

Lesson Objective:

To experience and learn more about embroidering on knit fabrics. Learn about the relationships between several different elements which will affect the end result. We'll also learn about a decorative serged edge finishing technique.

Lesson Machine:

Any BERNINA[®] embroidery machine
Any BERNINA[®] Serger

Lesson Outcome:

To create a T-shirt and experience embroidering on knit fabrics. Also create a decorative finished edge using a serger.

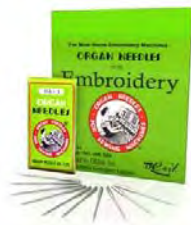


Successfully embroidering on knits requires a suitable relationship between all elements affecting the embroidery. We will look at the stabilizer choices, hooping options and design density to determine the correct relationship when embroidering on these stretchy fabrics.



We need to begin with some VERY important points that I will refer to as ABSOLUTES—

- * **ABSOLUTE #1:**
No matter which hooping method is selected, always TEST the design with the fabric and stabilizer.
- * **ABSOLUTE #2:**
ALWAYS use a cut-away stabilizer when sewing on knits. The stabilizer will keep the embroidery nice during the stitching process and during the wearing (*and laundering*) of the garment. There are several choices when selecting a cut-away stabilizer, which can be dictated by design density and preference for wearing. After the embroidery is completed, the excess stabilizer will be trimmed away.



Supplies needed:

- * My Label T-shirt pattern or purchased T-shirt
- * Knit fabric per pattern (if not using purchased T-shirt)
- * Studio BERNINA[®] Exclusive Creative Genes Design collection
- * V.5 BERNINA[®] DesignerPlus Embroidery Software
- * Mega-Hoop (*if your embroidery machine has this capability*)
- * 24" x 24" Sew Steady Table with embroidery cutout (18" x 24" also available) (*clear Plexi-glass table shown in picture to the left*)
- * OESD PolyMesh Cut-Away Stabilizer (*Black was used in sample*)
- * Organ Ballpoint needles, size 80/12
- * Isacord Thread #4332
- * 30 wt Mettler Cotton Embroidery Thread, color 669
- * Bobbin Thread
- * HRFive Temporary spray adhesive
- * Razzle Dazzle Thread by Superior Threads, Color 268 (Aqua)

Stabilizer Choices—

When embroidering on knit fabrics, it is VERY important to choose the proper type and weight of cut-away stabilizer. Let's consider some of the options.

- * OESD Heavyweight Cut-Away is a versatile product that can be used on knits and wovens. Use it on sweatshirts, fleece, and heavy knits as well as with dense designs for any fabric type. This stabilizer is available in black and white in widths from 7.5" - 14" by 12.5 yard rolls. Precut sheets are also available. (Refer to www.embroideryonline.com for more detailed information)
- * OESD Xtra Heavyweight Cut-Away should be used if a little more stabilization is needed. Instead of using 2 layers of the Heavyweight Cut-Away, use 1 layer of the Xtra Heavyweight Cut-Away. It is especially successful in the embroidering of sweatshirts and similar fabrics. This stabilizer is available in white in 7.5" and 11" wide by 12.5 yard rolls as well as precut sheets. (Refer to www.embroideryonline.com for more detailed information)



Hoop Burn



Stabilizer Choices—(cont'd)

- * OESD PolyMesh Cut-Away is one of the most versatile stabilizers and can be used on almost anything. The mesh construction provides a very stable but soft finish for embroidery. It is very good on light colors to prevent shadows from showing through to the front where the stabilizer has been trimmed away. PolyMesh can be used in multiple layers to hold heavier stitch count embroideries. Available in white, black and beige in the following sizes: White: 8" x 8" (50 pieces), 11" x 14" (40 pieces) and 14" x 18" (35 pieces) on a roll (sheets are perforated); the black and beige come on non-perforated 10 yard rolls in 8", 11" and 14" widths. (Refer to www.embroideryonline.com for more detailed information)
- * OESD Fusible PolyMesh Cut-Away helps control the stretch of the fabric during the hooping and embroidery process. It has all the advantages of normal PolyMesh with the added benefit of a light-weight fusible activated by a warm iron. Excess can be removed by reheating the stabilizer and trimming away normally. Only available in white in 8", 11", 14" and 18" wide 10 yard rolls. (Refer to www.embroideryonline.com for more detailed information)

Susan's Tip: When working with non-fusible cut-away stabilizer products, it is always a good idea to "steam" the stabilizer first before applying it to the back of your fabric to begin the hooping process. If there is any residual shrinkage in the product, the steaming process will relax the stabilizer before using it.

