Essential Elements of Great Embroidery Designs

This article is intended to give you a broad overview of the basic elements in great designs so you can determine quality designs.

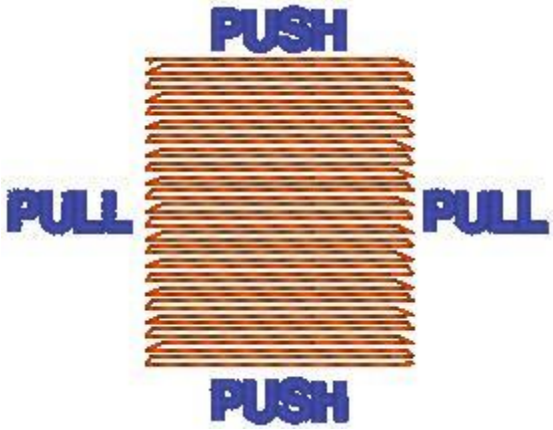
JUMPS are gaps between segments of a design. In the commercial world of embroidery we have the machine perform a trim before jumping to the next segment. On home machines the thread carries to the next segment and needs be snipped with scissors at each color change. These long stitches are called JUMP STITCHES. Some jumps can't be eliminated. With careful planning other jumps can be removed by running a line of stitches between two segments, then covering that run with a later segment of the design.

PATHING is planning how a design runs. A great designer plans how the design will run and ensure that all unnecessary jump stitches and color changes are removed. This is a simplified version of pathing. Digitizers must also plan for a variety of stitch parameters. This is often the most important part of the digitizing process.

Pathing is something you can see on screen using a sew simulator. (See more hints on using Ambassador in an email later this week) When looking at the design ask yourself if the color sequence makes sense to you. Watch the design sew on screen and see if you can mentally join two areas of the same color with run stitches that will be covered later in the design.

DENSITY is a matter of spacing between parallel lines of stitches. It describes the distance between rows of stitches. Thread is three dimensional, it takes up space. 40 Wt thread is .4mm wide so most designs have a master density of .4 mm. Some areas or designs may need a bit more or less density. Digitizers must walk a fine line between good coverage and too many stitches. Too much density and a design will be stiff; it may break needles and poke holes in your fabric. Too little and there will be gaps between rows in which the fabric shows through.

PUSH AND PULL COMPENSATION – All fabric will move a bit during the embroidery process. Some fabrics such as woven fabrics are fairly stable and don't move very much. Other fabrics, like knits, move around more while sewing. All fabrics are pushed out in the direction the machine is sewing and at its opposite end. At the same time the fabric is being pulled in on the outside edges of a row of stitches.



Digitizers must compensate for this movement of the fabric. With experience a digitizer learns how a variety of fabrics will react during embroidery and make adjustments so the design has proper registration.

This is one instance where looking on-screen at a design can be misleading. On screen outlines rarely look as if they run exactly on the edge of a design. If a design looks perfect on screen then chances are that there will be stitches both inside and outside of the outline. On screen good designs usually look as if the outline can't possibly work. Trust me, it does.

This truck is an example of allowing for push compensation. This is my own design, which I digitized for heavy fleece sweatshirts. The fabric is very thick and tends to move a lot during embroidery. In this case the gaps you see on screen (left) disappear when the design is sewn (right).

REGISTRATION – We've all seen designs where the outline either sits too far outside or inside a part of a design. This is called registration. A well registered design will sew with all adjacent areas meeting without overlap and outlines matching the edges of a segment and the perimeter of a design.

A good digitizer can make adjustments to a design so that there aren't any unintended gaps in the design. She must also make sure outlines meet the edge of the top stitches without gaps and without the stitches moving out past the outline.

With the terminology and definitions provided in this article, I hope you will look at a variety of designs on screen. Look at designs you have already sewn and know look good. Do the same with designs you know are bad (you know you have at least one!) Soon you will get a feel for how a design might sew.