

Preventing Shifting and Gapping



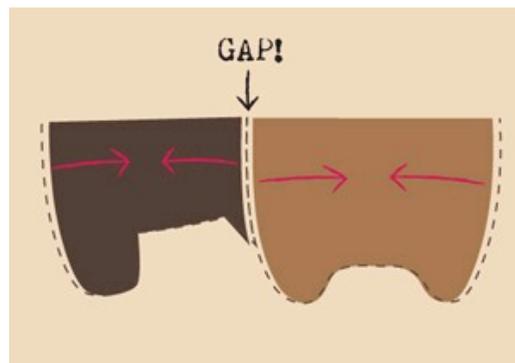
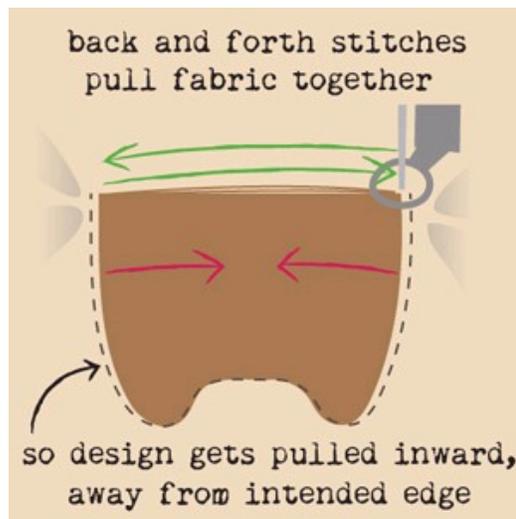
If you've been embroidering for awhile, it's likely happened to you. Your machine is happily stitching along on a new design ... but when it's all done, there are gaps between the areas of color, or the outlines don't line up with the rest of the design. So close ... and yet so far. Sometimes, like above, really, REALLY far.

This tutorial will show you a few ways to prevent shifting and gapping when stitching out a design -- specifically, creating more stability through **cutaway stabilizer** on the back, **appropriate fabric** for the design, and **firm hooping**.

But first, physics! Here's a quick look at exactly what we're trying to prevent.

Each stitch your machine takes "hugs" the fabric together a tiny bit. This is the nature of stitches. They can't help it -- they're huggers.

Thing is, embroidery designs can have a lot of those stitches. And when each of those stitches squishes the fabric together just a tiny bit in a hug, it can add up to a visible change in the design.



Because of this squishing, you might find that a stitched area comes out a bit smaller than originally intended. It might look fine on its own, but when subsequent color areas stitch, they might line up with where the edges of the previous color area were *supposed* to be, not where they actually are -- leading to visible gaps in the design.

This can play out in different ways...

Designs that have solid stitch-filled areas of different color can show gaps when one area does not meet the other.

Sometimes this stitchy misbehavior can look more like a shift in position than shrinkage.



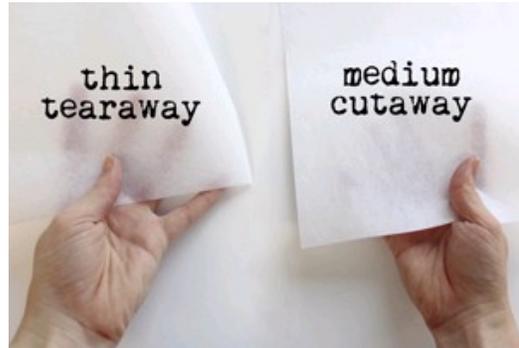
Designs that have outlines can turn out less than ideally when the inner stitch-filled area contracts while stitching. The outlines stitch around where the inner part should have been, not where it actually is.

Puckering of the fabric around the design can be part of this package of embroidery wonkiness, too.

Fortunately, there are ways to counteract the squeeze of those overenthusiastic little huggers! Long story short: sturdier stabilization.

Firstly, check your stabilizer. You'll get better results with a **cutaway stabilizer** than with a tearaway. Since tearaway stabilizers are meant to tear away after stitching, the fibers come apart more easily than in a cutaway. That means the structure of the stabilizer can break down on a tiny level during stitching, due to all those needle perforations.

