



“Puff or 3D Embroidery Simplified!”

Learn The Simple Step by Step Process For Creating Puff Embroidery That Sews Out Great Every Time!

Puff or 3D embroidery is a process that is done with the addition of a piece of foam added that is placed under the embroidery to give it a raised or 3D appearance. It is called 3D Embroidery, Puff Embroidery and sometimes Foam Embroidery. Puff embroidery works best on a cap or may be used for garments such as jackets that are not washed very often. It is not usually recommended for a garment that will be washed frequently or placed into a dryer. It is also not recommended for a garment that will be dry cleaned. This will make the foam crumble during the drying process or the dry cleaning process because of the chemicals that are used.

Creating the Puff Embroidery is a process that is very simple but seems to be a mystery to so many people. If you try it once, you will love it. During this training I will teach you step by step the simple process that I go through to create quality designs on caps with the Puff Embroidery! You will also learn:

- Which type of foam to use
- What other materials are needed
- How to set up your design for Puff Embroidery
- What density to use to get good coverage on your foam
- What pull compensation to use
- The 2 methods of capping off the ends of your letters
- The Step by Step process of applying the foam to the caps
- How to Price for the Foam application

Adding Puff Embroidery to your product line is another way to bring in more profits and your customers will love you for it! It has a much higher perceived value than just plain embroidery.

Which type of foam to use?

There are several foam products on the market but you have to be careful where you purchase it from. They have 2 millimeter, 3 millimeter, and 4 millimeter foam. I use the 3 mm product. I get excellent results from it and it gives me enough loft that I need and my customers have always been very

happy with it. You want to make sure that you purchase it from an embroidery supply distributor, not a craft store. Your foam must be designed for embroidery. This foam is totally different and will react different.

I purchase my foam from SM Cristal in Buffalo, NY. They sell it in single color packages and multi-color packages so that you have a variety of the basic colors to have on hand.

Always try to match the foam color to the thread color. This is not always possible but use the closest color shade that you can. Never use a contrasting color. Sometimes I have used the same color as my cap when I did not have the same foam color as the thread. You will need to experiment with this. Sometimes this will work and sometimes it will not work. There are many variable here.

What other materials are needed?

- **Sharp Needle-preferably 80/12 sharp.** This will create larger holes that will penetrate the foam and make it easy to tearaway. Some people that do a lot of puff embroidery prefer to use a ball point needle. They claim that it makes larger holes and will tear the foam better. You will need to experiment with your foam and machine to see what works best.
- **Embroidery Spray tack,** used only if it does not stay in place. You can also tape down the edges. If you have a multi-head machine, it is much faster to spray the foam with the spray tack than trying to tape down the edges. You cannot expect that the small piece of foam will stay in place as you begin to embroider if you have a multi-head machine. It just does not happen. It very often does on a single head, but not on a multi-head.
- **Heat Gun or Hot Hair Dryer** - This is used in the finishing of the cap to remove all of the small pieces that linger behind. I used a heat gun in my shop but I use a hot hair dryer at home and it works fine. If you are using a Heat Gun, set it to the lowest temperature level. If set higher, it will burn the cap!

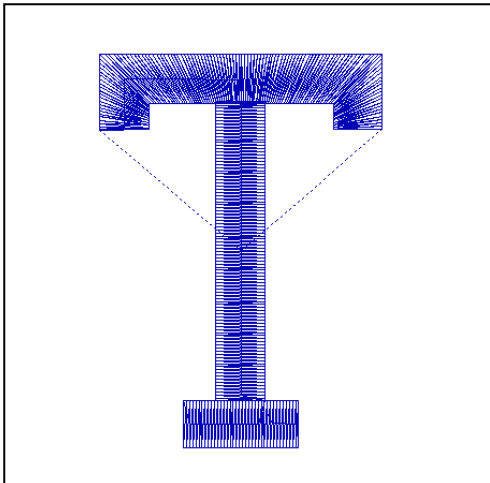
How do I plan out a design for Puff Embroidery? There are a couple of different ways that you can do this, but there are some basic rules that must be followed.

- Embroider all of the design except what is going to be puff first.

- Puff can only be done with Satin Path Stitches. You cannot do puff embroidery with complex fill stitches.
- Increase the width of your stitches at least 25%. This is done using pull compensation.
- The Satin Path Open Ends must be capped or they can be digitized to a point.
- A Small bean stitch around the edge is recommended to cut the foam.
- Must increase your density by 75 to 100%. I usually do closer to 100%. This is going to depend on what thread you are using. Some brands are heavier than others.
- If your area is too wide for a satin stitch, (12 millimeters) then you must use a manual stitch.
- Turn off your short stitch function. It will dig into the foam and will not Slow your machine down.

