Training:

HAPPY HCS-1201 Voyager Operations & Maintenance

Updated for Firmware Version 1.16

The optional cap system for HCS-1201 Voyager machine can produce quality embroidery on finished ballcaps, covering a max area of 67mm (about 2.7 inches) tall x 290mm (11.4 inches) wide. And, swapping from normal tubular sewing to the cap sewing system is completely tool-less and can be done quickly.

Chapter 5: Sewing on Finished Caps

Cap Sewing with HCS-1201 Voyager

The optional cap system available with the HCS-1201 Voyager machine produces excellent quality sewing on finished ballcaps, and is able to cover a maximum sewing area of 76mm (about 3 inches) tall (depending on the available height on the cap itself) by 290mm (11.4 inches) wide. Additionally, swapping from normal tubular sewing to the cap sewing system is completely tool-less and can be done quickly. In this section, we'll discuss the following essential steps for proper cap sewing:

- **How Caps are Different from Other Types of Garments** with respect to embroidery
- **Digitizing for Caps:** Different from digitizing for shirts, jackets, etc.
- **Parts of the Cap Sewing System:** Familiarize yourself with the different parts of the cap sewing kit and their purpose

- **Switching from the tubular system to the cap system:** Learn the proper steps for cap driver installation

- **Hooping caps:** There are 2 types of cap hoops available – the quick, easy semi-wide and the more-versatile wide cap frame. We'll discuss how to mount caps on both types of hoops.

Cap Sewing with HCS-1201 Voyager

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

Cap Kit Parts
Install Cap Driver
Hooping Caps
Key Techniques

- **Understanding the cap itself**

1. **Available sewing area:** (for low profile hats especially) Even though your machine allows a 67mm (2.7") 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 11.4" (so, 5.7" from the center seam to either side) if you're sewing with the wide cap frame shown on page 5, and about 7" (3.5" from center seam to either side) for the standard cap frame. *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).

View of cap from underneath

Cap Sewing with HCS-1201 Voyager

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:

- **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:

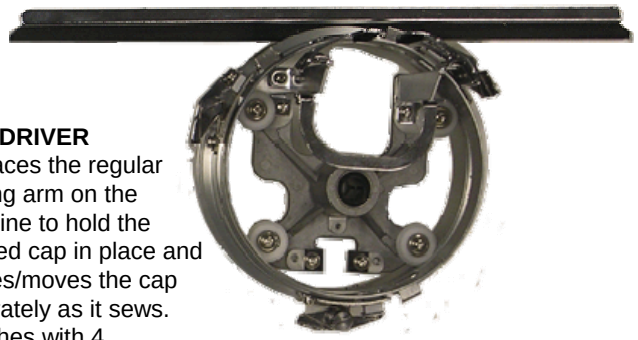
  1. **Digitize a running stitch that follows the complete outline of the design.** Sequence it to sew first so it's covered up by the final stitching, and make sure that it sews just inside the edges of any fills or satin stitching.

  2. **Don't skimp on 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 or "non-shifty-ness" of the backing. Don't be afraid to try a heavier cutaway where you'd normally use tear-away. If that doesn't work, try 2 layers.

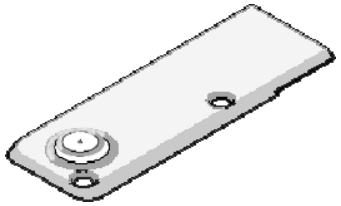
Cap Sewing with HCS-1201 Voyager

Shown below are the parts of the cap sewing kit and their purpose.

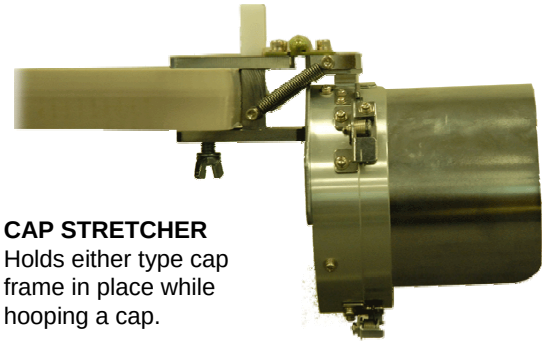
Cap Kit Parts
Install Cap Driver
Hooping Caps
Key Techniques



CAP DRIVER
Replaces the regular sewing arm on the machine to hold the hooped cap in place and rotates/moves the cap accurately as it sews. Attaches with 4 thumbscrews – 2 at the top and 2 additional underneath.



