Training:

HAPPY HCD-1501 Operations & Maintenance

The cap system for the HCD-1501 can produce quality embroidery on finished ballcaps, covering a max area of 80mm (over 3inches) tall x 360mm (14.1 inches) wide. The system allows swapping from normal (tubular) sewing to the cap sewing system quickly and without any tools.

Chapter 5: Sewing on Finished Caps

Updated April 15, 2010. Current for firmware version 1.24.

Cap Sewing with HCD-1501

Important physical differences between caps and other garments with respect to embroidery.

- **Understanding the cap itself**

  1. **Available sewing area:** (for low profile hats especially) Even though your machine allows a 80mm (3") high area, the true usable sewing height depends on the cap itself. Generally the bottom 2/3 of the cap's riser is sewable, since the upper 1/3 curves significantly away from the plane of the sewing (needle) plate (see photo on the right). The width of the sewing area is 14.1" (so, 7" from the center seam to either side) *Be sure that the design is sized for your cap's sewing area based on these guidelines.*

  2. **Construction:** The quality of the hat can directly affect the quality of the embroidery and your technique. If you're sewing on a "constructed" hat, the inside of the front 2 panels will have a reinforced inner lining called "buckram", shown on the right. Additionally, better quality material (heavier or more "solid") provides a stable sewing surface that shifts less as the hat sews, resulting in better-quality stitching. (Regardless of hat quality, however, always use at least a single sheet of cutaway backing to maximize the chances of a quality sew-out).

Cap Kit Parts

Install Cap Driver

Hooping Caps

Key Techniques

area not sewable

sewable area

Supporting "buckram" on inside of the front 2 panels

View of cap from underneath

Cap Sewing with HAPPY's HCD-1501

To best ensure a quality sewout, it's best that the design is digitized specifically for sewing on caps. Check any design to make sure they meet the criteria on this page:

Cap Kit Parts

Install Cap Driver

Hooping Caps

Key Techniques

- **Digitizing for caps: center-out:**

    Cap digitizing doesn't require any tricky settings in digitizing – light underlay, standard density and standard pull compensation settings should result in good-quality fills and satins. However, the **sequence** in which everything sews is very important:

    1. **Every part of the design must finish completely before the next area sews.** For example, on lettering with a different-colored border, each letter must sew first the interior color, then its satin border before the next letter is sewn (vs. normal digitizing where all of 1 color may normally finish before sewing the next color). This takes more time to sew because of the additional color changes, but avoids registration problems.

    2. **Every part of the design must sew from the center towards the sides.** In the same example of lettering, any letters to the right of the center seam should sew from the center to the right. Any remaining letters to the left of the center seam should sew from the center towards the left.

- **Digitizing for stretchy or unconstructed caps**

    There is an increasing popularity in stretchy material (Flexfit) hats and non-constructed hats. For these types, try these techniques:

    1. **Digitize a running stitch that follows the complete outline of the design.** Sequence it to sew first so it's covered up by the final stitching, and make sure that it sews just inside the edges of any fills or satin stitching.

    2. **Don't forget backing!** I The purpose of the running stitch in step 1 is to anchor the cap to the backing so it doesn't shift. So basically, you're depending on the stiffness of the backing, which will not shift.