Setting Up Letter for Puff Embroidery

This is a method that I have used to create letters for caps. I use the normal fonts from my embroidery software for this but it does take some good editing or very basic digitizing skills to be able to accomplish this. If you know how to point and click you with your mouse and know how to create a satin stitch and a run stitch you can do this. If you do not know how to create or edit a satin stitch, then it may be more difficult.



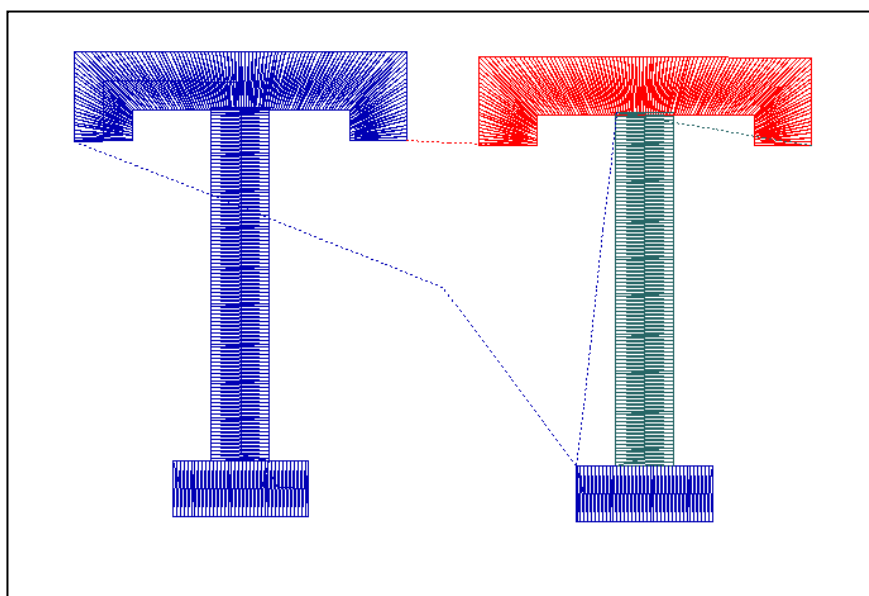
The first time that you try it, it may seem very difficult but with a little practice you will be able to get it and start creating the basic letters very quickly. This can save you a lot of money if you learn this skill and it is a big money maker to be able to add this to your product line. Most importantly, you can be very consistent with your setups using this method. Once you have learned how to create your basic pattern, just repeating it is very simple.

2 inches in height for your letter is about all you can do, but you want to make sure that you are not exceeding your width of the column as well. You do not want to exceed 8 millimeters in column width. By the time that you

add your pull compensation, you are over the limit for the machine stitch width if you make your letter any larger. (12 millimeters is your maximum stitch width.)

There are two methods for creating your letters for foam embroidery. The method that I am going to show you is the easiest method that almost anyone can do with basic software. The second method is where you digitize each piece to a point in your corners.

Step 1 - Bring up a basic font letter. For my example I am going to use a Full Block T. This is the most popular style for creating Puff Letters on caps. This is the Full Block T from one of my Embroidery fonts called Full Block New.