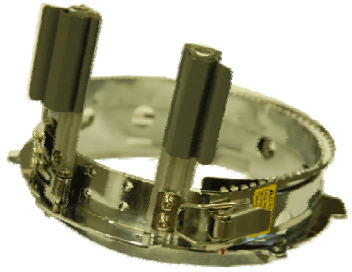
CAP NEEDLE PLATE
Replaces the normal needle plate for more accurate sewing on extended (I.e. all-day or all-week) runs on hats.



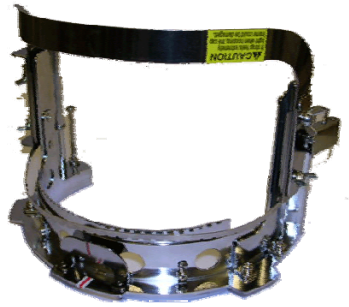
CAP STRETCHER
Holds either type cap frame in place while hooping a cap.

The 2 Types of Cap Frames

WIDE CAP FRAME
Allows a max sewing field of 3in H x 11.4 in W, allowing front and sides to be sewn in 1 hooping.



STANDARD CAP FRAME
Allows a max sewing field of 7 in wide x 3 in tall. Faster and simpler

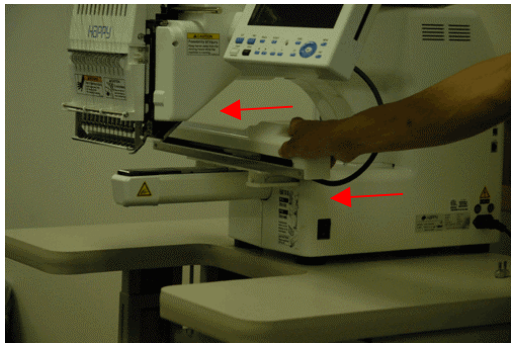


Cap Sewing with HCS-1201 Voyager

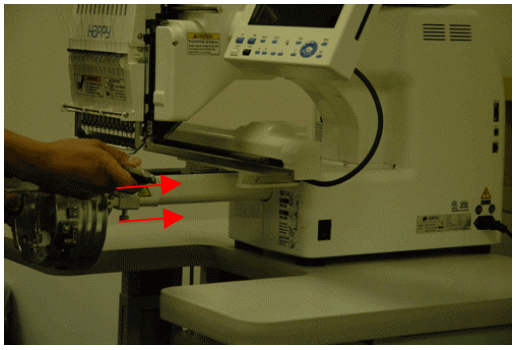
Preparing for Cap Sewing: Follow the steps on these pages to install the cap driver, which is detected by the machine when powered on, switching the machine automatically into cap mode.

1. **Power off the machine.** This is necessary before continuing.

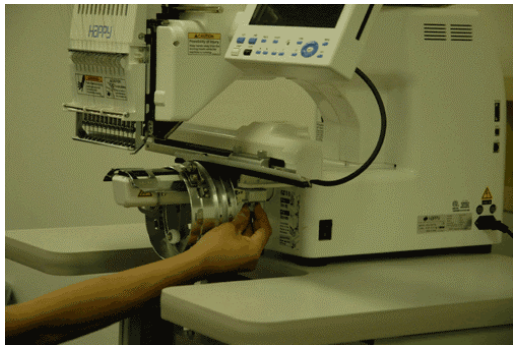
2. **Remove the tubular arm** by loosening and removing the thumbscrews holding it in place on the pantograph.



3. **Move the X-carriage forward** by hand so that its back edge sits approximately 2” forward of the forward edge of the machine’s body.



4. **Slide the cap driver onto the machine** and attach to the pantograph in Use the same 2 thumbscrews and tighten so they are snug, but not tight.



