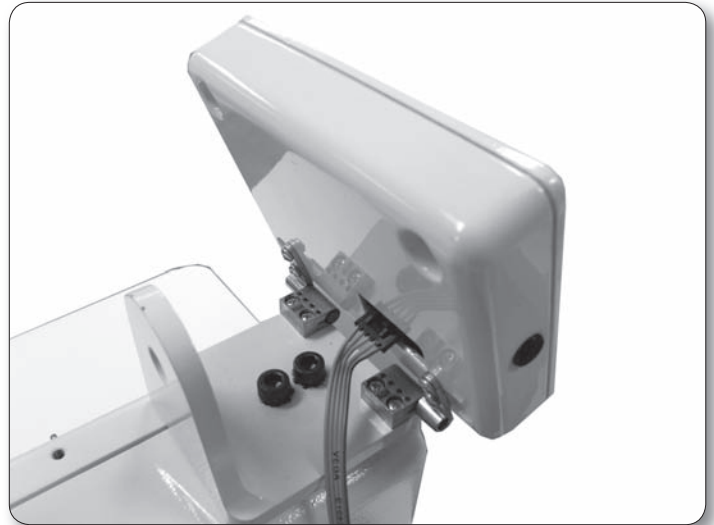


Figure 6

The color touch-screen comes pre-installed on its mounting bracket and should have one end of the D cable attached to the back of the touch-screen (see **Figure 6**).

NOTE: Confirm that the power is turned off before installing the Color Touch-Screen.

1. Remove the two long bolts from the bag in which they are packed.
2. There are three holes on top of the machine head (see **page 6, Figure 2, #17**). Only the two holes that are in line with each other are used. Ignore the third hole located to the side of these two holes.
3. Align the holes in the color touch-screen bracket with the two holes on top of the machine, with the touch-screen facing the needle end of the machine.
4. Use a 5 mm Allen wrench to insert the two long bolts through the holes of the bracket and into the machine (**Figure 6**). Tighten in place.
5. Plug the remaining cable end into the display connector located on the side of the machine (**page 6, Figure 2, #21**).
6. Remove the protective plastic from the touch-screen before using.

Inserting (or changing) the Needle

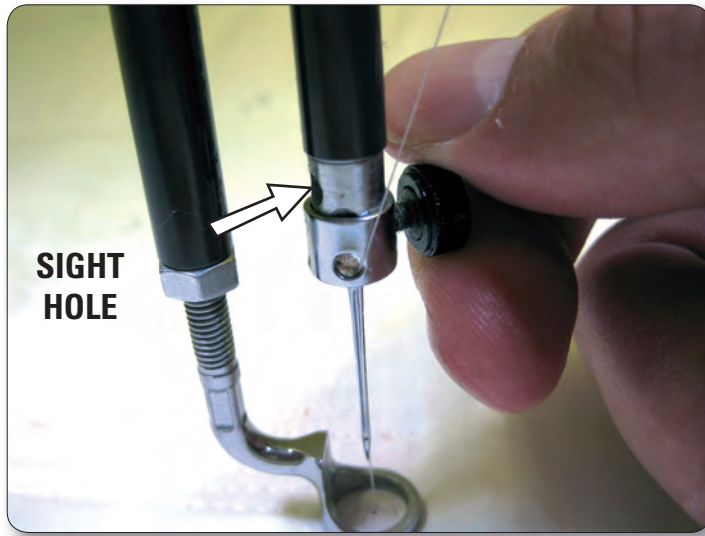


Figure 7

The needle that is in the machine when it arrives at your home has been used for 20 minutes of testing. It is possible that it could be damaged in shipping or as you remove the machine from the box. For these reasons, Handi Quilter recommends that you replace the needle before beginning to quilt with your new machine.

1. Move the needle bar to the highest position by turning the hand wheel.
2. Confirm that the power is off and that the machine is unplugged.
3. Loosen the needle-bar clamp thumb screw (see Figure 7) enough to assure that the needle can be inserted all the way up to the top of the sight hole.
4. With the scarf (small ground out section/dip on the back side of the needle just above the needle eye) facing the hand wheel end 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 further. Look into the sight hole to verify that the butt of the needle reaches the top of the sight hole.
5. Carefully tighten the thumb screw. Over-tightening the thumb screw will result in damaged threads or stripping of the screw hole. Stripped holes are not covered under warranty. 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.

Needles are inexpensive and are important to the success of your project. Plan to change needles every 5-7 hours of quilting or more often if working with a lot of fusibles or heavy materials.

Needle/Thread Selection Guide

Needle Size	Threads
14 (90)	Silk (100 wt) 60 wt., monofilament, glitter, some metallics
16 (100)	60 wt., 50 wt., 40 wt., monofilament, glitter, metallics
18 (110)	50 wt., 40 wt., 30 wt., metallic
20 (120)	30 wt., 20 wt., 12 wt.

Adjusting the Hopping Foot

The foot is adjusted at the factory and should not be moved without consulting the manufacturer.