Cap Sewing with HAPPY's HCD-1501

Shown below are the parts of the cap sewing kit that come with your HCD-1501 machine.
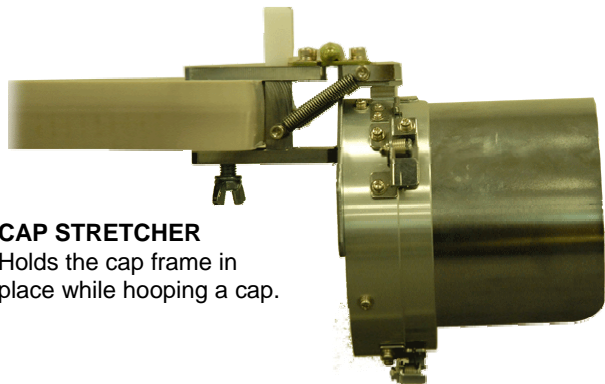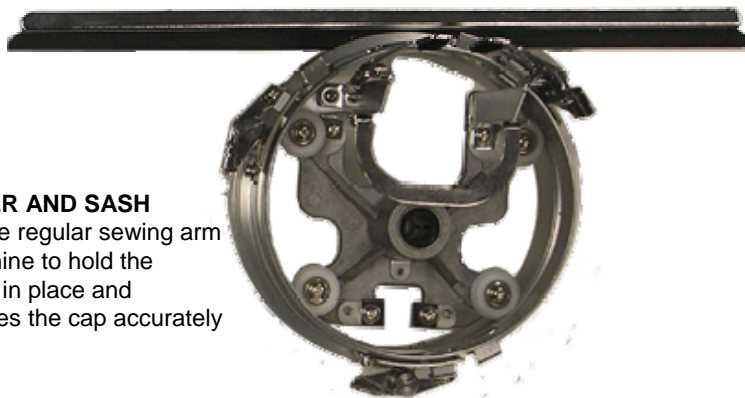
Cap Kit Parts

Install Cap Driver

Hooping Caps
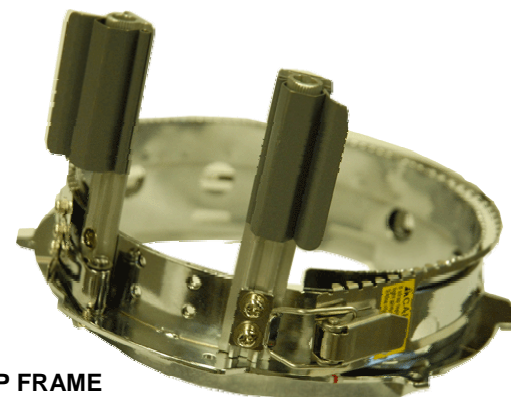
Key Techniques

CAP DRIVER AND SASH
Replaces the regular sewing arm on the machine to hold the hooped cap in place and rotates/moves the cap accurately as it sews.

2 each WIDE CAP FRAME
Allows a max sewing field of 3in H x 14.1 in W, allowing front and sides to be sewn in 1 hooping.

CAP STRETCHER
Holds the cap frame in place while hooping a cap.
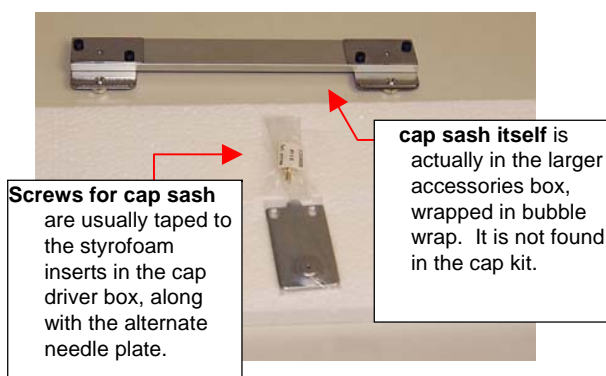
Cap Sewing with HAPPY's HCD-1501

One-Time Assembly Step: Install the cap sash onto the cap driver. The cap driver that arrives in your machine's crate requires this one-time partial assembly step before use: it must be attached to a separate metal bar, called the cap sash, to allow it to attach to the machine's pantograph in the same place where the tubular arms attach.
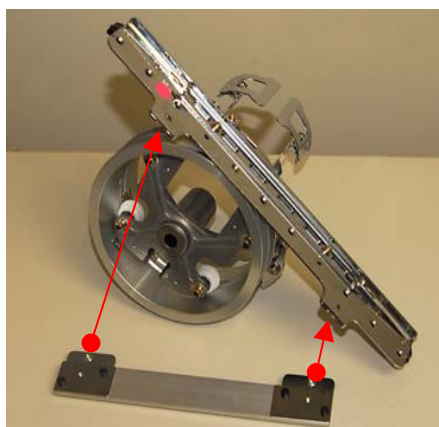
Cap Kit Parts

Install Cap Driver

Hooping Caps

Screws for cap sash are usually taped to the styrofoam inserts in the cap driver box, along with the alternate needle plate.

cap sash itself is actually in the larger accessories box, wrapped in bubble wrap. It is not found in the cap kit.

