



Training:

# HAPPY HCD2-1501 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.

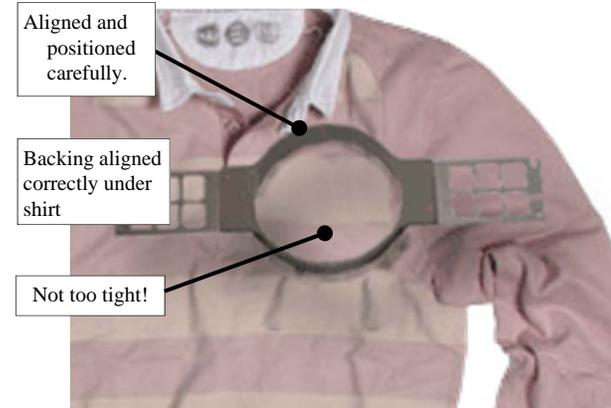
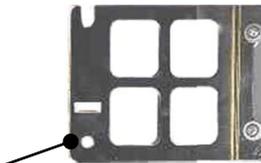
- 1. Hooping Basics** **2**
  - Thread check: Upper and Bobbin thread
  - Design check: color sequence, size, position, selected hoop
  - Garment: hooping and loading onto the machine
  - Final precaution: trace, checking clearance
  - Sewing: Setting speed, what to check during sewing
  
- 2. Sewing Checklist** **3**
  - A condensed 1-page checklist for sewing.
  
- 3. Upper Tension Test – Once you know how to sew, test your upper tension.** **4**
  - About tension
  - The test design and what it does
  - Sewing the design

# Hooping Garments

## – Hooping

Refer to the image of the Needle (color setup) screen shown on the right:

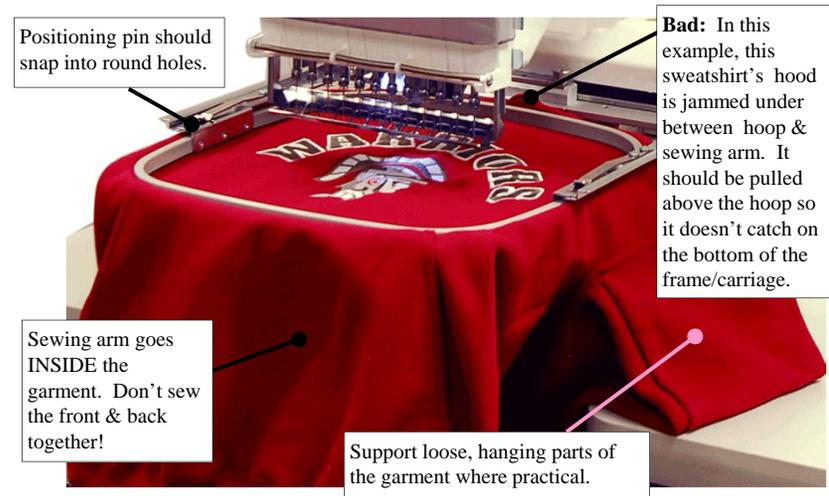
- **Hoop:** Use the smallest that fits the design size.
- **Backing/Stabilizer:** Choose the right type. Should be large enough to overlap edges of hoop under the garment.
- **Alignment and position:** If the hoop isn't aligned on the garment, it won't sew straight!
- **Round holes at bottom:** Make sure hoop is on the shirt so the round holes are towards the operator. Opposite end is towards machine.
- **Tight but not too tight!** Garment and backing should have no slack or wrinkles inside hoop. Adjustment screw tightened enough to hold garment in hoop while sewing, but no more.



## – Loading onto the Machine

Referencing the diagram on the right,

- **Positioning pins on arm** must snap into round holes on end of hoop to prevent unhooping during sewing.
- **Sewing arm goes INSIDE the garment, not UNDER,** or machine will sew front and back of garment together!
- **Loose items tucked out of the way.** (sleeves, straps, etc)
- **Heavy items supported where possible** to prevent item from falling out of hoop. Sleeves, and body can rest on table or chair underneath or to the side of machine if needed. Reinforce hoop with clamps or tape if needed.





# Sewing Checklist

## *Prep Phase*

### 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** amount and tension. (Oil hook as needed before reinserting bobbin)

### HOOP THE GARMENT

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.

### DESIGN SETUP

1. **Load design from USB stick:** -> Main menu -> Read -> Stick icon -> Select design to load ->, press HOME to return to drive screen.
2. **Set Colors** – press needle icon -> set the colors, press HOME to return to drive screen.
3. **Check hoop fit and sewing position:** If not satisfied with the hoop picture in the drive screen, press the green FRAME MOVE button, change hoop and/or move design position.

## *Sewing Phase*

### SEWING

1. **Press START** to begin sewing.
2. **Adjust speed** as needed. Higher speeds risk noise, vibration, thread breaks
3. **Watch the entire sewout** – if the first copy doesn't sew well, the next ones may not either. Make any corrections as needed before sewing the next copy.
4. **Finishing:** cut or tear excess backing, make any minor repairs/fold/pack. Re-hoop with next blank garment while machine is sewing.

### RECOVERING FROM ERRORS/INTERRUPTIONS

1. **If thread break or other interruption,** fix the problem, then back up as many stitches as needed before pressing START again.
2. **Normal Stop/Shutdown:** machine will remember the last position and register correctly when resuming.
3. **Emergency stop or visible registration shift in mid-sew:** adjust position with arrow keys.
4. **Position Function:** lets you jump to any point in the design and resume sewing from there. (MENU-> POSITION)

## 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 "hstest15" into your control panel. You can download this from [www.happyemb.com](http://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 ,3 ....etc to 15
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.