To Hoop or Not to Hoop—the Options

Hooping the fabric with the stabilizer will always provide the most stable environment for embroidery. Select the cut-away stabilizer and spray with a temporary adhesive such as HRFive. This holds the fabric to the stabilizer making it easier to hoop and improves performance during the embroidery process. It is also VERY important to loosen the hoop screws to accommodate the fabric and stabilizer widths. **Avoid, at all costs, forcing the inner hoop into the outer hoop.** Forcing the hoops together injures the fabric by glazing the fabric threads producing a permanent shine where the hoop has been. This shine is referred to as hoop burn and it is impossible to restore the fabric to its original state. Hoop burn can happen with both knit and woven fabrics. (Refer to the picture on the left)



Hoop Basting Outline

To Hoop or Not to Hoop—the Options (cont'd)

The inner hoop should set inside the outer without stress and the hooped fabric and stabilizer should be taut, but not drum tight and it should have no play inside the hoop. Repeat the hooping process if either of these conditions exist.

If the embroidery project can not or is not to be hooped, the following the guidelines below will increase the chances of successful embroidery—

- * Hoop the stabilizer and spray the hooped stabilizer with temporary spray adhesive such as HRFive. Now, position and smooth your fashion fabric on top of the stabilizer.
- * Download the appropriate Hoop Basting outlines for your machine from the BERNINA Website (www.bernausa.com > What's New > Free Downloads > Free Embroidery Hoop Basting Designs) and send to the embroidery machine.
- * As you prepare to embroider, use on-screen editing to combine the basting outline with the design. When doing this process, remember that the basting outline for the hoop needs to be the first step of the entire design, while the actual design to be embroidered will come second in the stitching order for the basting outline to have an effect.

Stabilizer Checks—

- * Look at the underside of the hoop to verify that the stabilizer is not wrinkled or that the fabric is unintentionally doubled.
- * **DO NOT** patch stabilizer; patched stabilizer is no longer stable and is not of any value.
- * Stabilizer **MUST** extend to all edges of the hoop

Design Density—

It is VERY important to remember that not all designs are intended for all fabrics.

- * Select medium to light density designs for knits that are medium to lightweight; denser designs can be embroidered on heavier knits – but remember, all knits stretch.
- * Lightweight designs have more open space (unembroidered space) than what is actually stitched in the design.
- * Mid-weight designs have an even amount of open space and stitched areas.
- * Dense designs have more stitched area than open space in the design.

Test Sew-out



Do a test Sew-out!

Create the same environment to test with that is intended for the final embroidery. Keep a log of your tests and use it as a reference as you embroider on knits in the future.

Knit Compatibility Test Table

FABRIC	Design Stitch Count	Stabilizer / # of layers	Result
Black Med. Knit	29,475	Black PolyMesh / 2	OK

Optional: One further test to do to verify the stabilizer/fabric/design compatibility is to wash the sample and judge how it looks after laundering. If the design remains flat and supported, compatibility is good, but if the design cups into the fabric, then not enough stabilizer was used, and another test should be conducted.

One More Thing....

If the embroidered design is sinking into the knit due to the sponginess of the fabric, lay a washable stabilizer, such as AquaFilm topping, on top of the fabric prior to embroidery. AquaFilm topping is a light-weight stabilizer and does not need to be hooped. It should cover the area to be embroidered and can be held in place by dampening the corners with your finger and pressing it to the embroidery fabric. To remove the AquaFilm after the embroidery is completed, gently hold the stitched area and tear it away – it will tear easily in satin stitched areas or heavy filled in areas where the needle has perforated the film. With designs that have straight stitch lines, it may be necessary to wash, spray or dampen with a swab to remove the film. You can also lay a towel over the top and gently steam it away. AquaFilm topping is clear and comes in 4" x 20 yard and 8" x 10 yard rolls.

