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COVERAGE:**

**Hot Graphics Report**

Page 29

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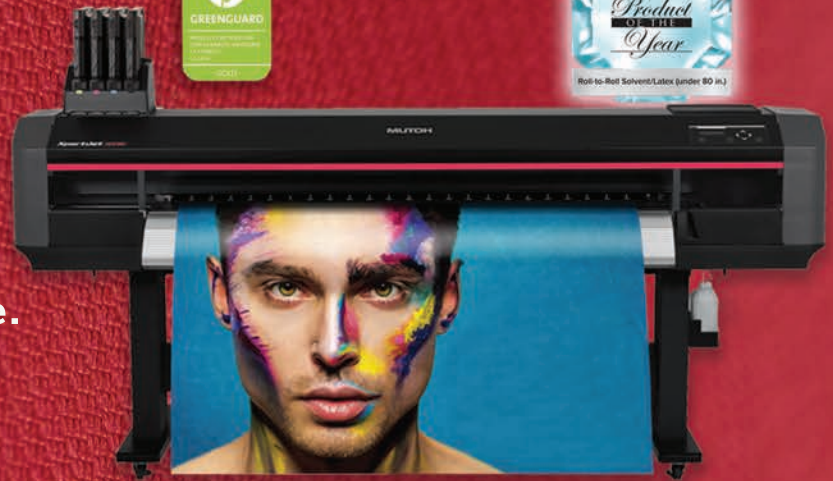
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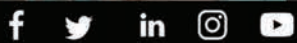
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# GRAPHICS|PRO

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VOLUME 35

AUGUST 2021

NUMBER 12

*“Many small businesses don’t charge what they are worth because they don’t know their costs. They cut prices in an attempt to survive. But if the pandemic taught us anything, it’s that people are willing to pay more for better products and better service.”*

**AARON MONTGOMERY**  
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AWARDS & CUSTOMIZATION

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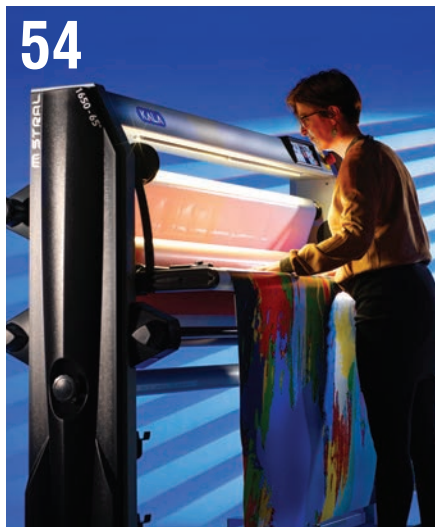


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Showcasing this month's spotlight on floor graphics, the August cover features Todd Gilens and Scott Oliver installing one of 40 unique graphics in Gilens' "Reading Forest" artwork. The project was commissioned by the National Forest Foundation and the Lake Tahoe West Restoration Partnership and supported by a grant from the USDA Forest Service. See [LakeTahoeWest.org](http://LakeTahoeWest.org) and [ToddGilens.com](http://ToddGilens.com) for more information. Photo courtesy California Tahoe Conservancy. Inset image courtesy Erich Campbell.



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## STEP ONE CASSIE GREEN, EXECUTIVE EDITOR



# GET TO WORK

**T**he world is changing yet again. Last year, it was the pandemic that brought life as we knew it to a screeching halt. Kids were sent home, employees were sent home ... everyone was sent home and told to stay there. Now as we emerge, there are a lot of questions as to what the “work life” will look like.

Will it be hybrid, with people working part-time from home and part-time in the office? Will some go back to the office full-time? What’s the new dress code like? And once again, how will we adapt to this new working environment?

This month’s Work Issue highlights something the graphics industry didn’t stop doing, didn’t change. From before the pandemic to during, to now, graphics professionals everywhere never stopped. They went out and *worked*. You all hustled and put your blood, sweat, and tears into staying alive, and we commend that.

