What You Should Know about Printing over Seams

Are you prepared to respond to customers who want you to print a design that will cross a seam? Perhaps they want a design to fill the front and back of a T-shirt or hoodie, or one that spans from sleeve to sleeve across the shoulder seams of a T-shirt or baseball jersey. Maybe they want to draw attention to a logo or message by printing it on the rear of women's sweatpants. In any case, think twice before automatically agreeing to screenprint these types of jobs for your standard rates.

Unless you already specialize in all-over printing, printing over seams will require you to modify your production methods in ways that will either slow down your production or add labor costs.

All sorts of irregularities can appear when you print over a seam, including odd build-ups of ink close to the seam.

As David Zimmer, textile products manager for M&R Printing Equipment, explains, "Any time the thickness of what you are printing on changes, the amount of ink laid down also changes. Sometimes the ink coverage gets heavier, and sometimes it gets lighter. Depending on the type of squeegee blade used, you might not get any print at all close to the seam."

The visibility of these imperfections will depend on variables such as the flatness of the seam, the contrast between the color of the garment and the ink, and the characteristic of the design.

Because of these variables, it's not possible to provide definitive step-by-step guidelines for every possible job a customer might want you to reproduce. Yet there are certain steps you can take to produce results that will satisfy your customer's desire for a trendy-looking T-shirt or hoodie at a price that is acceptable to him or her and profitable for you.

Companies that specialize in all-over printing typically have done a lot of research and testing to discover what's technically possible when it comes to screen-printing over seams and what's practical from a business standpoint. Business considerations involve determining how much it costs to produce each garment, how much the customer is willing to pay, and how many ruined

Garment-printing experts say yes, there are ways to do it well. But you must balance what's possible with what's practical.

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garments you might have to throw away in the quest to meet your customer's quality expectations.

Those who have mastered the art of printing over seams probably spent 10s of thousands of dollars in R&D to devise production methods that cost-effectively yield the best possible results with the least amount of waste.

To help you profitably produce garments that involve printing over seams, we asked six garment-printing experts to recommend steps to consider in terms of prepress, production and customer education.

Understand What the Customer Really Wants

Figure out what the customer's "art target" is, suggests Greg Kitson, president of Mind's Eye Graphics. Usually, the art target is something they saw at the mall that was created for the NFL, NASCAR and Disney. What customers don't realize is that these garments were created with highly engineered art that was specifically created for screen-printing tens or hundreds of thousands of garments. In many cases, these garments were sewn from cut panels that had already been printed. There are no imperfections around the seams because printing across the seams wasn't part of the process.

Make the customer aware that if you must print across seams on T-shirts or sweatshirts, then extra costs will be involved because of slower production and higher waste, and some imperfections will be inevitable. Also let them know that the final cost of the garment can be controlled if they will allow you to suggest modifications to the design or recommend the brand of garment on which it is printed.

Ultimately, Kitson says it becomes a matter of, "Creating artwork that is reproducible at a price that the customer is willing to pay and that meet your profit goals."

Create Print-Friendly Artwork

All of the experts interviewed for this article agreed that print-friendly artwork is essential to success in printing over seams. As Charlie Taublieb of Taublieb Consulting puts it, "Deal with reality and design accordingly."

If a customer has supplied you with a design, examine the details and colors that are in close proximity to the seams. If it appears problematic, suggest modifications that will be make the art more forgiving at the point where the pattern crosses the seam.

For example, trying to print a solid, horizontal line across a vertical seam is just asking for trouble, says Zimmer. The same thing is true for a detailed design such as a round clock face on a castle tower.

"Keep the art loose and/or distressed," says Lon Winters, president of Print This, Inc. "Be suggestive. Keep high detail areas away from seams or bleeds."

"If the image is distressed, the gap over the seam won't be obvious," says Taublieb.

