

# CHEATSHEET

Get a crash course in decoration innovations

By Ed Balady

## Make Emblems With Lasers

**Q** “I’m looking to diversify my business with emblems. What’s the best way to get started? Is investing in a laser to create patches a good idea?”

**A** Yes, a laser can make it fast, easy and profitable to offer custom emblems. Think about it. What’s the most labor-intensive part of creating an embroidered emblem? Cutting it out. If you’re looking for a solution to speed up and increase production, there’s no better candidate than a laser. It’s by far the fastest, most production-friendly way of cutting emblems.

In contrast to typical small-shop cutting methods, which would include using a die-cutter or scissors, a laser takes approximately 5 seconds to cut out a 3”-diameter circle. It can cut 24 3” circles in about two minutes.

With a laser cutter, the shape and the size of the emblem don’t matter. In fact, on the same run, you could cut different shapes and sizes if the order required it. Imagine being able to hoop one piece of twill and do a circular company logo type of patch for the sleeve and a name badge for the left chest all in the same run.

With a laser, a multitude of creative, innovative options become available. Emblems can be made out of leather or suede and have designs or photographs etched into them. You can create emblems with a distressed or reverse appliqué look. You can also use a much wider variety of fabrics in solids or patterns to add interest and excitement to an otherwise traditional patch. You can easily offer unique, cool-looking patches that no one else has made or can make.

Advancements in technology have resulted in more affordable lasers, opening the door to decorated apparel shops bringing this service in-house. While a super-large order may still be more practical to farm out, most emblem

orders are between one and 24 pieces. This can be a profitable add-on service for any shop that has embroidery equipment.

### Single-Head Embroidery Laser

The most affordable option for small to mid-size shops is the single-head laser, which is attached to a single-head embroidery machine. The laser is connected to the first needle on either side of the head. The design is digitized to instruct the first needle to cut in a similar fashion that it might instruct that needle to sew for embroidery only.

This laser is slightly slower than other types of laser equipment because its speed is dictated by the movement of the embroidery frame, which moves the laser around. However, this also makes it the most accurate as it contours around the design exactly as the embroidery machine frame has dictated.

To create emblems with a single-head embroidery laser, it’s a simple process of hooping your patch material and loading the hoop. The embroidery machine sews an outline stitch and then the design or lettering. Once that finishes, the laser cuts each emblem out. The excess fabric is weeded away, and patches are ready for finishing.

Single-head embroidery lasers sell between \$20,000 and \$25,000, not including the embroidery machine. If you want to expand your production, two-head and four-head embroidery lasers are available. These sell for approximately \$32,000 and \$62,000, respectively.

### Stand-Alone Laser

The next option in terms of price is a stand-alone laser. These come in two types: galvanometric and plotter.

A galvanometric (better known as a galva laser) stand-alone laser with a cutting field of 300 mm by 300 mm (12” by 12”) or 400 mm by 400 mm (16” by 16”) is significantly faster than the single-head style machine. So, bigger quantities can be cut at the same time. This type of laser accepts an embroidery hoop, so it’s a simple process once the embroidery is done to transfer the hoop to the laser for cutting and then return it to the machine for finishing, if necessary. Because a galvanometric laser is the fastest of all lasers, one stand-alone machine can easily keep up with as many as 24 embroidery heads. This is a higher-production option for multi-head shops.

This laser has options available in terms of power, type of scan head and production enhancement features. These include double framing, multitask systems and optical recognition software. The options chosen determine the final price, but the range goes from \$50,000 to \$90,000. Galvanometric lasers also come in larger sizes.

In the case of high-volume production, for cutting emblems, the user also may want to purchase an auto-shape recognition pro-



The most affordable option for small to mid-size shops for cutting emblems is the single-head embroidery laser, which speeds up production by sewing the emblem, and then the needle bar, which has the laser attached to it, comes back and cuts it out.

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gram. This software combined with a camera tells the laser the exact shape that needs to be cut. It costs approximately \$16,000, which includes the camera, and it can be programmed to do multiple jobs at one time.

For example, more than one emblem job can be processed in the same time period. If operators from two multi-head machines were working on different jobs, the laser could cut one job and as soon as it was removed, the other job could be loaded and started with the touch of a button to switch the design file without needing to reload or reprogram each time.

A second type of laser is a plotter. This is the more commonly-known laser machine, otherwise known as “conventional.” This laser also comes in different sizes ranging from 800 mm by 600 mm (31” by 24”) to 1,600 mm by 850 mm (63” by 33”).

Again, if higher production is your goal, this laser would enable a greater quantity of pieces to be processed at once. It also has an interchangeable frame system that accepts embroidery hoops. However, a plotter is slower than a galvanometric.

A spot laser-targeting system is optional for identifying exact positioning of the laser cutter on the substrate. Auto-shape recog-



With optional software, a standalone laser can be programmed to do multiple jobs at once. Operators can use a double-sided tray and move back and forth between two or more jobs with the click of a button.

nition software is available for use with a plotter laser. This increases accuracy and production speed, but is not necessary as long as the embroidery is high-quality with good registration.

The plotter can be set to automatically repeat the same cutting shape in multiple directions as well as optimize cutting paths to enhance production. It can also be used with a fixed or a motorized cutting plane.

Plotters range in price from \$10,000 to \$100,000. The auto-shape recognition software is approximately \$10,000. While plotters are less expensive to buy than the galvanometric single-head or stand-alone laser, they also require more labor to operate.

### Laser Bridge Multi-Head Embroidery Laser

The final laser option is a laser bridge type. This machine is mounted above an embroidery machine of six heads or larger, which makes it an inline process. The embroidery machine sews the patches, and then the laser head comes down the line and cuts out the emblems in each hoop in sequential order.

A laser bridge has a galvanometric laser, so it’s very fast. The entire process is done right on the machine; it requires less labor than a stand-alone laser, and depending on the length of the bridge, it dramatically outperforms a stand-alone in volume.

Auto-recognition software isn’t necessary with the laser bridge, as it is with a stand-alone laser, but it can be added. The benefit is greater cutting accuracy. This software helps to compensate for the difference between a shape on a computer screen and how it actually sews. A great example is a circle. Embroidery stitches can distort a circle into a kidney. The software detects the true shape of the object and cuts it exactly to fit.

While prices for some of this equipment may seem steep for only emblems, keep



After buying a LaserBridge machine, which he uses over 31 of his 150 embroidery heads, Keith Kearney, of Pittsburgh-based Stitches started offering patches to his customers as a way to save on the cost of shipping garments to his shop. This sample was created for an Ironworker’s Union.



One advantage of using a laser to cut patches is it opens the door to a greater variety of fabrics than is available using traditional methods. This Hilton Head patch, created by Pittsburgh-based Stitches, features felt on top of athletic twill.

in mind that these lasers can be used for a huge range of other tasks. In addition to being able to cut a wide range of fabrics, some also can cut wood, paper, textiles, mark anodized aluminum, nontoxic polymers, Plexiglas and leather.

A laser is an ideal choice if you’re doing high volume in emblems, but it’s also a good investment for lower-volume shops because when you aren’t doing emblem orders, you can use the capacity to offer a variety of other services and new looks to your clientele. ■

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