As you continue to put your equipment, your people, and yourselves to work in a safe and effective manner, this issue is full of the resources you need when questions arise, like how to get a better floor graphic or how to “hoop” headwear. Because you never stopped working, you never stopped learning, and we never stopped working for you.

Until next time.

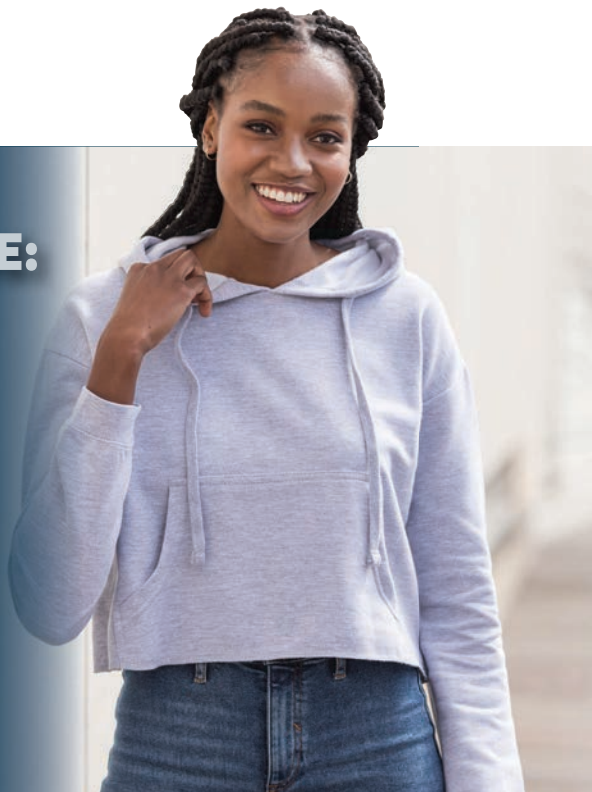
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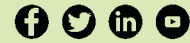
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| SETTING NEW STANDARDS



# BIG SAM

I met Sammy Satterwhite when we were both in high school. He was the senior class president of the largest of our town's three high schools and visited our smaller campus a few times, including dropping in my art class to see his girlfriend, who I shared a table with though I was a year or two younger. Sammy never met a stranger, was truly Mr. Personality, handsome and smart, with a million-dollar smile. But when he went off to college, I lost track of Sammy.

Later, however, our careers would be on a parallel track. After two years of college, I began my small commercial sign business, and about the same time, Sammy came home from the University of Texas at Austin, married another high school sweetheart, and began building log cabins and log homes.

Before long, his business grew exponentially, and mine grew very slowly. But I do remember when he only had one large flatbed truck, on which I hand painted a logo that I would repeat many, many times.

Sammy was a patriotic American, a proud Texan, a history buff, president of his high school's school board, and a true leader in the community. He was also as fine a man as I have known.

We were in an organization or two together and crossed paths regularly over several decades. Eventually his business would employ over 100 people, have manufacturing and sales facilities in several states, and his company, Satterwhite Log Homes, would become one of our country's top builders of log homes and cabins.

Around 2007, after operating a four- or five-person sign company for many years, we started planning a foray into the CNC metal cutting and forming business, as well

as the metal finishing business using the powder coating system.

With the help of my two sons, after doing a lot of homework and two or three years' worth of planning and building, we opened up a facility across the street from the sign shop and started our WPC Services LLC business (which stands for "waterjet-powder coat"). It opened January of 2009, recorded to be the worst month to start a small business in the previous 50 years. I wish I was kidding, but if anyone could time something like that ... I could.

You may remember that the financial crisis of that moment in time was caused by large investment companies and lenders funneling money into mortgages that the government encouraged to be offered with almost nothing being required for borrowers to qualify for. When so many loans went into default, investment giants went bankrupt, the economy staggered, and a deep recession set in. The new home construction business cratered as well, even for Sammy Satterwhite.