Here are a few other tips from the experts we consulted for this article:

- To print letters across the full width of a shirt, avoid printing across the seam entirely. Modify the design so that the gap between two letters falls where the seams will be.
- Don't try to print solid images across the seams or a zipper.
- Avoid high-contrast colors on zippers or seams, such as athletic gold on navy blue or black on white. High-contrast colors will make the inevitable imperfections around the seam much more obvious.
- Use special effects in the areas of the seams. For example, use areas with dropouts or distressed looks that make it appear as if the ink has flaked off. Burnouts that get blotchy only add to the charm of the design.

Choose Print-Friendly Garments

The key challenge during production will be to keep seams as flat as possible, so the squeegee can lay down ink consistently. One way to make this easier is to start with garments that will provide a smooth as surface as possible.

You could choose thinner, less expensive T-shirts that already have flatter seams. But if you will be charging a premium for printing an all-over design, your customers will expect a higher-quality garment. Heavier weight garments have thicker seams. Seams with extra taping or heavy-duty construction also cause difficulties.

Spend some time experimenting with different designs, garments, and printing techniques, says Taublieb. Some garment printers conduct R&D and an ongoing basis; others use slow periods to test different garments and processes.

Through trial and error, Kitson has discovered that some garment manufacturers tend to sew their seams more consistently to lie down flatter.

Adjust Your Production Methods

Using equipment designed for all-over printing is ideal for printing over seams, says Winters, but modifications can be made to general-purpose screen-printing equipment that usually handles more routine orders.

For example, to keep the whole garment as flat as possible while printing one side at a time, you can use oversized screens and pallets if you have a press that will handle them. According to Zimmer, you might need a screen as big as 50 x 50 inches to allow ample room around the edges of a flat T-shirt that measures 30–40 inches from sleeve tip to sleeve tip and 36–38 inches long.

For small print shops that can't afford a large manual or automatic press, M&R Printing Equipment has designed a manual press (the Sidewinder Solo) that can hold large screens needed for all-over printing. Even so, you will still need a bigger exposure unit in-house or find someone who can expose the oversize screens for you.

Some companies that print all-over designs on garments use belt printing equipment to print either on cut pieces before sewing or on manufactured garments. Unless the screens are wiped off during production, a certain amount of ink build-up will occur in the screens when the squeegee passes over the seams.

Here are some other variables to consider during your R&D process:

1. Try putting a thin layer of foam rubber or neoprene on the surface of the pallet. When the squeegee hits the seam, it will push the seam down into the foam rubber, making the seam the same level as the rest of the garment.
2. Take extra care when loading each garment, so that the art around the seams will print correctly. Use adhesive to affix each shirt to the pallet. And use a corn-starch-based glue to glue the front of the shirt to the back of the shirt, so the fabric won't lift up during printing.
3. Consider using specialized pallets. If you will be printing across the zipper on a hoodie, you can buy (or make) pallets with a grooved recess that keep the zipper lower than the print surface. If you are printing on a hoodie made of thinner fabric, Taublieb says you can try filling in the zipper with a thin strip of foam weather-stripping. Wing-type pallets or modified pallets that fit inside the sleeves of T-shirts can also provide good results, says Winters.
4. Keep the seams flat. During production, take extra precautions

to keep the seams as flat as possible. Kitson says he has seen people iron the seams before printing. Others use a brayer to roll the seams flat.

5. Use a proper durometer squeegee so it can better conform to the seam. "You want a nice soft squeegee that can conform to different layers," says Zimmer, "But the softer the squeegee, the harder it is to maintain detail." James Ormond, an applications specialist at M&R Printing Equipment, believes a 65-durometer squeegee is a good, all-around blade for a design that requires printing over seams, particularly when used with a neoprene cover on the pallets. When demonstrating all-over printing at trade shows, he likes to use a chisel-tip squeegee to ease the process of seam printing. He recommends using a slow to medium stroke.
6. Use water-based or thinned plastisol inks. Taublieb believes that the acceptance of water-based inks has helped all-over printing become more popular. An all-over design printed with plastisol inks could be uncomfortable to wear. If you will be printing across seams on a light-colored garments, use water-based inks or thinned plastisols, suggests Winters. "For dark-colored or 100 percent-cotton reactive-dyed garments, go discharge and/or a combo with water based." When demonstrating all-over garment printing on an M&R Alpha 8 press, Ormond uses plastisol inks reduced with curable reducer or mixing base. He has found that this makes it easier to print on and into the seams.
7. Control your screens. Controlling the screen can be critical. "Taking screens from a higher tension to a lower tension will give them more stretch," says Kitson. You may risk smearing some of your prints, but if you have chosen your art correctly, it shouldn't affect your productivity.
8. Adjust your prices for lower production. Because you must be extra careful when loading each garment and take steps to keep the seams as flat as possible, Kitson advises planning for a noticeable drop in the number of shirts you can produce per hour. To remain profitable, you will have to adjust your prices.

