

Laser Bridge Technology Revolutionizes Appliqué Production

By Ed Balady, president, Bito

A laser bridge machine is the latest piece of equipment designed to do appliqué and etching on ready-to-wear apparel. It is called a bridge because it is built over a multihead embroidery machine and the laser head travels down a beam stopping over each embroidery head to cut and then move on the next hoop. It can cut almost any type of fabric or etch designs on the fabric's surface.

Using sophisticated software that coordinates the laser bridge and the embroidery machine, jobs are programmed to the right combination of power, velocity, repeats, height, and delay. Each job is tested until the desired results are achieved and then the setting can be saved for future jobs.

The Proel laser bridge machine has revolutionized the appliqué process. It is now possible to simply hoop a garment, place a layer of fabric in the hoop and press a button. The process varies depending on the look, but for a traditional appliqué, the laser will cut out the letters or shape and the embroidery machine sews it down with whatever stitch has been selected. Excess fabric is quickly weeded away and the design is either ready for the second color layer or done!

The following gallery is intended to display the great capabilities of this process and the myriad of different looks available. It is possible to use unlimited layers as the laser cuts only the layer intended and no deeper. It also can do incredible detail. Jobs with extensive lettering, which can be tedious with traditional appliqué can now be done in less than half the time. In most cases, the laser cuts the shape in seconds as it travels down the multihead machine. There are no adhesive sprays, no positioning, or starting and stopping of the machine.



Budweiser Select

Laser bridge technology allows embroiderers to stretch the borders of creativity and innovation in appliqué. This design is sewn on a black fleece background with polyester twill in red for the crown and white (champagne) for the lettering. "Budweiser" is an appliqué using a satin border stitch. "Select" is sewn down with a double bean stitch. The

red splash is intended to resemble the crown of the “king of beers.” The fine detail represented by the crown can be done only using a laser bridge machine.

Without using a laser to cut the holes in the crown, these holes have to be stitched in black thread to create the same effects. So the laser significantly decreases the stitch count. This is one example of how a laser can lower stitch counts without losing details or quality.

The thin columns needed for the word “Select” also would be a challenge using traditional appliqué techniques.



Leprechaun Traditional

This Fighting Irish leprechaun demonstrates the capability of laser bridge appliqué to reduce stitch counts and speed up production. You also can see how it looks on light and dark fabrics for different effects. This design uses two layers of fabric to which detail was added with embroidery. Added interest was created by using different fabrics. The first white layer is cotton twill. It was placed in the hoop and cut. The second green layer, which is heavyweight T-shirt material, was placed over the white and cut. The laser can be programmed to cut to any depth so the white layer was not cut when the green layer was. The embroidery machine sewed down these two layers with a navy satin stitch and yellow accents were added with a fill stitch. Even the green clover on the hat is appliqué.



Guitar Hero

This is a two-layer appliqué sewn on a heather gray fleece. The bottom layer is black polyester twill topped with a layer of white polyester twill. Contrasting gray was added using a column stitch to create the shadow effect. It also could have been done using appliqué fabric because the stitches are wide enough to be replaced by a thinly sliced

fabric. This would have further reduced the stitch count.



Duquesne Dukes Traditional

This design can be compared to the distressed version below and shows what a completely different look can be achieved by using different fabrics and stitches. This traditional version of the Duquesne Dukes has four layers of polyester twill that forms the banner where the word “Dukes” is embroidered. The shiny twill material provides an interesting contrast to the background fabric and allows “Dukes” to pop. A bean stitch was used to tack down the inner pieces of the appliqué and then it is finished off with a traditional navy satin stitch border.



Duquesne Dukes Distressed

This version of the Duquesne Dukes is intended to look distressed. Three layers of T-shirt jersey and only the bean stitch was used. This allows the edges of the fabric to fray and this design will fray more as it's washed. Not only does this design have a retro look, but it also has a lower stitch count making it faster and cheaper to produce than traditional appliqué.



Murray Hill

The laser bridge makes doing split fronts faster and easier than traditional techniques. This one-color example uses red polyester twill and is bordered using a contrasting blue thread to create the impact of a second color. By using a framing station, the two sides of the garment can be quickly lined up for hooping.



North Country Lodge

This design is a great example of how a laser bridge machine can open doors by making it economically feasible to do designs that in the past would have been passed on due to the size, complexity, or high stitch counts or cost. "North Country" has four layers of appliqué sewn onto a forest green fleece. The lettering is two color: black on white, which were done at the same time as the other black and white portions of the design. The details that create the bear's face have been done using a combination of appliqué and limited embroidery.