After most of a year of bleeding cash, for both Sammy and I, he came to our new facility to talk to me about some powder-coated steel parts we were to make for a few large exposed wood trusses needed on one of their projects. We talked outside on the sidewalk of our new building, which housed all the barely used equipment we had bought on credit.

He admitted that things had never been tougher for him, and he was taking every measure he could to stay viable, pay his employees and overhead, and keep his well-trained staff intact. Then he looked me in the eye and said, "Rick, let me tell you, this has been a mighty humbling experience for me."

"I know what you mean, Sammy, because it's the exact same thing for me," I responded.

"No, it's not the same for you," Sammy contested.

When he saw the puzzled look on my face, he gave me this heartfelt explanation: "It's not the same for you, Rick, because I needed it. You didn't."

Over the next few years, working as hard as he knew how to, applying all his experience, talent, and resources to the task, Sammy rebuilt his business and saw more years of considerable success. One night he caught me working up on the front of his retail wood sales building at about 11 p.m., and he tried to run me off and make me go home and rest.

But I told him I had promised his wife I would have that large custom sign finished before the next day when special guests were coming. I said if he'd made a promise to his sweetheart, he'd surely keep it, and I intended to do the same. He smiled that same million-dollar smile and got in his truck and went home.

That was one of the last conversations I had with Sammy, as a few days before Thanksgiving, November of 2020, COVID-19 took the life of this fine Texas gentleman, my old and dear friend. I will miss his mentorship, his million-dollar smile, and his good example, which shined a light on many, many people, and now has shined a small light on some graphics people, too.

Rest in peace, Sammy Satterwhite, you will be remembered and missed.

*—Rick*



Satterwhite

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# Strokes of Genius

DETAILS ARE FINE WITH VIRTUOSO SCREEN PRINTER KYLE BAKER OF BAKER PRINTS

BY MICHAEL HURLEY



**K**yle Baker had a bad feeling. One of the top concert-poster printers in the country, he was overseeing an exacting six-screen job for the band Wilco, announcing a show on their upcoming tour. The images were coming together nicely, but as his crew readied the final screen, Baker told them to wait.

It was early spring 2020 and COVID-19 was starting to impact many areas of daily life, with the live music industry looking particularly susceptible to the virus. Baker's studio had already been hit with postponements and cancellations, and now he had a vague sense of foreboding. Call it an impression.

An independent screen printer special-

izing in high-quality graphics, 38-year-old Baker has learned to balance intuition and ingenuity as he toggles between running a successful business and producing critically acclaimed works of art. Meticulous attention to detail is essential, not only for each print, but for client relationships, and for understanding fluctuating market conditions.



**Opposite:** Kyle Baker speaks fervently of blending artistry with the pure physics of printing. **Above:** The walls at Baker Prints are plastered with vibrant examples of the studio's exquisite concert posters and album art. (Images courtesy AWT World Trade Group)

Almost a year later (at the time of writing), the Wilco job is still on pause. But by holding back the final screen, Baker protected his business, ensuring that his team's efforts weren't wasted, and the work remains viable and ready to go.

### FALLING IN LOVE

"I started my career as a freelance designer. I didn't set out to run a print shop," says Baker. Sunlight pours through tall windows in his studio on Chicago's North Side as workers move about, checking colors, mixing inks, and making adjustments to the presses. "But when I learned how to screen print, I fell in love with it. The whole process."

The walls are plastered with vibrant examples of the studio's output: exquisite concert posters and album art featuring intricate designs, flamboyant colors, and

fastidious hand lettering. They represent a who's who of international touring acts, including Dead and Company, Bruce Springsteen, Counting Crows, The String Cheese Incident, and The Avett Brothers.