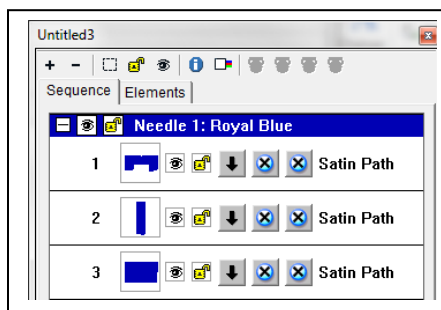


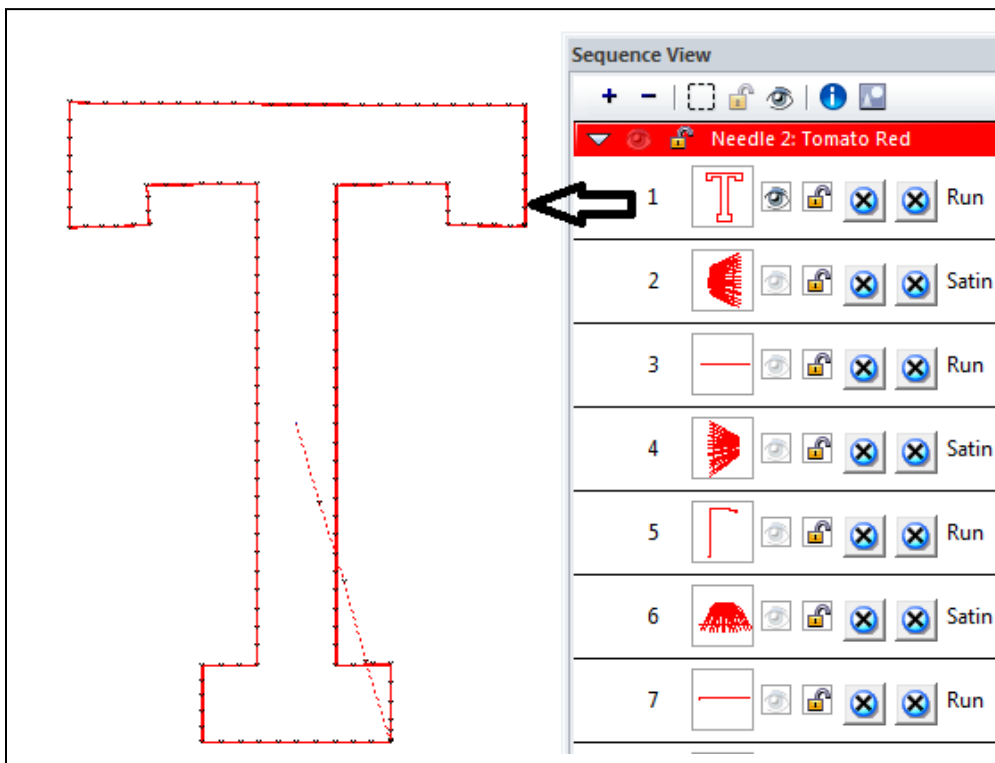
Step 2 - Convert the letter from text to segments, in some software; you are going to break it apart, break them into objects or convert it to vectors. It all depends on your software and the level of software that you have. You want to end up with 3 pieces for this T.

This will give you a good idea as to how to create

each piece because you have 3 pieces and they are going in different directions. I changed the color on each piece so that it would make it easier to see.

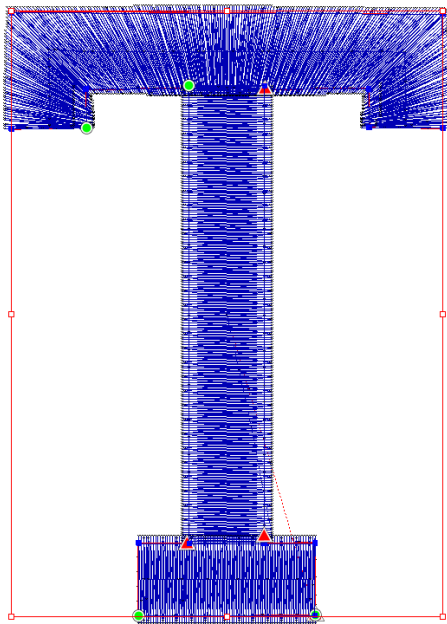
Step 3 - Bring up your Segment list or Sequence view and see how many pieces you have in your letter. You will then remove all of the run stitches if you have any from the conversion process in your software. You will not use these. What you see in this picture is what you want to end up with.





Step 4 - Plot around the outline of the letter with a Run Stitch. This run stitch is on the same line as your wireframe our outline of your letter. Change this run stitch to 1.5 millimeters and convert it to a Bean Stitch if you have that option. This will help to cut the foam. The Bean stitch is

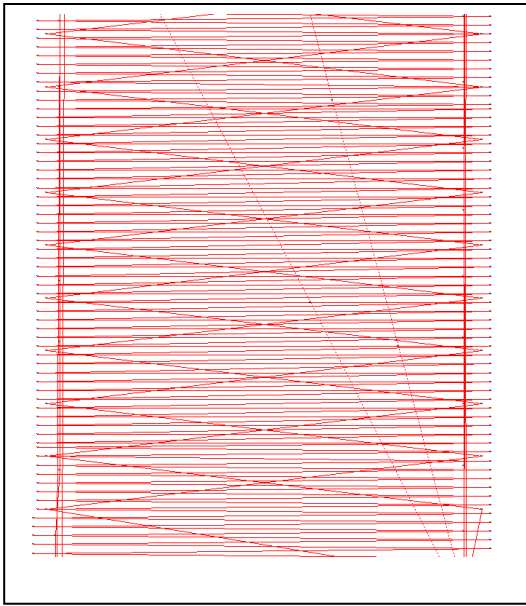
a run stitch that runs 3 times. It runs one stitch forward and 2 stitches backwards and repeats this all the way around your object. Sometimes it is called a triple run in some software programs. Add a start lock at the beginning of your run and place your start point at the bottom of your letter, since it is going on a cap.



