

Embroidery: Production

Making Impossible Embroidery Possible

Embroidery on a T-shirt? Oh yes, you can!

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Erich Campbell's "Dream Big, Stay Bold" shows a variety of design elements that can be used on a T-shirt. It includes light filigree running stitches, bold satin stitches, shading and even a touch of 3-D. The design was stabilized with a light tearaway backing. *All photos courtesy of Madeira USA.*

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Hardly anyone thinks of T-shirts as delicate — they make bold statements, and are ubiquitous, affordable, easily laundered and even disposable. But in the embroidery world, a T-shirt's lightweight knit renders it a delicate fabric.

To an embroiderer, fragile, lightweight knit fabrics should be approached with the right design, appropriate thread and stabilizer, and the smallest-possible needle. With the right technique, the results can be amazing. Ignoring the lightweight material's attributes can result in a disaster, with consequences that include puckering, buckling and an out-of-registration design.

Check out the following tips on how to avoid such outcomes.

Design Choice

One of the reasons so many people "live" in T-shirts is the comfort level they deliver. The ease of movement and lightweight attributes of this popular garment are not meant to be lost.

Embroidering a heavy design with lots of fill stitches will overpower a lightweight garment. Keep in mind that as a design is embroidered onto any fabric, the thread's weight and stitch density tend to draw the fabric inward. The result is puckering or a design that overpowers a lightweight garment. This inward pull is counteracted by stabilizing the garment before stitching. However, your very first step lies in correct design choice.

Consider the number and types of stitches. Running stitches are less "binding" than fill or satin stitches. A loose design, with open spaces, allows the actual fabric to show through and maintains a light, airy feel.

A small design — one that occupies minimal space on the garment — will serve to embellish without eliminating the fabric's soft feel and high comfort level. Often, underlay stitches can be built into the design to stabilize it, preventing show-through and reducing fill stitches. The sewing sequence should be well-planned to reduce jump stitches and the necessary trims they create.

Fabric Consideration

There are big, bold T-shirts and there are thin, demure ones. Some tees are meant for work while others are meant as beach or cruise wear. Some are 100% cotton; others are blended with polyester. Some are meant for heavy-duty laundering in water that contains bleach; others prefer a gentle hand wash.

Overall, a T-shirt's fabric content makes no difference during the embroidery process, unlike screen printing, where inks react differently to cotton and polyester. With embroidery, the fabric's thickness and stability determine the decorator's preparation and several choices along the way.

Needle and Thread

A quality, general-purpose, 40-weight embroidery thread — either rayon or polyester — will work fine on any blend and any lightweight knit. When adding embroidery to a shirt that will be heavily worn and, likely, commercially laundered in water that contains bleach, choose polyester thread. While quality rayon thread's natural fibers can withstand water temperatures of 203°F, only 100% polyester thread is guaranteed to stand up to bleach.

Beyond the general-purpose, 40-weight thread, creative embroiderers can make specialty threads work on lightweight knits. Thin, 60-weight thread for small lettering or fine details, metallic thread for impact, matte-finish thread for shading or fire-resistant thread for safety all can be added to T-shirts, as long as the shirts' attributes are considered. An accomplished embroiderer even can create the now-popular 3-D embroidery effect.

Always use a ballpoint needle when embroidering on knits. The rounded tip will penetrate the fabric between the strands of fiber instead of piercing them.

Just like threads come in different weights, needles come in different sizes to accommodate them. Always choose the smallest needle suggested by your thread manufacturer. While standard 40-weight threads will work well with a needle size #65/9, #70/10 or #75/11, choose the smallest needle for lightweight knits so that the hole made when the needle penetrates the fabric is as small as possible.

Stabilizing

When choosing the correct backing or stabilizer for a lightweight knit fabric, think light. More hassles result from using a stabilizer that is too heavy, and it overwhelms the garment.

A cutaway backing offers the most stabilization and will not distort a design when it comes to removing any excess. Weblon (also known as Weblon No Show) is a popular backing for lightweight knits; comes in white, black and beige; and feels smooth against the skin. Sheer, with a low profile, Weblon is made of embossed nylon and will not show through when used on even the lightest-weight knit tank top.

Other popular stabilizers for use on lightweight knits include a thin woven cutaway, which is strong but soft to the skin, and cutaway washaway, which will disintegrate in wash water. Decide if the garment will depend on the stabilizer to maintain its shape over time; otherwise, a garment stabilized with a washaway backing will not hold its shape after multiple washings.

Tear Away Waffle is another backing that is meant for use on lightweight knits. It is soft on the skin, lightweight for no show-through and tears away easily with minimal stress on delicate fabrics. Some of these stabilizers come in fusible versions so that they can be adhered only where the design will be stitched instead of being hooped with the garment.

Hooping

The embroidery hoop works in tandem with your choice of backing to stabilize the garment you are embroidering. Lightweight knit T-shirts should be hooped so that the garment and stabilizer lay flat in the hoop, with no stretch in either direction.

Some embroiderers refer to this as “neutral tension” and choose a magnetic hoop, which sandwiches the garment between two magnetic metal frames that don't require pressure to hold the garment steady. Regardless of the type of hoop you choose, remember not to stretch the knit fabric; otherwise, the garment will pucker around the design when released.

Yes, You Can!

T-shirts traditionally have been considered the domain of screen printers, while golf shirts belonged to embroiderers. But with today's fabrics, high-quality supplies and fashion trends that push the envelope, embroidery is expanding its boundaries. Don't let the T-shirt knit's lightweight nature intimidate you. Master digitizer Erich Campbell found inspiration with a Gildan Ultra Cotton (heavier knit) olive green T-shirt.

“For me, there's nothing more stunning about embroidery than the sense of dimension and the play of light across the threads,” he says. “This means that I always ask to use layering, carved textures and the natural look of the thread to enhance my designs. In ‘Dream Big, Stay Bold,’ the light, open-mesh fills add texture to the flat background, while the frame of each letter rises above to create shadow and highlight – and all with very simple, classic techniques. I wanted the piece to be reminiscent of those vintage carved and faceted signs or hand-painted glass panels from a bygone era of sign painting.”

Know your craft and don't be bound by arbitrary limitations. Make the correct choices regarding embroidery supplies, machine settings and stabilization of the lightweight knit, and you'll have customers spreading the word that you were able to achieve for them what

others deemed impossible. As performancewear – being lightweight, stretchy and slippery – has shown, even the most challenging fabrics can be embroidered.

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Machine Settings Matter

As with the start of any new project, your machine's top and bottom thread tensions should be checked. If tension overpowers the garment, the stitches will be too tight, stretching the thread and possibly distorting the fabric or design. This can further result in puckering or poor registration. Loosening the bobbin and top thread tensions may correct the issue.

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