1. **Locate the cap sash and the 2 screws** used to attach it to the cap driver.

2. **Orient the cap sash with the cap driver as shown.**   The two tabs of the cap sash mate underneath the 2 corresponding tabs on the back of the cap driver at the points shown by the red arrows. Join them with the two 3mm hex screws provided.
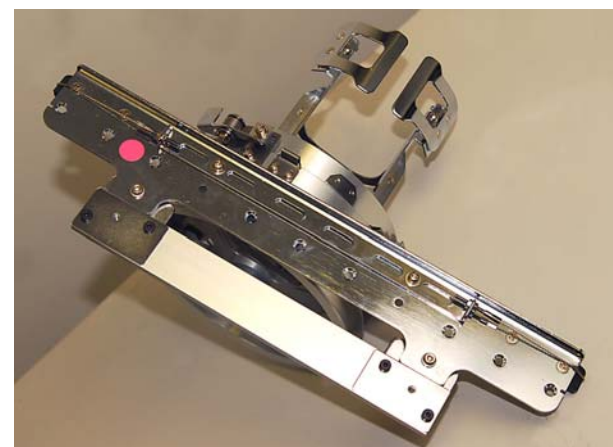
3. **Cap sash is shown, properly connected** to the cap driver in the illustration above.
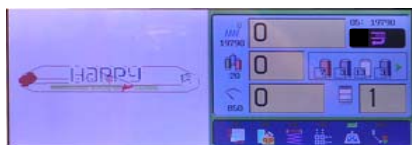
Cap Sewing with HAPPY's HCD-1501

Preparing for Cap Sewing: Follow the steps on these pages to install the cap driver device, which changes the machine from normal tubular sewing mode to being ready to sew caps.
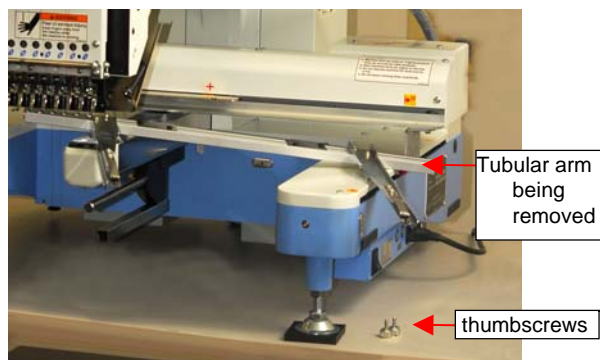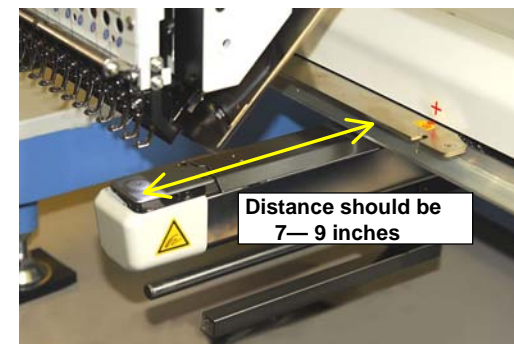
Cap Kit Parts

Install Cap Driver

Hooping Caps

1. **Power on the machine and go to the main (drive) screen.** This is necessary before continuing.

Tubular arm being removed

thumbscrews

2. **Remove the tubular arm** by loosening and removing the 2 thumbscrews holding it in place on the pantograph.

Distance should be 7— 9 inches

3. **Move the X-carriage forward** so that the pantograph is about 8 inches back from the forward edge of the rotary hook door.

4. **Slide the cap driver onto the machine** and attach to the pantograph in Use the same 2 thumbscrews and tighten in place. Take care to rotate the inner guide assembly so that the square shaped opening allows the rotary hook arm to pass through it, as shown.

Black pins should slide into these slots.