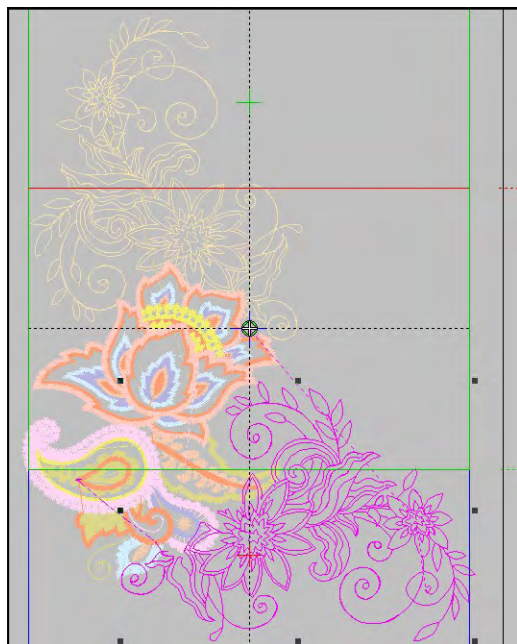
Susan's Tip:

If the presser foot sticks to the film during the embroidery process, use the presser foot pressure knob on the left side of the machine to slightly raise the height of the foot by reducing the presser foot pressure.



Design BE10101.ART

STEP 12



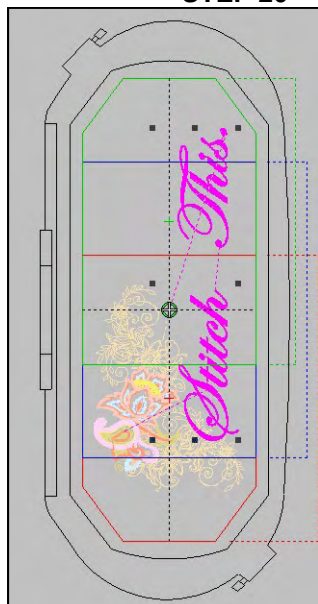
Creating the Project—

Create the 'Stitch This' Design

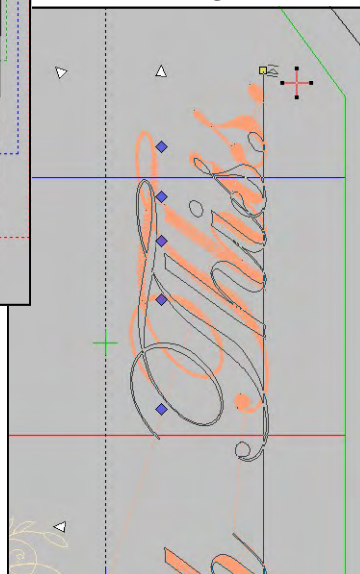
1. Open the BERNINA® DesignerPlus Embroidery Software
2. From the Studio BERNINA® Creative Genes Design collection, open BE10101.ART
3. Right click on the **Show Hoop** icon; select artista 400 x 150 MEGA—Auto Split Machines
4. If working in V.5 software; **Select** the design; **Ungroup**.
5. Using Color Film; **Select** Color #1; **Group**. This will be referred to as the Floral Vine Group.
6. **Select** Colors #2-10; **Group**. Do this by selecting Color #2, hold down the <Shift> key and then select Color #10. This will be referred to as the Paisley Group.
7. **Select** both design parts and select **Mirror Horizontal**.
8. From Color Film, **Select** Color #1 (Floral Vine Group) and **Copy**, then **Paste**.
9. Left click on the **Rotate 45 deg CCW / CW** icon 1x to rotate Counter Clockwise.
10. **Mirror Horizontal** and then **Mirror Vertical**.
11. While still selected, open **Object Properties > General** tab and in the **Rotate by:** box, enter 17.62; select **OK**.
12. Click and drag the motif into position forming a corner with the original design.
13. Click and drag the last color chip in Color Film to the second position This will automatically group the 2 like colors of the Floral Vine group together.