Threading the Machine

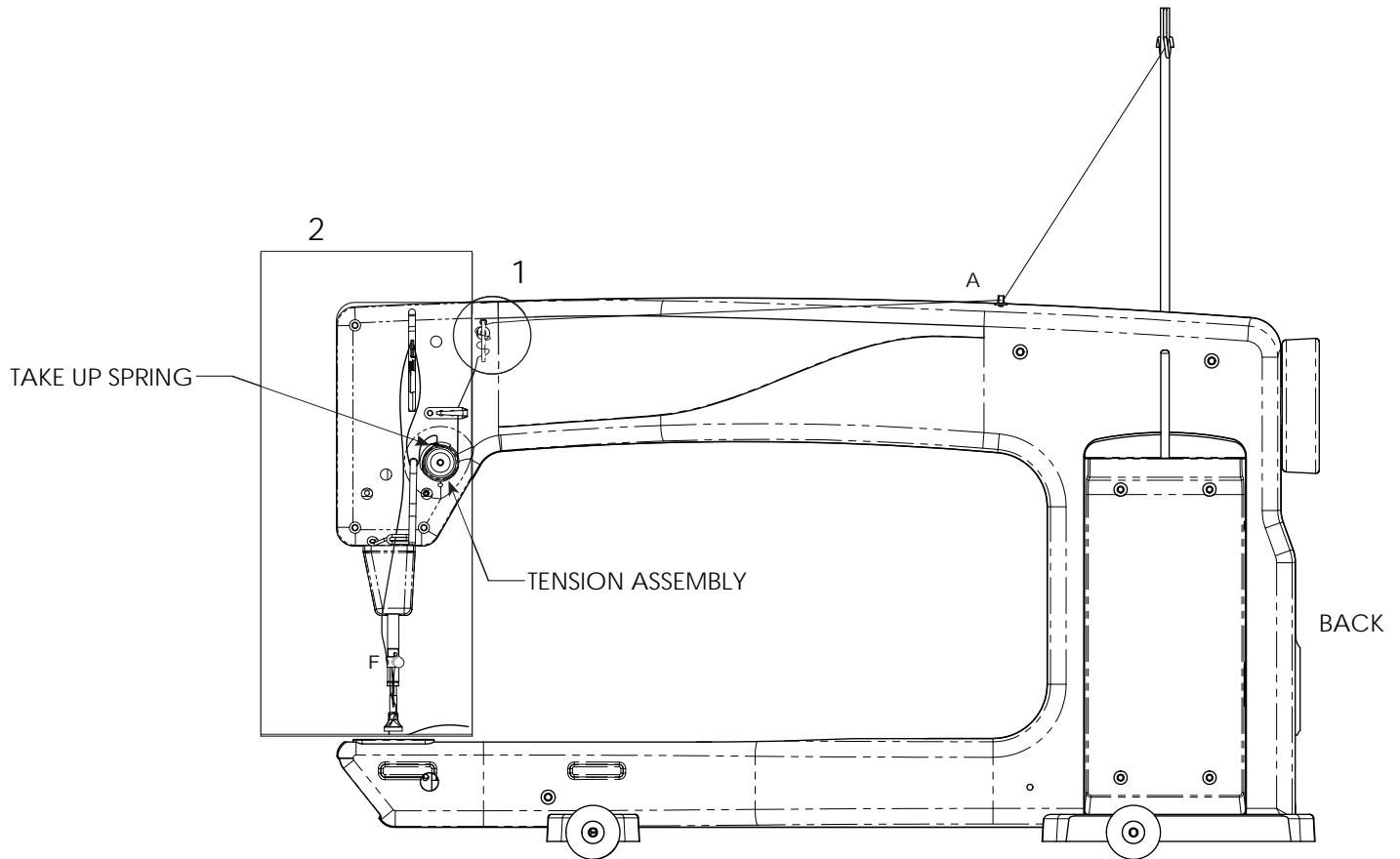
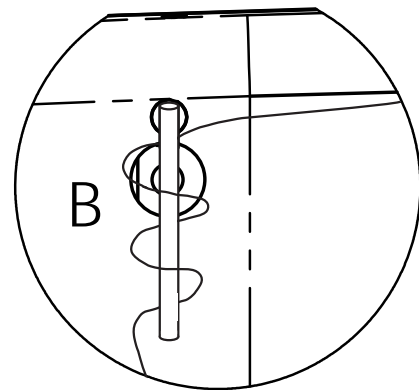


Figure 8

1. Place a cone or spool of thread on the spool pin. If using a spool, make sure that the slits on the spool are against the base of the spool pin holder. Pass the thread through the thread-mast eyelet from back to front, continuing to thread guide A. (Figure 8)

2. Continue to the three-hole thread guide B. Beginning at the top, wrap all three holes from back to front, hand wheel side to needle side (see Figure 9).

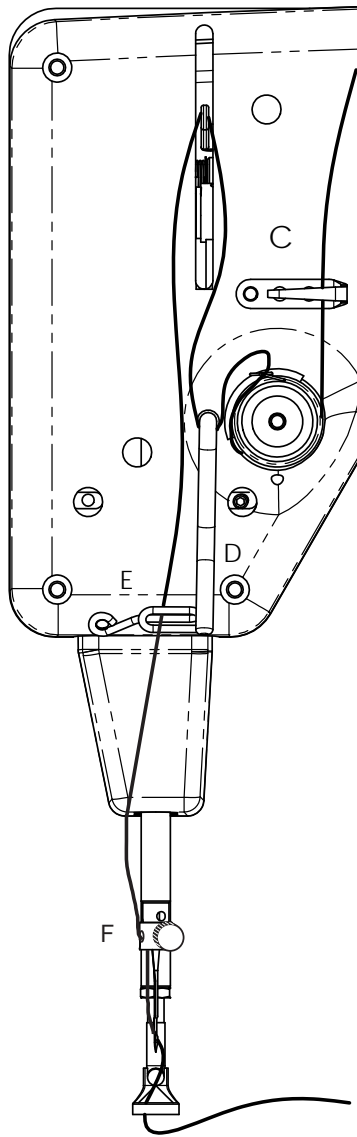
Note: The purpose of the three-hole thread guide B is to prevent loops of thread coming off the thread cone from going into the top tension as a knot causing thread breakage and bad tension. For most threads on a cone, it is important to thread all three holes for consistent results and to make adjustments 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. You may try skipping one or two holes on thread guide B when using these threads.



DETAIL 1

Figure 9

Note: See "HQ Quilting Machines Getting Started" DVD (included with your machine) for videos showing threading and other tips. These videos are also available on www.HandiQuilter.com.



DETAIL 2

Figure 10

3. Thread continues through thread guide C, and then down to the tension assembly (see Figure 10).

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 NOTE:** The HQ Sweet Sixteen 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 HQ Sweet Sixteen 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 stitch 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.*

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.