Thumbscrew attaches at this hole.
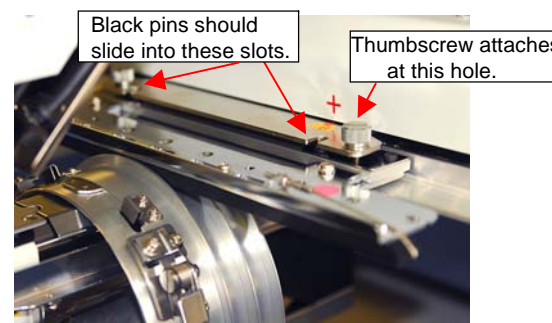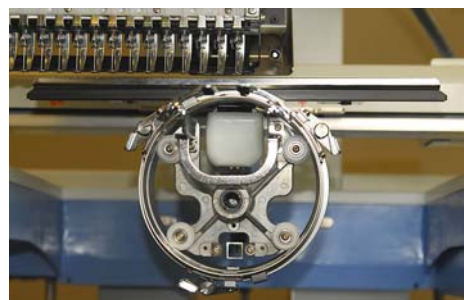
5. **Slide the cap driver back along the hook shaft until the sash mates with the pantograph.** Attach with the 2 thumbscrews.
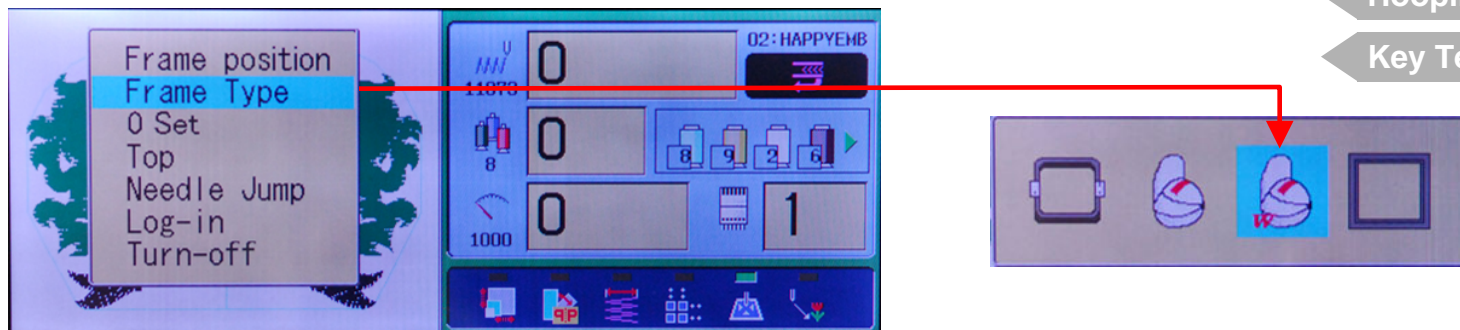
Cap Sewing with HAPPY's HCD-1501

Follow the steps on these pages to change the machine from normal tubular sewing mode to set up for cap sewing.

Cap Kit Parts

Install Cap Driver

Hooping Caps

Key Techniques

5. Change the machine into cap mode by pressing FUNC, then choosing Frame Type. In the icon menu that appears, choose the cap symbol with the "w" (for the wide cap frame that comes standard with your HCD-1501) and press SET. You should see the cap mode indicator as shown above.

6. Re-center the pantograph by pressing FUNC, then choosing FRAME POSITION, then this symbol here:
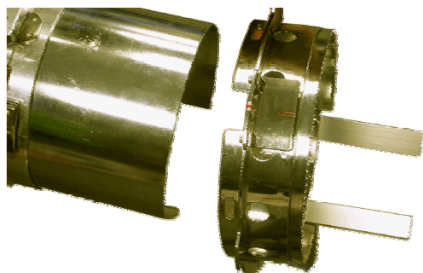
Watch the cap driver center itself and ensure that the centering movement doesn't exceed the cap driver's maximum limit of travel.

Cap Sewing with HAPPY's HCD-1501

Follow the steps on these pages to hoop a cap on the wide cap frame.