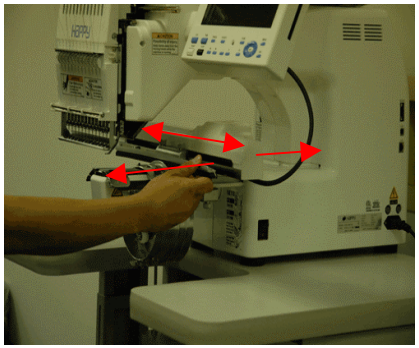
5. **Turn the lower thumbscrews** on the underside of the cap driver until they are snug (but not tight).

Cap Sewing with HCS-1201 Voyager

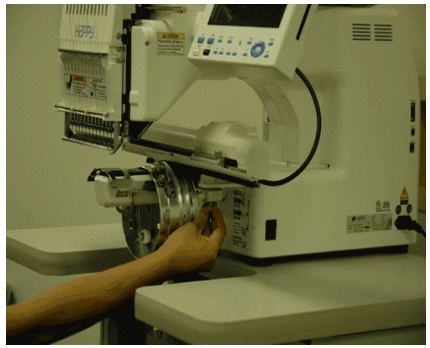
Cap Kit Parts
Install Cap Driver
Hooping Caps
Key Techniques

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

6. **Manually check the movement of the X-carriage** and the left-right movement of the cap driver to ensure smooth movement. The carriage should feel heavier to move than with the normal tubular arm, but not drag against any surface.



7. **Tighten all 4 thumbscrews** finger-tight. There should be no need to tighten them with tools.



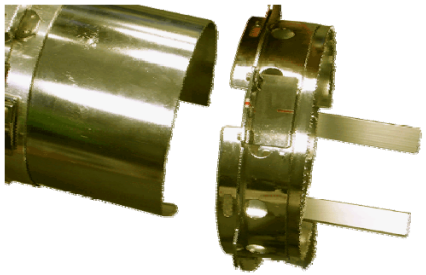
8. **Power on the machine.** If the machine successfully detects the cap driver, you'll see the cap symbol appear here.

   A "W" will indicate that it thinks the wide cap frame will be used. You can change this by pressing FUNC if need be. Otherwise, Press SET to continue.

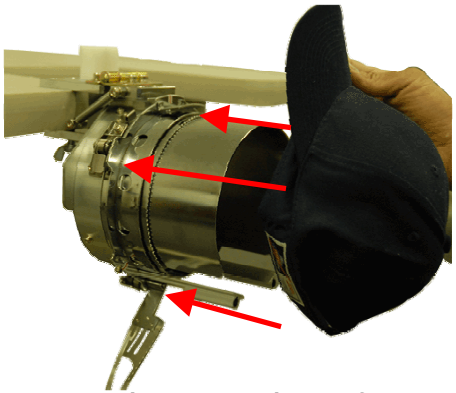
Cap Sewing with HCS-1201 Voyager

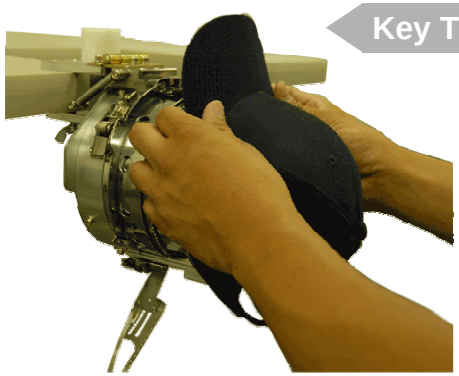
Follow the steps on these pages to hoop a cap using the wide cap frame.

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.

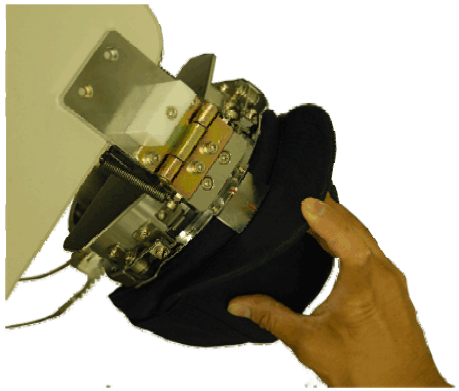


1. Mount the cap frame on the cap stretcher. Be sure the pegs from the clamps on the stretcher meet the holes on the cap frame.