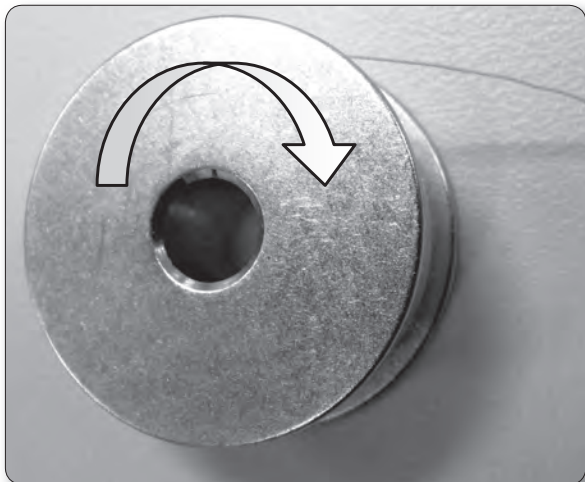


Figure 11

1. Place the bobbin in the bobbin case so that the thread pulls off clockwise when viewing the open side (Figure 11).

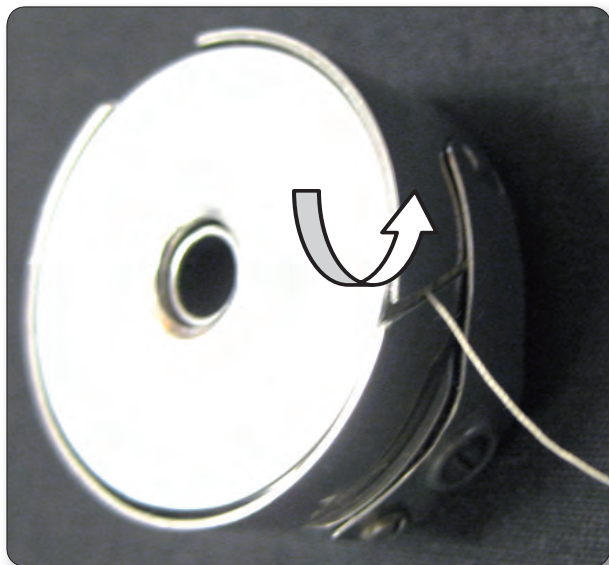


Figure 12

2. Slide the thread through the slot (Figure 12) and under the tension spring leaving 5-6 inches of thread hanging loose (Figures 12 and 13).



Figure 13



Figure 14

3. To insert the bobbin case into the machine, grasp the bobbin case with thumb and first finger. Do not lift the lever on bobbin case. Fit the bobbin case onto the hook spindle in the machine. Rotate the case until the open throat keys into the alignment notch in the middle of the hook. Push the case in until it stops in place. Push the case inward further until it clicks (see Figure 14). Allow the thread end to hang freely.

NOTE: Pulling out the latch lever pushes the bobbin forward in the bobbin case, aiding in removal of the bobbin. The lever should be used only for removing the bobbin case from the machine.

NOTE See "HQ Quilting Machines Getting Started" DVD (included with your machine) for videos showing adjusting bobbin tension and other tips. These videos are also available on www.HandiQuilter.com.

Drawing the Bobbin Thread to the Top of the Quilt

1. After threading the machine, plug it in and turn on the power. Place quilt sandwich under hopping foot.
2. While firmly holding the tail of the needle thread with the left hand, choose one of the following methods to cycle the needle through one full rotation to bring the bobbin thread to the top of the quilt.
 - A. Foot Pedal Method. LIGHTLY tap the foot pedal to make the needle go down. Then LIGHTLY tap again to bring the needle up.
 - B. Needle Up/Down Button Half-Stitch. Find the Needle Up/Down Button in the center of the color touch-screen main display. Press once to cycle the needle down. Press again to cycle the needle back up.
 - C. Needle Up/Down Button, Full-Stitch. Find the Needle Up/Down Button in the center of the color touch-screen main display. Press and hold briefly to cycle the needle through one complete stitch cycle (down and back up).
3. Pull the fabric 3-4 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.

Checking and Adjusting Bobbin Case Tension

The bobbin case 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 lift the bobbin case from your hand. While gently moving the finger front to back (not up and down, which is not consistent), the bobbin case should slide slowly down the thread, like a spider on its web.

The small screw in the center of the tension spring is where the adjustment is made (see Figure 15). Turn clockwise to tighten and counter-clockwise to loosen the bobbin case tension. Make very small adjustments. Check the bobbin tension every time a new bobbin is inserted.



Figure 15

Tighten Bobbin Case Tension

The bobbin case tension is **TOO LOOSE** if it will not lift up onto its side. Turn screw clockwise to tighten. The bobbin case screw requires very small adjustments. Think of the “tick of a clock”. Adjust, then check. Adjust and check again.

Loosen Bobbin Case Tension

The bobbin case tension is **TOO TIGHT** if it lifts out of your hand. Turn screw counter-clockwise to loosen. The bobbin case screw requires very small adjustments. Think of the “tick of a clock”. Adjust, then check. Adjust and check again.

Top Thread Tension Adjustment

IMPORTANT NOTE: Top thread 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. (See Figure 16 on next page.) Tension may need to be adjusted, depending on the fabric, thread or batting used in each project.

Unlike the bobbin case adjustment, which requires minute adjustments (like the tick of a clock), the top tension knob may require turns anywhere from 1/4 of a turn to 2-4 turns to achieve balanced tension.

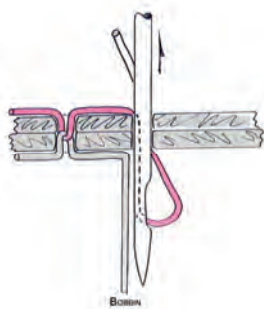
Tighten Top Thread Tension

To adjust the top tension tighter, turn the top thread tension knob (page 5, Figure 1, #5) clockwise.

Loosen Top Thread Tension

To loosen the tension, turn the top thread tension knob (page 5, Figure 1, #5) counter-clockwise.

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. If the top tension is too loose (causing loops of thread on the underside of the quilt) and no amount of tightening the top thread tension knob seems to affect it, there's a good chance that the thread is riding on the outside of the tension discs and is not "flossed" between them.



A stitch is balanced when the top thread and the bobbin thread meet in the middle of the quilt sandwich.

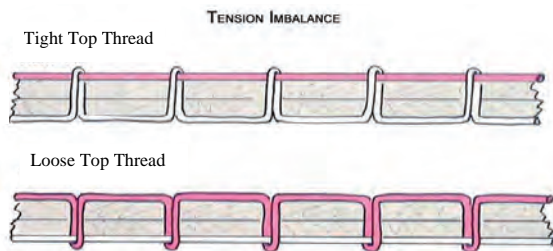


Figure 16

Maintenance

NOTE: Turn off the machine and remove the power cord when performing maintenance on the machine.