"I find it tremendously challenging and rewarding. I often refer to 'the art and science of screen printing' because I see those as twin dimensions," Baker states. He points out numerous pieces of equipment in his shop that he designed and custom-built himself: a print catch box, screen coating jig, squeegee sharpening station, a removable steel skirt for his exposing table, and an impressive registration and screen tension template system.

Wearing an open flannel shirt over an ink-splattered T-shirt, he speaks fervently of blending artistry with pure physics of printing and devising unique solutions to improve his processes. "And there is a com-

plex matrix of discretion, technique, taste, voodoo, and hardcore empiricism involved in every job," he believes.

Creating and screen printing visually arresting graphics for the music industry — and specifically the performance-intensive jam-band genre — is itself a venerable artistic tradition with its roots in the psychedelic counterculture of the later 1960s and early 1970s. Posters and album covers by the best-known artists from this period, such as Rick Griffin, Wes Wilson, and Bonnie MacLean, reached a worldwide audience through mass distribution and established a set of design parameters and stylistic conventions that continue to be essentially definitive.

Original works and limited-edition serigraphs by these artists have become highly collectible and command formidable prices when they appear on the open market.



Baker has established himself as a talented soloist, printing unique posters for some of his favorite bands. (Image courtesy Michael Green)



Baker's concert-poster work acknowledges and builds on this tradition, and he explicitly cites both Wilson and MacLean as early influences. He says that he does not feel constrained by the familiar visual argot of concert posters or by poster art in general. "I see poster art as the quintessential design challenge. All the fundamental elements of graphic design in one rectangle."

Similarly, with regard to screen printing, Baker is inspired by the physical param-

eters of the process: "Paradoxically, I find the boundaries imposed by screen printing to be very liberating when it comes to making art. It gave me a paradigm in which to create."

#### **PERSONAL HISTORY**

Although Baker says that he is "tremendously lucky to have wandered into my calling," it is not surprising that he ended up in the applied visual arts. His grandfather was an illustrator at the prominent

Chicago advertising firm Leo Burnett. His father became a creative director, also at Burnett, and his uncle was a successful storyboard artist. "I used to think a 'studio' was a room in everyone's house, like the den," he says.

Fresh out of college and working as a graphic designer for a promotional electronics startup, Baker branched out in freelance design work for local musicians and promoters. He volunteered for his first gig, designing a poster for a show by former guitarist for The Black Crowes Marc Ford at the legendary Double Door in Wicker Park.

Baker printed the posters on 11" X 17" paper at Kinko's. He wasn't paid for the job, but years later he was amused to glimpse his work still on display at the club before it ultimately closed in 2017.

Targeting small clubs in Chicago's indie music scene, Baker established himself as a talented soloist, printing unique posters for some of his favorite bands. "I pounded pavement and made an effort to solicit artists I wanted to work for," he says.

“As I got better both at designing for screen printing and the printmaking itself, the jobs were getting bigger and printing by hand was taking a physical toll, not to mention some deadlines were impossible.” Baker bought a press, and soon he was producing prints for other artists as well.

Baker expanded judiciously, determined to remain involved in every aspect of the business even as he assembled a first-rate backing band. Now he is playing on a national stage. “For the most part, my clients have found me. For the lion’s share of my career, it’s been reputation and portfolio.”

### **THE ARTISAN TOUCH**

Baker Prints occupies a narrow but lucrative niche in the screen-printing world, turning out top-quality finely detailed graphics using semi-automatic equipment. “For the vast majority of our work, we print semi-auto on clamshells. Occasionally, we’ll print by hand, sometimes for split-fountains on smaller runs and also random odd jobs such as printing on irregular substrates,” says Baker.

Most artisan screen printers working in graphics are hand printing short runs. And of course Baker himself started out that way, earning his stripes with his hands on a squeegee. “But for most of our work printing manually doesn’t make a lick of sense,” he notes. “We can produce a much better product much faster on press, though of course some art would look exactly the same either way.”