For most designs, and definitely those with solid stitch-filled areas, we recommend a medium weight cutaway stabilizer for best results. For lighter-stitching, more open designs, you might like to try a sheer mesh cutaway such as Sulky Soft 'n' Sheer or Floriani No Show Mesh. These have a softer feel that's great for garments, where lighter designs can be a nice choice anyway.



We like to stick our stabilizer to the back of the fabric with temporary spray adhesive for a bit of extra stability.

If you find that the stabilizer you're using isn't sturdy enough for a particular design, use one layer of a sturdier stabilizer rather than multiple layers of a weaker stabilizer.

As you wash and use the embroidered item over time, cutaway stabilizer will keep the embroidery looking better, too.

Choosing an **appropriate fabric** for the design matters, too. Fabrics are not designed to support embroidery all on their own -- that's what the cutaway stabilizer is there to help with. But if you're embroidering a design that's a big, solid area of stitching, you're probably going to get better results with less shifting and puckering if you use a sturdy fabric like denim or duckcloth rather than something very light like quilting cotton.





After you've got a fabric and stabilizer that are well suited to the design, the other important factor is **firm hooping**. Hoop the fabric and cutaway stabilizer together, taut like a drum. Tighten the hoop well, to keep the fabric from slipping. If the hooped fabric makes a thuddy little drum noise when you tap on it, that's great. Test the whole assembly with your hands to make sure the hoop doesn't pop apart easily. If it does, start over. It's worth taking the time to get the hooping as firm as possible.

Sometimes embroiderers will "float" the fabric by hooping only the stabilizer and then sticking the fabric to it, in order to avoid hoop marks or to stitch something that's too thick or clumsy to hoop. For the most part, we do not recommend this. Since the fabric is not hooped, but only stuck to the stabilizer with some adhesive, it's vulnerable to shifting and contracting, and you're more likely to see misalignment in the design than if the fabric were hooped.



[Conditions under which we'll allow the "float" method: velvet (which can't be washed to undo the crushing) and unhoopable objects; only when you're using a light-stitching design; and only if you're prepared for unpredictable results.]



This design, contrary to all of the above advice, was stitched on a thin material, hooped with lots of slack in the fabric, with no stabilizer at all. Your problems probably won't be quite so pronounced, but we tried extra hard to make this one turn out really badly for illustrative purposes.

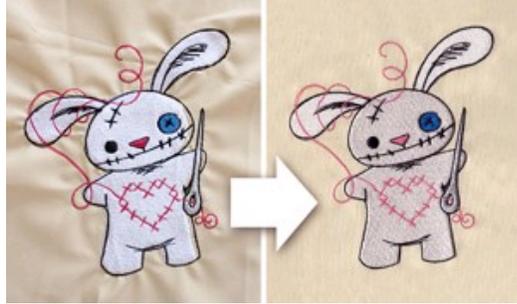
You can clearly see what's gone awry: parts of the design have shifted from where they should be, leaving gaps between the areas of color, and the running stitch details on the bears' faces don't line up with the spots of color underneath. Also, there's quite a bit of fabric puckering around the edges of the design. All because those bears are just scrunching the fabric together SO hard with their hugs.

Other things to consider if you've tried the tips above and you're still seeing shifting and gapping:

- Is your machine's thread tension decent? It's rare, but way-too-tight bobbin tension can sometimes lead to slight gaps.
- Is the hoop bumping into anything as it moves to stitch the design? Don't laugh! It happens to the best of us.
- How's your needle? We recommend a 75/11 sharp sewing needle for most applications, for best embroidery results. A big or dull needle could weaken the stabilizer.

Proper **stabilizer, fabric, and hooping**: that's how you go from a wonky stitchout like the one on the left to a nice stitchout like the one on the right.





Outlines, too, will line up better when the design is properly stabilized.

It's the little things that make your embroidery go from "yikes" or "meh" to "awesome!"