Cleaning and Lubricating the Machine

Only use light sewing machine oil in the HQ Sweet Sixteen. Internal oiling is not necessary on the HQ Sweet Sixteen 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.



Figure 17

To lubricate, turn off the machine. Remove the 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 (see Figure 17)). 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 stitch through a scrap piece of fabric, 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 Touch-Screen Display

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

Using the Touch Screen Display

Display Menus

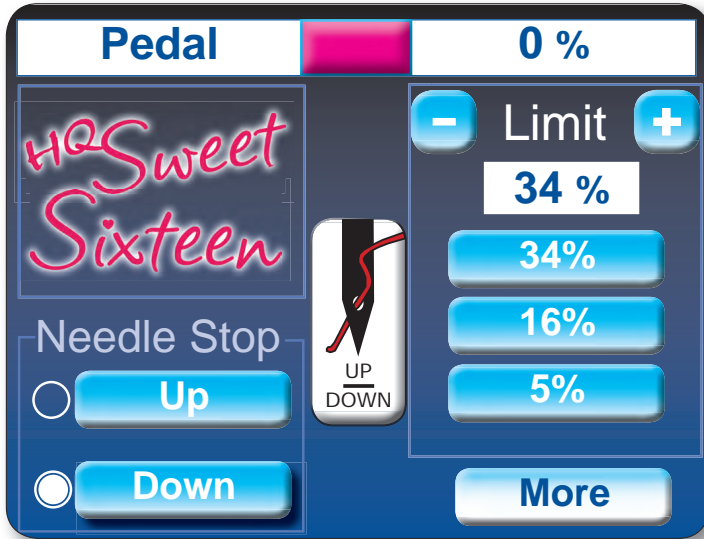


Figure 18

NOTE: Review the Handi Quilter “Getting Started” DVD for interactive instruction on the HQ Sweet Sixteen menu functions.

The HQ Sweet Sixteen has a color touch-screen display on the front of the machine. Settings are changed using this display.

Main Screen Button Functions (Figure 18)

Pedal Status

The status of the foot pedal connection is displayed in the top left corner of the Main screen (Figure 18). If the foot pedal is not properly connected the message “Check Pedal” will appear in red letters. Once the pedal is connected properly the word “Pedal” appears in that space in black letters.

On/Off Indicator

The box in the center of Figure 19 indicates whether or not the motor is running. It will be red when the machine is stopped and green when the foot pedal is pressed.

Current Speed

The box in the top right of Figure 19 is the current percentage of full speed the machine is running. The value displayed will vary as you press and release the foot pedal. The maximum percentage value that is displayed is controlled by the Limit that is set for the machine.

Limit Controls

The Limit box encompasses two main features, the “My Speed” controls and Preset buttons. The My Speed controls consist of “+” and “-” buttons and the white My Speed display box (Figure 20). Pressing the “+” button will increase the maximum motor speed the pedal controls. Pressing the “-” button will decrease the maximum speed.

The My Speed range is between 5 % and 100 % or between 75 and 1500 stitches per minute (SPM). The current percentage My Speed value is displayed in the white box under the “Limit” text. This My Speed setting will be preserved when the machine is shut off, allowing you to begin quilting again at the same speed when you turn the machine back on.



Figure 19

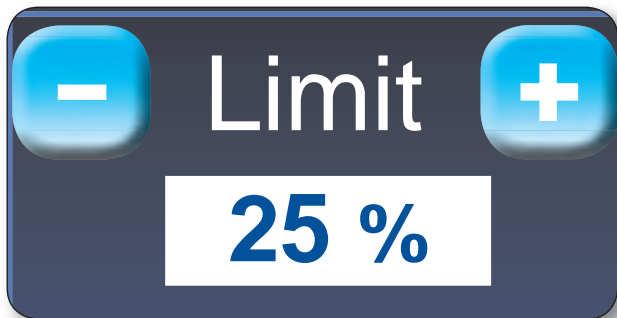


Figure 20

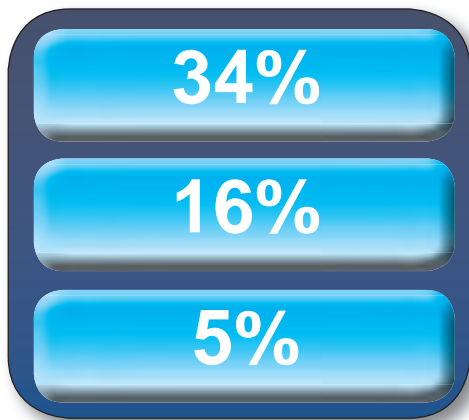


Figure 21



Figure 22



Figure 23

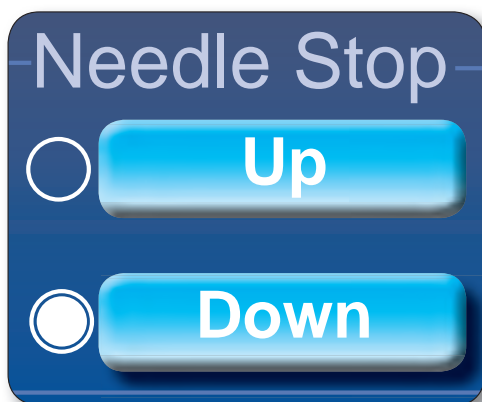


Figure 24

The second feature of the Limit box are three buttons called Presets that can be customized to your favorite speed settings (Figure 21). Pressing a Preset button will change the “My Speed” setting to the speed shown on that button. This feature makes it quick and easy to switch between different speeds preferred for different types of quilting. For example you may wish to use a slower speed for detail work and a faster speed for stippling. Changing these Preset values is discussed in the “Presets Screen” section.

More

Pressing the “More” button (Figure 22) will change to the “More” menu screen, which allows access to lighting options, sound options, diagnostics menus, system information, Preset button customization and a calculator.

Up/Down/Tie-Off

The button with the needle image in the center of the screen can assist you in creating tie-off stitches, basting or needle-positioning functions without the use of the foot pedal (Figure 23). Pressing and releasing the button quickly will send the needle to the next needle stop position. If the needle is up, pressing the button will cause the needle to move to the down position. If the needle is down, it will return to the up position.