To keep your throughput consistent, Kitson says you can assign more people to work at various stations of the press. Perhaps one person can be loading a garment, while another person at another station centers it, and a third person can use a brayer to flatten the seam. Having multiple people working at various stations will increase your labor costs, and reduce the number of colors you can print.

If you can generate a steady demand, you may be able to dedicate one press in your shop to all-over printing. But if you only handle these types of jobs occasionally, you will have to take into account some of the time involved in changing your production set-up from standard print jobs to all-over prints.

Show Customers What to Expect

No matter how proficient you become in printing over seams, you will still need to make customers aware of why you must charge more for all-over designs. This interaction can also be a good time to let them know what type of quality is reasonable to expect.

"Don't show them your best samples," cautions Taublieb. To ensure their expectations will be realistic, show samples that are close to your worst.

On the websites of screen-printing firms that specialize in all-over printing, you can find photos that show customers what types of irregularities they can expect in across-the-seam designs that aren't print-friendly.

Update Your Marketing

Taublieb suggests that instead of worrying about "How do I make each printed garment perfect?" ask yourself "How can I make the imperfections part of the appeal?"

For example, if your customers regard your garments as wearable art, perhaps they will appreciate knowing that each garment is distinctly different in a small, subtle way. The imperfections around the seams can be viewed as proof that the garments were manually crafted by artisans and not mass-produced.

While browsing through a group of $75 Affliction-brand shirts in the men's department at Nordstroms, Taublieb noticed that no two shirts on the rack were exactly alike. If these types of inconsistencies are good enough for an upscale fashion merchandiser such as Nordstrom, it should be good enough for your customer, too.

All experts agree that print-friendly artwork is essential to success in printing over seams.

While it is possible to skillfully print over seams, you have to decide how much time you really want to invest in experimentation and waste.

If you are resourceful and inventive, you can devise a combination of production techniques, pricing strategies, and customer guidance that will enable you to earn a decent margin on garments that include prints over the seams.

Perhaps the buyers at Nordstrom were aware of a JWT marketing intelligence report that listed "Imperfection" as one of the 100 things brand marketers should watch in 2013.

JWT analysts contend that imperfection is acceptable because "Consumers have been seeking 'authenticity' from products and services, and increasingly it's the 'imperfect' that will feel especially authentic." Visible imperfections provide welcome relief from standardized, mass-produced, ultra-polished products and the smooth, shiny surfaces of our digital devices. For example, JWT analysts have observed that at local farmers markets, consumers now value the lumpy shapes of heirloom tomatoes or gnarled carrots. Some marketers have started using real people in their ads instead of digitally perfected models.

So, while it is possible to skillfully print over seams, you have to decide how much time you really want to invest in experimentation and waste. This is where the balance between what's possible and what's practical comes into play.

To earn a higher margin on each shirt, perhaps it does make sense to focus more on marketing than perfecting your production. See what happens if you encourage customers to value each uniquely imperfect shirt as a piece of limited-edition wearable art.

Outsource Some Jobs

If a customer really wants a design that looks far too detailed for screen printing over seams, consider outsourcing the job to a contract decorator that specializes in all-over printing or to a company that offers digital dye sublimation transfers on garments.