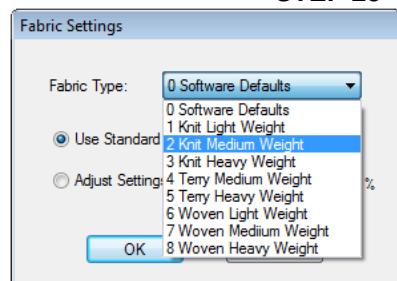
STEP 20



STEP 21-22



STEP 23



Creating the Project—

Create the 'Stitch This' Design (cont'd)



14. **Select** the entire design and **Group**.

15. Right click to open **Object Properties** > General tab; change the width to 131.10mm and note the percentage (%) of change. Type the same percentage (%) of change into the appropriate height box. Click on **OK**.

16. Click off of the motif to deselect it.



17. Right click on the **Lettering / Fill Values** icon to open the **Lettering Object Properties** box and select True Type Font Edwardian Script ITC.

18. Type 'Stitch This' in the dialog box. Change the height to 64mm, then click **OK**.

19. Left click on the screen to make the text appear.



20. Left click on the **Rotate 45 deg CCW / CW** icon 2x to rotate the lettering 90 degrees. Position the text so that it intersects some of the vines from the Creative Genes design you created.



21. **Select** the text; select the **Reshape Object** tool to adjust the spacing between the two words.

22. Hold down the <Ctrl> key and **Select** all of the diamonds for the individual letters in the word 'THIS'; move the entire word at one time. (Final height of the design should be approximately 298mm).

23. To adjust the pull compensation for this design as it will be sewn on a knit fabric, select **Settings** > **Fabric Settings**; now select the weight of the knit the design will be stitched on. Click on **OK**

24. **Save** the final motif and send the design to the machine to embroider.

Shows Hoop Basting Outline



STEP 11d



STEP 11




Creating the Project—

The 'Stitch This' T-shirt Directions

1. Create the 'Stitch This' embroidery design as outlined in the previous pages.
2. Surround the machine with the Embroidery Sew Steady Table to support the Mega-Hoop during the embroidery process.
3. Insert a size 80/12 Ballpoint Organ Needle.
4. Load the Mega-Hoop hoop basting outline in the machine and using on-screen editing, combine it with the 'Stitch This' embroidery motif.
5. Hoop 2 layers of PolyMesh Cut-Away stabilizer (black) and spray with HRFive temporary spray adhesive.
6. Position the knit fabric on the stabilizer and attach the hoop to the machine
7. Thread the machine with Isacord thread and stitch the hoop basting outline first.
8. Change to 30wt cotton thread to stitch the first color of the "Stitch This" embroidery.

Susan's Tip: Substitute a heavier weight embroidery thread so that the design is more pronounced for the straight stitch embroidery (color 1 of the design). Select a 30-wt thread similar in color to the Isacord.

9. Re-thread the machine with Isacord thread and select the **Single-Multi Color Motif** icon  (Monochromatic mode) and complete the rest of the embroidery with Isacord.
10. If you are making the T-shirt, cut the pattern and assemble according to the My Label instructions. Sample was made using the T-shirt pattern w/short sleeve option from the My Label software. If using a purchased Tee, sew up any area that was unstitched.
11. To create the "Lettuce" edge at the bottom of the sleeves and hem—
 - a. Thread the serger for a 2-thread rolled hem using Razzle Dazzle (color #268) in the lower looper and Isacord (color #4332) in the right needle.
 - b. Serge the edges.
 - c. To achieve a more pronounced "lettuce" effect, stretch the knit slightly and/or adjust the differential feet to 0.7.
 - d. To facilitate starting and stopping, cut into the hem about 3/8" and about 1" long (see picture).
 - e. Use a seam sealant, such as Fray Block, on the ends. Apply the sealant, let dry and then cut the thread tails.

T-Shirt from My Label



To find out more about the My Label software, go to www.berninamylabel.com

Conclusion—

Some Final thoughts from *Susan*—

- * Embroidering **responsibly** will yield successful embroidery results.
- * Remember, **not all** designs are meant for **all fabrics**.
- * **Select appropriate designs** for the fabric (very dense designs will never look nice on the thinnest of fabrics, regardless of stabilizer).
- * **Stabilize** according to the design density and the fabric weight.
- * **Hooping** will further stabilize the embroidery and gives much better results than choosing to not hoop.
- * And finally **ALWAYS do a test sew out.**
- * You can become the master of successful embroidery!