Pressing and holding the button for a longer time allows you to do a full stitch. As long as you continue to hold the button down the machine will continue to stitch at a slow rate, and when the button is released the needle will stop in the closest stop position (up or down) available. This action is useful for tying off beginning and ending stitches.

Needle Stop

When in “Needle Up” mode (indicated by a white circle), the needle ends in the “Up” position upon release of the foot pedal. This button does not move the needle, but simply determines the final needle position after the machine has been stopped. (Figure 24)

When in “Needle Down” mode (the circle is filled in when activated), the needle ends in the “Down” position upon release of the foot pedal. Again, this button does not move the needle, but sets the final resting position of the needle after the foot pedal is released.

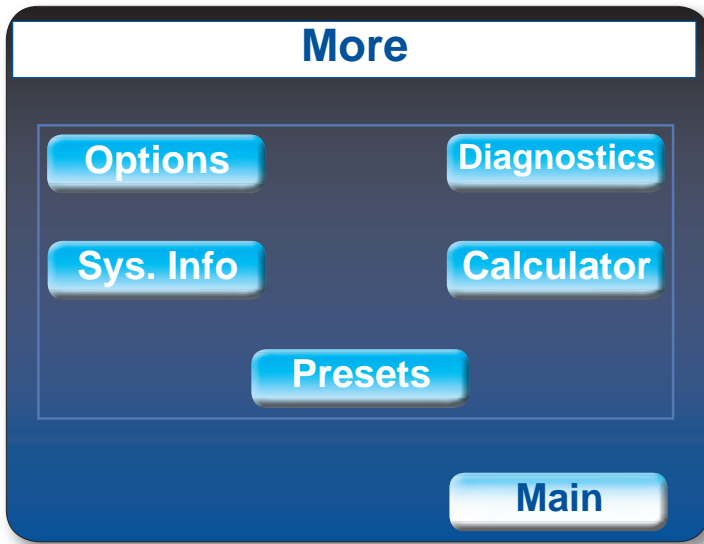


Figure 25

More Menu (Figure 25)

The More screen allows access to other functions available on the HQ Sweet Sixteen. (Figure 25)

Options

Pressing the “Options” button will open a screen that allows adjustment of the sound volume and the LED Light Ring brightness.

Diagnostics

The “Diagnostics” button activates the screen where machine diagnostic functions can be performed. Diagnostic functions are generally only used when working with Handi Quilter Technical Support to resolve issues.

System Information

The “Sys. Info.” Button provides access to machine information. This includes the machine Serial Number, the hardware and firmware version numbers and the Stitch Counters.

Calculator

An on-screen calculator may be accessed from the “More” screen.

Presets

Press the “Presets” button to adjust the three available speed presets.

Main

Press the “Main” button to return to the Main menu screen.



Figure 26

Options Screen (Figure 26)

Volume

The “Volume” portion of this screen has two buttons and a sliding control. Pressing on the “Mute” button turns off the sound of the buttons when they are pressed. 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 .

Brightness

The “Brightness” portion of this screen has two buttons and a sliding control as well. The LED Light Ring can be turned on completely with the illuminated light bulb button or off completely with the darkened light bulb button. Pressing the sliding control in any position will set the brightness to the value indicated in the slider control. Pressing and moving back and forth across the sliding control will change the brightness up as it is moved left to right and down as it is moved right to left.

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

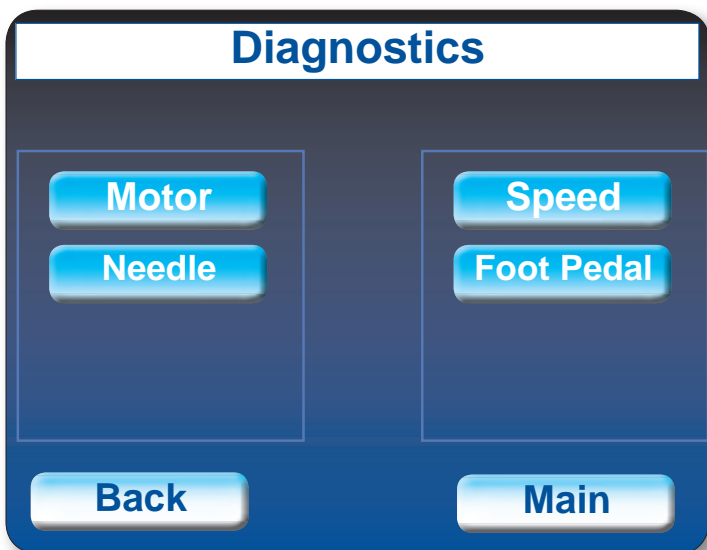


Figure 27

Diagnostics Screen (Figure 27)

Four different diagnostics tests can be performed on the machine. These functions test the motor control operation, the foot pedal and the internal position sensors.

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



Figure 28

Diagnostics Tests (Figure 28)

Motor Sensor Test

The “Motor” Sensor test can help you determine whether they may be a problem with the HQ Sweet Sixteen motor. Slowly rotating the hand wheel should result in an 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.

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



Figure 29

Needle Sensor Test

The Needle Sensor test will indicate whether the needle position sensor is functioning properly. Rotating the hand wheel should result in a “beep” for half of a stitch cycle followed by no “beep” for the other half. (Figure 29)

If you hear a constant beep or no beep at all for a full 360° rotation of the hand wheel, 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 “Main” menu screen or the “Back” button to return to the “More” menu screen.