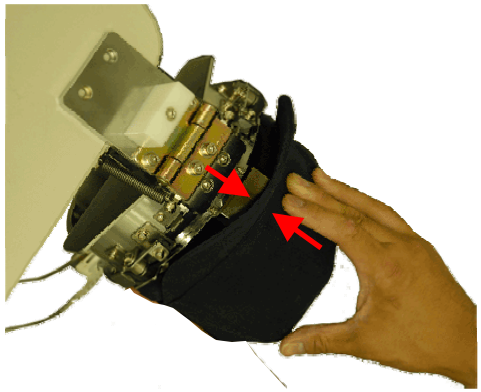




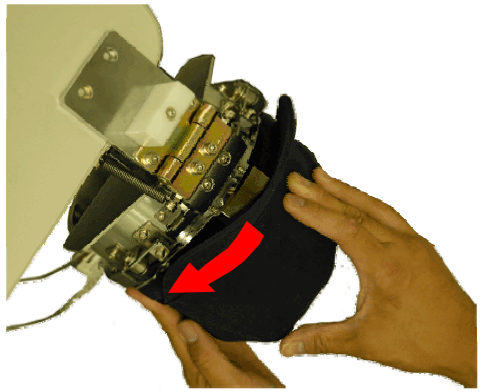
2. Open the strap on the cap frame and place the cap onto the cap frame. Be sure to also remove the clips at the rear.



4. Ensure the sweat band slides under the centering tab.



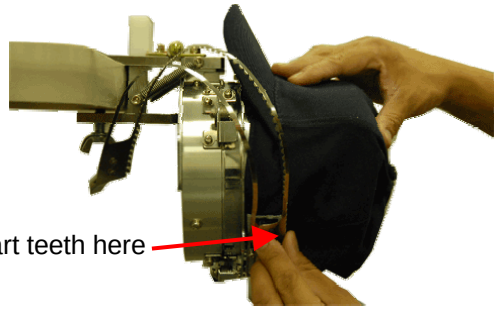
5. Ensure the cap's center seam is aligned exactly with the red center mark.

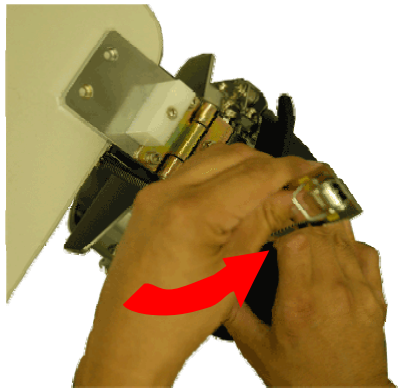


6. Hold the cap at the center seam and with your left hand, smooth any left-side wrinkles or slack away from the center.

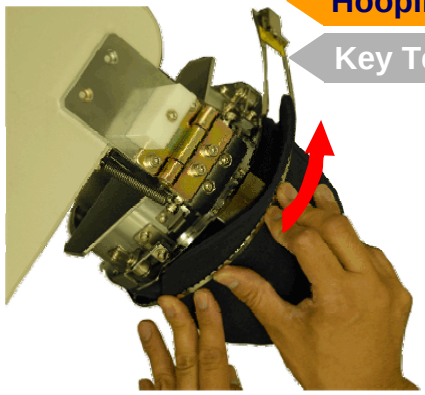
Cap Sewing with HCS-1201 Voyager

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

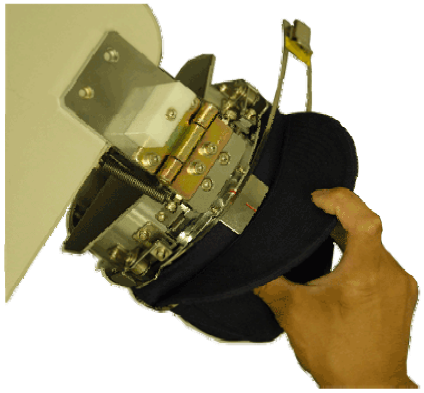




7. Start placing the strap along the left side of the cap. Ensure the teeth fall directly over the seam at all points as you continue placing the strap clockwise around the cap.



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.