Step 5 - Make sure that the start point of each segment is at the beginning of the stop point of the previous segment. Move your anchors or dots so that they line up with each piece and then edit it each piece so that it does not overlap onto the next piece or segment.

Add .60 millimeters or .70 millimeters of Pull Compensation. What you are doing is extending your stitch length on the Pull in areas of your letter so that it will cover the foam when you are finished but will not mash down the foam.

Step 6 - Add a wide zig zag underlay, inset distance of .2 millimeters. This will cover the foam adequately and again will not mash it down.



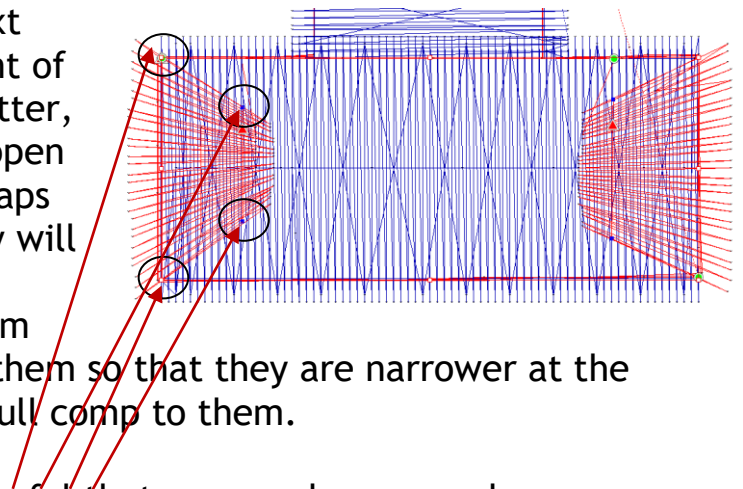
Increase your density to almost double, at least 75%. I usually double my density.

Starting with your first segment, I am doing the bottom piece first, then the top piece and then the center stem. I will create running stitches to connect them so that I do not have to have locks and trims. Add a lock stitch and a trim at the end.

Step 7 - Starting at the bottom segment or the next segment of your letter,

create a cap with a Satin Stitch on the open end of the letters. I have created the caps in red so that you could see them. They will actually be the same color as the letter.

These caps will hide the edge of the foam and hold it inside of the letter. I shape them so that they are narrower at the top than at the bottom. I then add .9 pull comp to them.

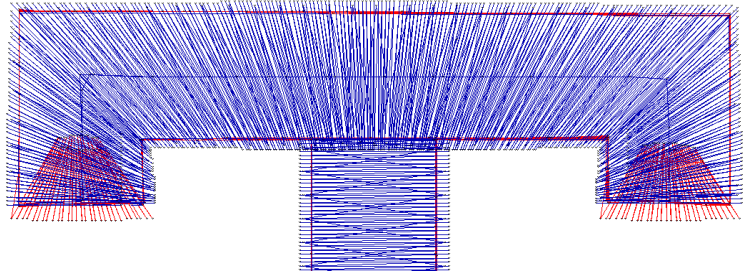


When you are doing this you must be careful that your anchors or nodes are right on the edge of the outline or wireframe. You want the stitch points of the cap to stick out about .8 or .9 millimeters from the edge of the letter or open section of the letter. If your cap is too far inside of the end of the segment on the open end you will have loose stitches hanging over the edge of the letter after the satin stitches are done. You may have to experiment here to see how far you need to go out for your software and machine.