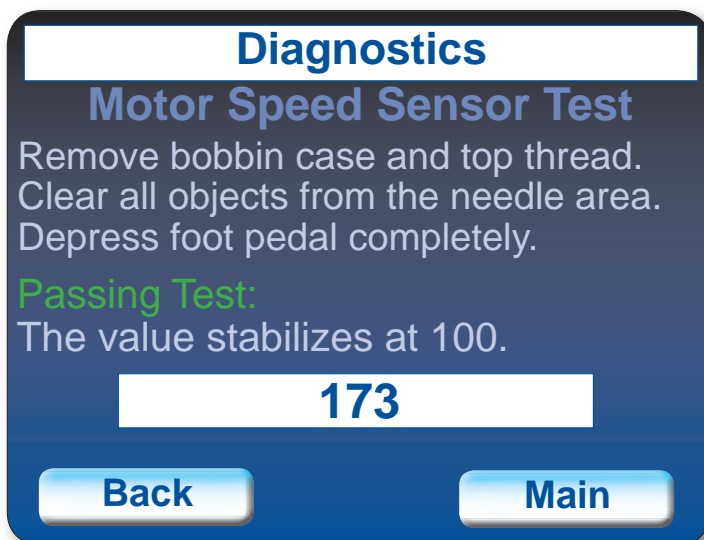


Figure 30

Motor Speed Sensor Test

The “Speed” Sensor test can help you determine whether or not there is a problem with the HQ Sweet Sixteen speed sensor. Before performing this test, remove the bobbin case and the top thread. Press the foot pedal so that the machine will begin slowly rotating. The white box will show a number that should stabilize at 100 if the sensor is functioning properly. Release the foot pedal to stop the machine. (Figure 30)

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

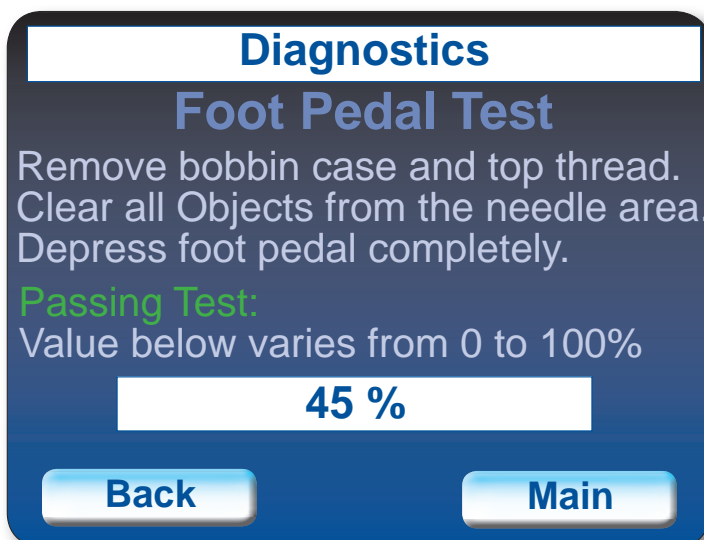


Figure 31

Pedal Test

The “Pedal” test can help you determine if there is a problem with the HQ Sweet Sixteen foot pedal. As you slowly depress the foot pedal a percent of depression will appear in the white box. The foot pedal should be controllable from 0 to 100%. (Figure 31)

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

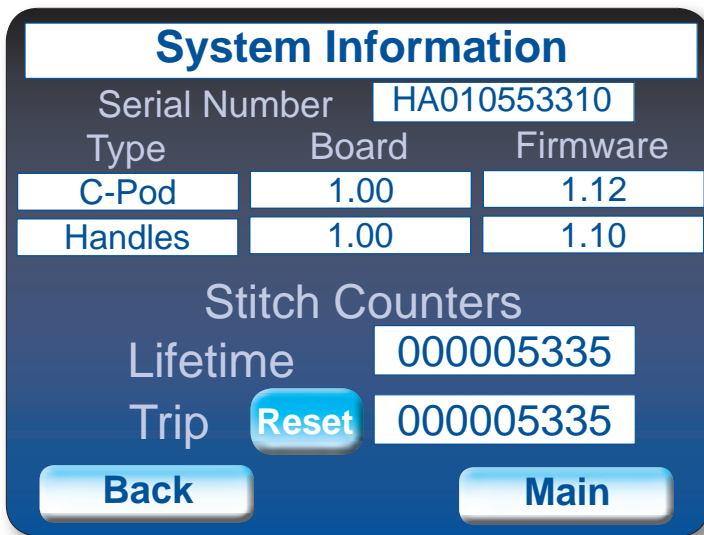


Figure 32

System Information Screen

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 Sweet Sixteen 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 found aligned with the Trip counter.

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 32)

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

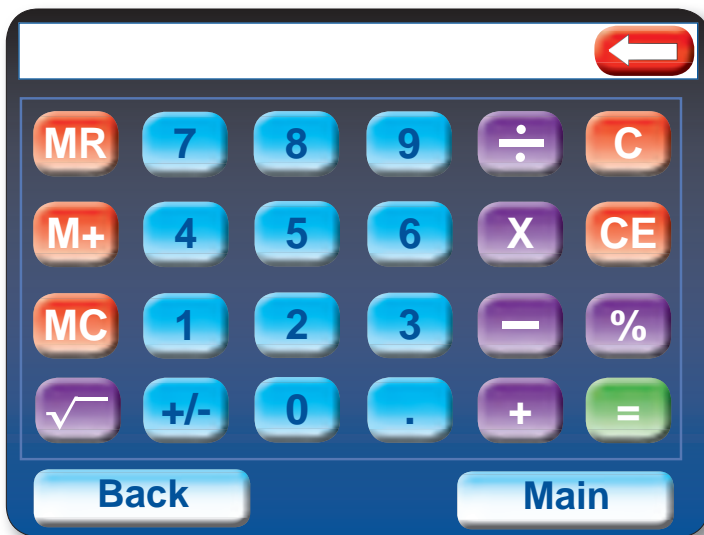


Figure 33

Calculator Screen

A basic six-function calculator is provided for your convenience. (Figure 33) The functions provided are addition, subtraction, multiplication, division, square root and percent. The arrow button on the top right may be used to delete a digit mistakenly entered.