1. **Secure the cap stretcher to the edge of a thick enough table surface** to accommodate the clamp screw. Tighten with the included wing nut.
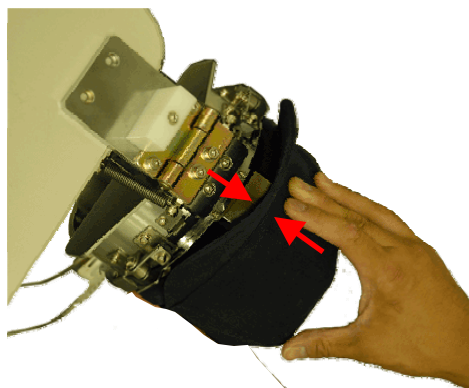
1. Mount the cap frame on the cap stretcher. Be sure the pegs from the clamps on the stretcher meet the holes on the cap frame.
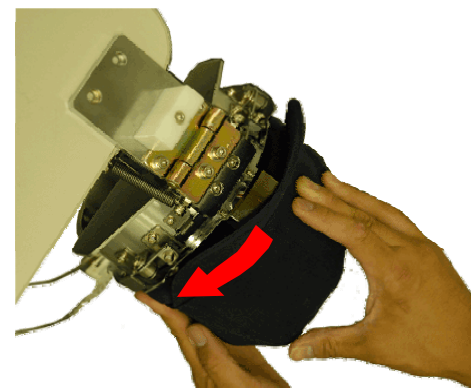
2. Open the strap on the cap frame and place the cap onto the cap frame. Be sure to also remove the clips at the rear.
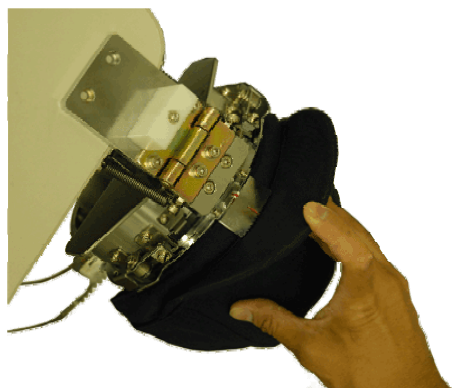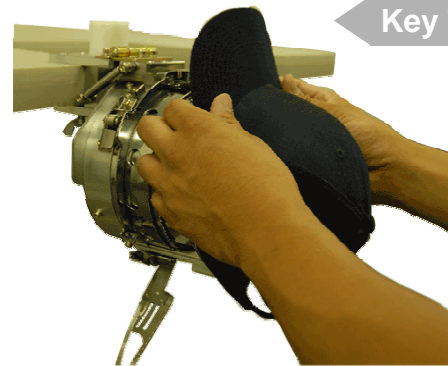
4. Ensure the sweat band slides under the centering tab.

5. Ensure the cap's center seam is aligned exactly with the red center mark.

6. Hold the cap at the center seam and with your left hand, smooth any left-side wrinkles or slack away from the center.

Cap Kit Parts

Install Cap Driver

Hooping Caps

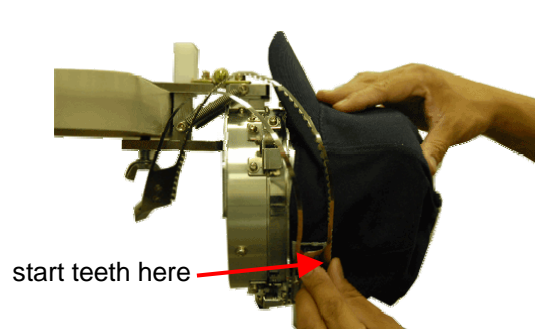Key Techniques

Cap Sewing with HAPPY's HCD-1501

Follow the steps on these pages to hoop a cap on the wide cap frame.

Cap Kit Parts

Install Cap Driver

Hooping Caps

Key Techniques

start teeth here →

7. Start placing the strap along the left side of the cap. Ensure the teeth fall directly over the seam at all points as you continue placing the strap clockwise around the cap.

8. Make sure the teeth also grip the seam where the cap's bill meets the riser.

9. While keeping the strap's teeth tightly in place, check center alignment once more before fastening the buckle on the right side.

10. Fasten buckle.

11. Smooth any remaining slack around the sides, pushing towards the back of the cap and apply the 2 clips.