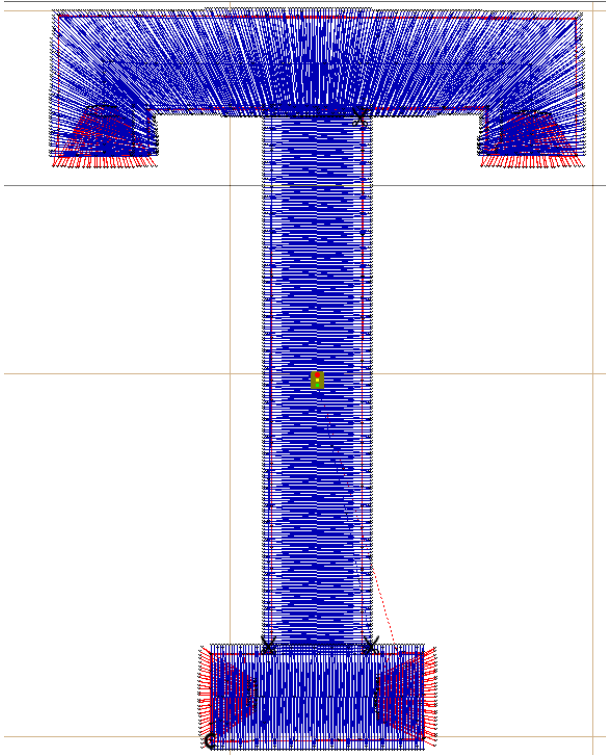
Create the cap on one side of the segment and then add a run stitch to the other side of the segment to repeat the process. The end result is a cap on each side of the open end of the segment. Create the run stitch so that it runs parallel and next to your original run stitch that created around the entire letter.

Create a run stitch to the top piece of the letter and create caps on the open ends just like you did not the bottom segment of the letter.

Step 8 - Go up to the top segment of the letter and place a cap at the end of each of the open ends just like you did on the second segment with a run stitch connecting the 2 caps.



I have the capping in a different color and showing on the outside just so you can see exactly what I am doing here.



Step 9 - Once your design is ready, you print out your Design Sheet from your software to see the exact size of your embroidery. You can then cut your foam pieces. Cut your foam at least one half inch bigger than the finished embroidery. Cut all of your pieces at once. Sometimes you may need to make adjustments in the size because of the amount of foam that you have. This has happened to me where I was just short a few inches and by decreasing my design just a tiny bit I was able to get several

more pieces of foam from the one large piece.

Step 10 - Hoop your cap and place it in the machine. Line it up as you normally would and place down your foam. Either spray tack it in place or tape down the edges and start your sewing process.

Slow your machine down. I run mine at 500 stitches per minute.

After it is finished, remove your cap from the machine and tear off your foam. Most of it will be totally covered. For a few edges hanging out, you can use a hot hair dryer and run over the foam. This will shrink in the edges of the foam slightly giving you a clean finished edge. If you do not have a clean finished edge on your foam, increase your density so that your stitches are closer together.



This is the way that the T looks like before you apply the heat.



This is the way that the T looks like after you apply the heat.

How do I price for Puff embroidery? This is a time issue as well as the cost of the foam. You want to keep track of the time that you will spend cutting your foam to the correct sized pieces, spraying it with adhesive or taping it down, placing it on the cap, removing the foam from the cap and finishing it. This is all in addition to the stitch count of your original design and purchasing the foam.

The 3 millimeter foam that I purchase is about \$2.00 each for a 12 inch by 18 inch piece. Do not forget to add in for the shipping of the foam. This obviously is part of your cost. There are less expensive foam pieces out there, but I want to make sure that I am using only high quality products for my customers.

I have found that it takes at least 2 extra minutes for laying down the foam, removing the foam and the finishing per cap. This does not account for the cutting of the foam or purchasing the foam. Like I said, you must keep track of each of your times and know what your times are costing you per hour for each piece or part of the process. If you have all of this in place, pricing out your puff is relatively simple.

If you are a screen printer, you can place the caps inside of a low level oven to shrink up the foam a small amount for the finishing. If you are using a heat gun, be very careful. I have found from experience that it is very easy to burn

a cap. I have found that a good hair dryer with several heat settings works great!

Your stitch counts for puff embroidery are generally very low so absolutely do not go by the stitch count. This can be added to your total but not the basis of your price.

Puff embroidery is perceived to be of higher value than just plain embroidery so you must charge for it. Remember, your time is very valuable and you want to make sure that you are getting what you are worth. Do not short change yourself here.

Tip:

Make sure that you clean out the hook area and bobbin of your machine when you are finished. The foam seems to create a lot of dust and collects in that area. If you are running a large job, you may have to do this each time you change your bobbin.

You may need to loosen your top thread tension a small amount when sewing the Puff embroidery.

If you are using the spray tack, clean off your needles after a few runs using alcohol or Hookwash and a cotton ball or any cloth that will work. Just wipe down your needle and make sure that you remove the glue that may stick inside the eye of the needle.

Watch the video in the **Design Creation Fundamentals** Tab section of the website, **Sewing Out A Simple Puff Embroidered Letter** and you will see how simple the process actually is. If you will follow the above steps, you should end up with the quality product that will make both you and your customer happy.

Don't forget to download your Free 2 Inch Full Block Puff Letters that I digitized for you to use for your caps!

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