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

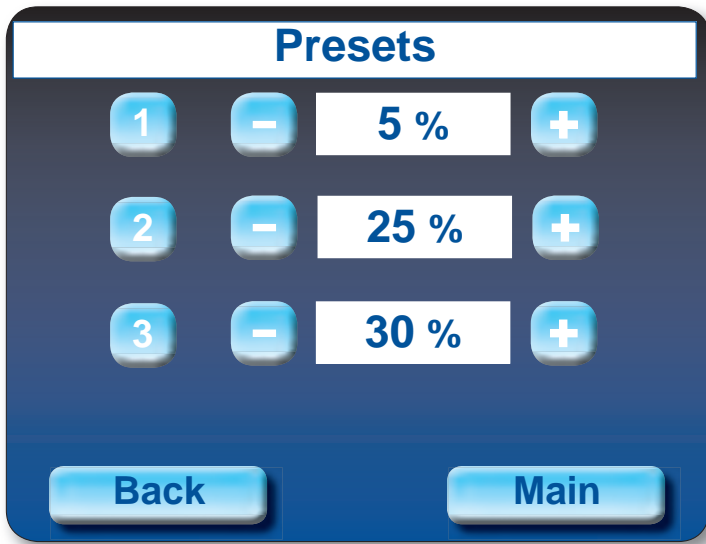


Figure 34

Presets Screen

Pressing the Presets button will take you to a screen that allows you to customize the preset button speed settings (Figure 34). There is a "+" and "-" button for each of the three presets and a white box that displays the current setting.

The top preset value indicated by the number "1" box on the left adjusts the top button on the main screen. Pressing the "+" button will increase the preset speed and pressing the "-" button will decrease the speed. These presets are saved so that they are preserved even if the machine is turned off.

Press the "Main" button to return to the "Main" menu screen or the "Back" button to return to the "More" menu screen.

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. Heavier fabrics such as denim, canvas or densely woven fabric may 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 Sweet Sixteen Quilting Machine does not have feed dogs like domestic machines; therefore, the fabric does not automatically feed under the hopping foot. The operator controls the machine sewing speed with the My Speed setting and the foot pedal, and moves the fabric to get an even, consistent stitch.

In order to become comfortable using the HQ Sweet Sixteen, quilters can begin with a few simple techniques using a sample quilt sandwich (two pieces of fabric with a layer of batting between them).

Set the machine at a medium My Speed setting (perhaps 25%) and begin moving the fabric until you become accustomed to the resistance. By moving the fabric faster, the stitches begin to elongate. The My Speed setting can either be increased or the fabric can be moved slower to get the stitches back to the desired length. By moving the fabric 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 My Speed setting can be decreased or the foot pedal released slightly, while maintaining a constant motion with the fabric, to bring the stitches back to the desired length.

When quilting, relax your hands and maintain a light touch on the fabric. Gripping the fabric too tightly may cause body tension resulting in poor quilting quality and discomfort.

Different colors of fabric may require different brightness settings for the LED light ring to prevent eye strain.

Correcting Common Issues

Skipped Stitches	Corrective Measure
<ul style="list-style-type: none"> The needle is damaged, dull, bent, or installed improperly Incorrect needle size Very tightly-woven fabric (such as batiks) Needle has not been positioned properly 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 Sweet Sixteen 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 combination of needle size and thread weight being applied to the quilting operation. Some 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 (see Photo 16)—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 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.
The Needle Breaks	Corrective Measure
<ul style="list-style-type: none"> The needle is bent or not installed properly The needle hits the needle plate 	<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, needle plate or hopping foot. Replace needle with a new one.
Stitches are Puckered	Corrective Measure
<ul style="list-style-type: none"> Tension is not balanced Needle too large for material 	<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 to the fabric.

Correcting Common Issues

Stitch Quality is Poor	Corrective Measure
<ul style="list-style-type: none"> • Tension is not balanced • Bobbin case is damaged, corroded, dirty, et cetera • Moving the fabric or depressing the foot pedal inconsistently 	<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. • The My Speed setting should be adjusted to a value that will allow you to sew comfortably and confidently with the foot pedal fully depressed. Discover a method of holding the fabric that is most comfortable.
Tension Is Poor	Corrective Measure
<ul style="list-style-type: none"> • Lint caught under the tension spring in the bobbin case • Poorly wound bobbin 	<ul style="list-style-type: none"> • With some threads, lint and other material can build up under the tension leaf spring and begin to lift the spring. This reduces 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 to the previously set tension. • If the bobbin is wound too tight or too loose it 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 sides to bulge. It should also not be so loose that the thread is spongy, which can cause 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 remove the power plug from the electrical outlet. Remove the bobbin case from the machine. Lubricate the hook, then manually rotate the hand wheel clockwise and counter-clockwise several times. 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 the machine is correctly threaded, tighten the top tension by rotating the tension knob clockwise. • Refer to the threading diagram and threading instructions on page 12.
Motor Fails to Run	Corrective Measure
<ul style="list-style-type: none"> • On/Off switch is off or power cord is loose • Foot pedal is unplugged 	<ul style="list-style-type: none"> • Turn the machine on only by using the switch on the back of the power pod. Verify the power cord is plugged in tightly at both the machine and the power source. • Verify that the foot pedal is plugged in. If the main screen status message in the upper left hand corner says "Check Pedal", then the pedal is not properly installed.

Correcting Common Issues

Needle Thread Breaks	Corrective Measure
<ul style="list-style-type: none"> • Top and bobbin tension not balanced • Thread cones/spools are poor quality or may have severe twisting or thread rot • 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 the thread • Hesitating too long at one point in the pattern • Improper needle/hook relationship • Damage or burr at the needle hole in the needle plate or any other place along the thread path • Wrong type of needle • Other possible causes: 	<ul style="list-style-type: none"> • Check the tension of the top tensioner and bobbin for proper balance (see page 12). • Look for severe twisting of threads when approximately 12 to 15 inches has been pulled off, with 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 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 lint or debris. • Change the bobbin. The slightest hesitation of the bobbin rotation can be the cause of dramatic tension change and thread breakage. Use ONLY HQ bobbins • Change the needle at least once per quilt. Make sure the needle is installed to the top of the sight hole in the needle bar. • Replace the needle with 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 at your local, authorized Handi Quilter representative. • If the thread is shredding at the needle 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 hole. • 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 clamp at an angle. This may cause skipped stitches because the needle is positioned too far away from the hook point. It can also cause the needle to hit the hook, breaking the needle. • The needle is too close to the hook, which causes friction and a possible collision of the hook point and the needle. • Needle plate damage. • Hook damage. • Broken needle inside needle bar clamp, preventing the needle from insertion to the top of the clamp. • 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 display to the machine and make sure the connection is secure.

