



Training:

HAPPY HCH-701 Operations & Maintenance

Chapter 3: Hooping, Sewing Checklist, Tension Test

This chapter discusses hooping, provides a simplified quick-start checklist for sewing a design, and then directions on checking upper thread tension.

- 1. QuickStart Guide to sewing in 3 easy-to-follow pages** **2**
 - Phase 1: Machine Prep & Hooping 2
 - Phase 2: Design Setup 3
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- 2. Upper Tension Test – Once you know how to sew, test your upper tension.** **5**
 - About tension
 - The test design and what it does
 - Sewing the design

Current as of August 2014

QuickStart Guide

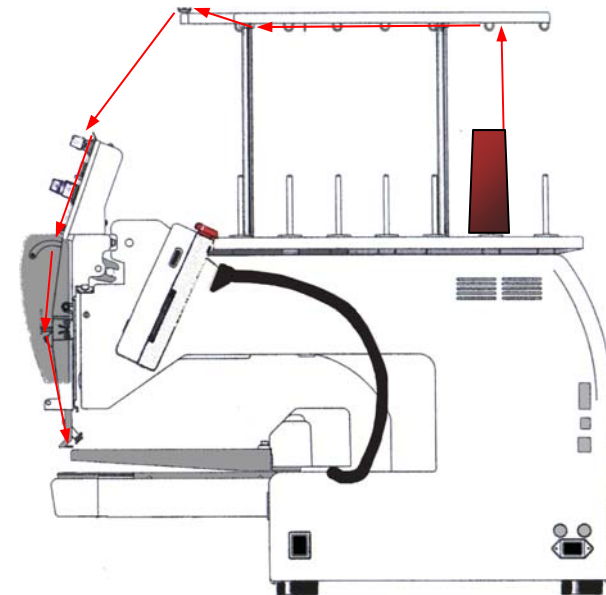
Phase 1 of 3: Machine Prep, Hooping

QUICK MACHINE CHECK

1. **Power on** and press NEXT to boot to the Sewing (Drive) screen.
2. **Check Upper Thread** on the cone side and on the needle side – no snags, all loose ends docked. Add any cones. Quick pull check – tension, wheels, smooth feed.
3. **Check Bobbin Thread:** Check tension, proper insertion. Oil the hook if needed.

HOOP THE GARMENT & MOUNT ON THE MACHINE

1. **Choose hoop** – smallest that comfortably fits the design.
2. **Choose backing** and topping if needed, sized a little larger than the hoop.
3. **Hoop garment** not too tightly, inner outer rings flush, use good placement system.
4. **Mount hoop on machine** – check positioning pin lock and garment clearance.



QuickStart Guide

Phase 2 of 3: Design Setup, Matching to a Hoop & Positioning

DRIVE Screen

Press this button to set design colors. ...

Press the Needle button

2. Set thread colors

... assigns that thread color to whatever part of the design is selected (flashing) here.

Press the green button to position & fit. The design

3. Position design in the hoop

... next, re-position the design if desired, using the arrow keys shown here...

Finally, press the HOME button to return to the Drive screen.

READ Screen

1. Read in the design

... choose "READ" ...

... in the screen that appears, choose a design, wait for 2 beeps to completely load...

Finally, press the HOME button to return to the Drive screen.

NEEDLE Screen

Top row shows design sections 1-5. Bottom row shows 1 out of 9 sections is highlighted.

Picking a needle number here ...

When finished setting colors, press HOME to return to the Drive screen.

DESIGN Positioning Screen

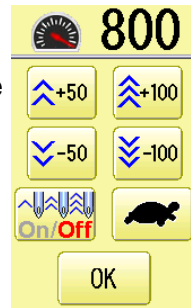
... first, select your hoop if it's not the one already showing...

Finally, press the HOME button to return to the Drive screen.

QuickStart Guide

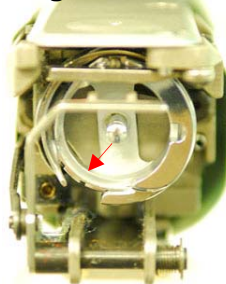
Phase 3 of 3: Sewing & Basic Error Correction.

1. Adjust Max Speed (optional): press the **SPEED** button to call up the sub-screen shown here. You can adjust max allowable speed between 300 - 1000 stitches/min in steps of 50 or 100. Press the turtle button to toggle "crawl" mode (100spm) on and off. Blue is on, yellow off. Press OK when finished.

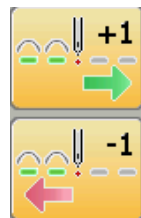


2. Oil the sewing hook just before pressing START.

Open the bobbin case door and remove the bobbin case. Apply 1-2 drops of sewing machine oil where indicated as shown on the right. Normal operation, repeat every 4 to 6 bobbin changes. For heavy, non-stop operation, increase the frequency i.e. every 2-3 bobbin changes.



3. Thread break/stoppage recovery: the machine will stop automatically on detecting bobbin runout, thread break or other causes. If so, resolve any problems found, then press these buttons to adjust sewing position, for example, to move backwards a few stitches before resuming sewing.



If showing, indicates the design is at the starting position



Press START/STOP to start or pause sewing.

Advice about sewing speed: When starting out, set sewing speed to a safe, medium speed, then increase with your comfort level with the machine.

Upper Tension Test and Adjustment

Upper tension is one of the most important adjustments you can make to maximize sewing quality and minimize problems. A good tension test design at the very least samples all of the threads, in satin stitching, in several directions. Follow the steps in this exercise to (1) to sew the design, then (2) adjust tension accordingly until tension is properly adjusted.

1. **Transfer the tension test design** called "hstest12" into your control panel. You can download this from www.happyemb.com in the support section.
2. **Ensure that the bobbin tension** has been set correctly using the drop test. (review Chapter 2– "Bobbin Loading and Tension")
3. **Set the color sequence** In the Needle screen to 1, 2 ,3etc to 12
4. **Hoop an ideal fabric** (2 layers of cutaway backing is usually good enough)
5. **Sew a sample** on the 32 cm square hoop.
6. **Examine the results by looking at the reverse side.** Check each satin sample to ensure there is a white strip of bobbin thread 25%-33% in the center. Then, if:
 - **Bobbin strip is very thin or non-existent: *that thread is very loose.*** Tighten using the upper tension knob for that needle.
 - **Bobbin strip is a little thin but consistent: thread is slightly loose.** Tighten using the upper tension knob for that needle.
 - **Bobbin strip is wide to a large degree**, some of it being pulled around to the front: **That thread is very tight.** Loosen using the upper tension knob for that needle.
 - **Bobbin strip is only slightly wide:** The thread is slightly over-tight. Loosen using the lower tensioning knob for that thread.
7. **Notes: *Make big adjustments.*** When tightening or loosening, make several full turns in either direction (turning the knob just a few clicks in either direction will not make any difference in tension.) ***Then, re-pull the thread after adjusting*** to let the new tension setting "set up" through the tensioners and guides.
8. **Maintain a balance between the 2 tension knobs.** Do not over-tighten one, leaving the other too loose. The lower knob should not be tightened to the point that its wheel cannot turn. Generally, neither knob should be set so tightly that the mounting post protrudes above the knob center.