With digital dye sublimation, "You can easily transfer across the seams of almost any polyester-based shirt", said Christopher Bernat of Vapor Apparel. "The inks find their way into the fabric very easily. The main limitations are that you need to use a light-colored shirt and you should never print anything less than a shirt that is 65 percent polyester if you want to ink to look vibrant."

Problems can also occur if the garment wrinkles when the design is being transferred. And, the production cost per shirt will be higher and there could be limitations on the size of the image that can be digitally reproduced on a garment.

Digital printing devices can be very effective if overall size is not a factor, or if the garment can be loaded several times, says Winters. "Low-run jobs and variable-printing requirements can make digital printing a no-brainer."

Final Thoughts

"Seams provide an uneven and imperfect surface to print over," says Winters. "Our typical screen printing techniques aren't designed for it."

Specialized pallets and other equipment for all-over printing can be helpful, says Winters, but "It is quite expensive and you better have a market carved out to justify it." Companies that specialize in all-over printing at a high level not only must think about automatic printing equipment, they also have to consider screens, pallets, squeegees, floods, sinks, racks, exposure units and drying equipment.

"We recently worked with a customer who wanted to dive into this area, and their equipment list and floor plans changed significantly," says Winters.

Also consider that the types of all-over garments that are in style today might not be in demand next year. When it comes to garment decoration and fashion, trends come and go (and sometimes come back again). By the time you have pigeonholed yourself into a workflow specifically for decorating certain types of garments, buyers may want something entirely different.

Because screen printing is an art, not a science, there is no one-size-fits-all formula for success. If you are resourceful and inventive, you can devise a combination of production techniques, pricing strategies, and customer guidance that will enable you to earn a decent margin on garments that include prints over the seams. With the right artwork, you can produce garments that look great but aren't necessarily identical or perfect in every detail.

"Test, test, test to see what works for you on your equipment," says Ormond. To expedite your R&D process, attend trade shows and ask questions of the exhibitors, speakers, and consultants. Winters agrees that testing is critical: "Research, test, decide! Walk before you run, and crawl before you walk."

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What's Happening: Digital Transfers

The opportunity for imagers is to support retailers and brands as they attempt to tell a relevant and cohesive brand story to consumers across a multitude of platforms, formats and environments.

The evidence of digital technologies taking root in our industry is increasing rapidly. More and more garment decorators are adopting the use of these new technologies every day. SGIA recently sat down with Eleni Barefoot, of GraphicsOne, LLC; Nick Buettner, of ArjoWiggins; Doug DeWitt, of Conde Systems, Inc.; and Rich Egert, of OKI Data Americas to discuss how today's decorators are addressing these changes — and their challenges.

SGIA: *How are digital transfers enabling traditional garment decorators to meet the ever-changing needs of today's clients?*

Eleni Barefoot: Digital transfers enable garment decorators to print on demand. For instance, not only do today's heat transfer printers possess the ability to print one graphic every two seconds, they also create cost effective, quality products on demand. This means that in an ever-competitive market, traditional garment decorators do not have to turn away small quantities or unusual orders. They can commit to the order with the surety of a quick and profitable turnaround.

Nick Buettner: Digital transfers are allowing vendors to produce shorter runs without the costs once associated with digital transfer, and at a quality level that far exceeds what was available in years past.

Doug DeWitt: Digital transfers give garment decorators the ability to stay "on point" and "on message." If we use the last election cycle as an example, traditional garment decorators using traditional printing methods may have been "on message" Tuesday, but the topic would completely change by Thursday, rendering all of their preparation work, and current inventory, useless.

Simply put, in a world dominated by Internet blogs and 24-hour news cycles, digital decorators can easily keep up with the times. They can take advantage of trends and topics as they happen — in real time.

Rich Egert: The biggest thing that digital transfers are doing is expanding transfer media and substrates, and delivering short-run capabilities that have never before been available. Digital production allows garment decorators the ability to cost-effectively produce customized solutions, and quickly. Digital transfer technology also can break down

Lia Carroll-Hackett, Associate Editor, SGIA