Optional Accessories

(available from your local HQ Rep or at www.HandiQuilter.com)

Horizontal Spool Pin

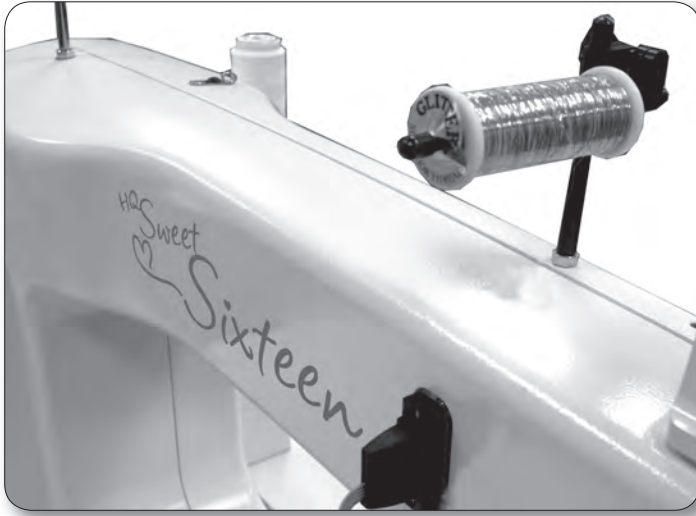


Figure 35

An optional horizontal spool pin is available for use with delicate threads such as metallics or holographic threads or for specialty threads that are wound on a spool (not a cone). Some threads twist and break if fed from a vertical spool.

Open-Toe Hopping Foot

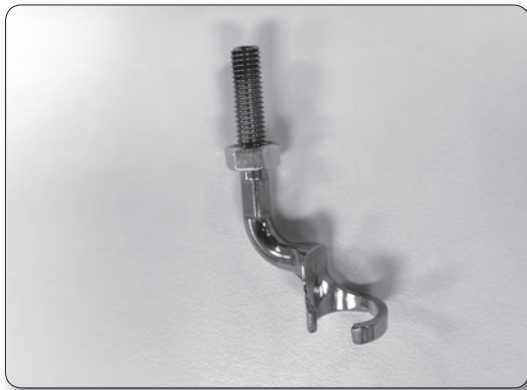


Figure 36

Use when greater stitch visibility is desired. Comes with tool and instructions for removing current hopping foot. Expected to be available 01/01/2011.

HQ Sweet Sixteen 18" Table Extension



Figure 37

Expand your original HQ Sweet Sixteen table with HQ Sweet Sixteen Table Extensions. Each extension measures 18" x 30" (see Figure 36). Purchase one or two to provide extra support for large projects.

Adding two extensions will expand the original table to a full six feet in width (one extension shown above).

OttLite® for HQ Sweet Sixteen

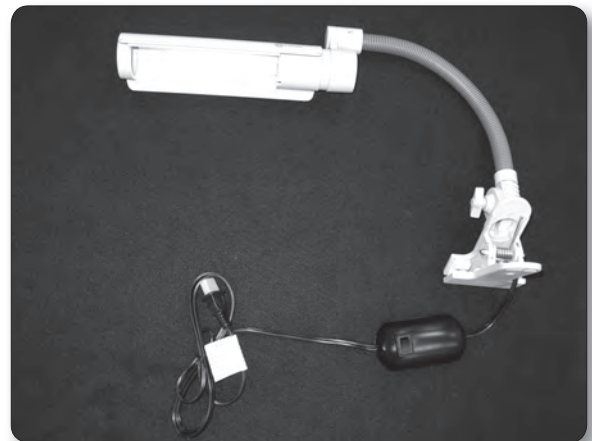


Figure 38

Add an additional light source for side-lighting your quilting stitches. Can be especially useful when quilting with white thread on white fabric. OttLite mounts to the back side of the color touch-screen mounting bracket and comes with mounting hardware. Requires additional power source.

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445 N 700 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) **2 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) **2 year electronic/electrical warranty.** The electric/electronic components are warranted to be free from manufacturing defects for one year 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 2 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.

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 2-4 hours (1-2 per large quilt) and lubricate bobbin hook every 3-4 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
445 N. 700 West
North Salt Lake, Utah 84054

08/26/10

Warranty Registration

11/08/10

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
445 N 700 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, 2 years mechanical, and 2 year 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): HQ18 Avanté HQ24 Fusion HQ Sixteen HQ Sweet Sixteen

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

Purchase Date: _____ Date Machine Received: _____

Location of Purchase: _____ City: _____ State: _____

Type of use intended:

- | | |
|--|--|
| <input type="checkbox"/> Home/Personal | <input type="checkbox"/> Shared w/ Friends |
| <input type="checkbox"/> Some commercial | <input type="checkbox"/> Mostly commercial |
| <input type="checkbox"/> Other _____ | |

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.

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HQ Quilting Machine Set-up and Training Checklist & Certificate



You are entitled to a 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

- Adjusting length (Not applicable for HQ Sweet Sixteen)
- Adjusting height

Machine Set-up

- 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 for the machine
- Leveling the table/machine
- How to wind a bobbin (including adjusting the tensioner and the capacity lever)
- How to load a quilt

Machine Operation (all machines)

- How to turn the machine on and off
- How to thread the machine properly
- Setting the lower tension (bobbin case), teach the drop test
- Setting the upper tension
- Using the Menus. Go through each menu and explain.
- Bringing Up Bobbin Thread
- How to Tie Off

Machine Operation (HQ¹⁸ Avanté, HQ²⁴ Fusion, HQ Sixteen only)

- Changing from Stitch Regulation to Manual and back
- Setting the speed in Manual
- Setting the stitches-per-inch in Stitch Regulated
- Light settings
- Cruise Stitch (known as Stitch Regulation in HQ Sixteen)
- Precision Stitch (not applicable for HQ Sixteen)
- How to use the front and rear handlebars
- How to change the needle
- How to use the Laser Pointer stylus. Use the included Pantograph.

HQ Sweet Sixteen only

- How to use the foot control.
- How to use the color touch-screen
- Explain functions of touch-screen displays
- How to set Presets and My Speed
- How to use Needle up/down/tie-off button

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)

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)

HQ¹⁸ Avanté HQ²⁴ Fusion
HQ Sixteen 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
445 N 700 W
North Salt Lake, UT 84054

Retain a copy for your records.

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

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Designed by a Quilter, for Quilters.®

Handi Quilter, Inc
445 N. 700 W.
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