Today with the major production and Fortune 500 companies among his clients, he relishes the precision and consistency that technology allows him to bring to his craft. “For example, we print most halftones at 80 LPI. Doing CMYK at 24” X 36” at that frequency would be pretty much impossible for a human to do repeatedly. We need mechanical control over angle, pres-



Baker’s first screen-printing press was an AWT Accu-Print High-Tech Micro, and he still uses it to this day. (Image courtesy AWT World Trade Group)

sure, register, dot gain ... a stiff breeze will change solid density when you’re printing 80-line on 380 mesh with a razor-sharp 40” squeegee.”

Baker stresses that in order to take full advantage of the benefits of automatic screen-printing equipment, old-school discipline and attention to detail remain paramount. He and his crew work together to solve is-

sues that may arise in the course of a job in an empirical, methodical manner, what he describes as the “heuristic” approach.

### **PANDEMIC PAINS**

Baker has had little time to rest over the years as he scrambled to keep up with orders,

*continued on page 94*



# WE'RE BAAAAACK!

## A SUMMER VOLLEYBALL THEME SCREEN PRINT

It's summertime, and we're baaaaack! Well, almost. It's been like waiting for the pool to open, or worse. We try to be first, so we can get the perfect spot and then we can hit the water, baby! It's been a long 14 months-plus and we are so ready.

Oh, how we have missed the barbecues, concerts, and just plain getting together. Heck, being able to see a friend and have a handshake or a hug seems like a lifetime ago, but the pool is opening again, and summer is the main event. Time to roll out the net and "pass, set, and hit" for some overdue beach volleyball. The industry is coming back to life, and the belt is rolling down that decorated apparel for summer events.

As you may or may not know, we do a lot of volleyball. It's kind of our thing. We have volleyball coaches, college and high school/club players, parents, and students all on staff. Last year was anything but typical or normal, and we won't lie, it felt like an old friend had returned for good when our volleyball event accounts began to return.

For this project, this particular returning client definitely had to have a summer beach theme: the first tournaments post-COVID known as Beach Bash! The feeling and energy of warmth from the sun was the perfect way to go. We also designed it with a free-flow, loose style that utilized six colors to stay within budget.

### SUMMER VIBES

The design was created using a radial layout in Adobe Illustrator for a clean and somewhat trippy look. Though Illustrator wasn't necessarily created



This particular returning client definitely had to have a summer beach theme. (All images courtesy Lon Winters)

for screen printers, it gives us the power to maintain craftsmanship on a professional level.

With Illustrator preset options for design elements, there are several brush strokes that we can apply to a path using the Brush palette. We found the Brush palette under the window menu at the top of the screen and scrolled down for the extra texture brushes. The Chalk/Charcoal/Pencil and the Paintbrush palettes gave us a combination of rough edging for the strokes we applied. The brush types and the paths were drawn in a circular fashion to create the center for our sun.

Changing the width of our stroked paths allowed for different looks and different options. Though the design is rather simple, it's also very effective for the look we were going for.

For separation purposes, we turned the stroked paths into objects instead of paths with the effect applied to them. We had a stroked path and the expanded art next to it selected to visualize the differences. To expand the selected paths, we went under the object menu and scrolled down to the expanded appearance option to make them vector objects. This was helpful for the output process as it allowed for chokes and gradients to be applied as necessary.

Color theory was nice and simple with primaries and secondaries only. As the sun sank into the horizon, many foreground objects began to silhouette. Palm trees were a favorite design element and helped pop the colors. Since we were focusing on volleyball, we added a net and a swiped stroke to match the textures going on in the setting sun.

By placing the flattened image in Illustrator, we used the Image Trace tool with the image selected for a quick trace. Using the black-and-white logo option for image trace gave us a clean vector that was easily

manipulated for our design. We made some adjustments to our swipe by using the warp options under the effect menu after grouping the multiple pieces.

Once the design elements were arranged, we added the text to finish it out. For an energetic feel because we are so excited to be back, we used a fun, thick-scripted font with a great flare. We double stroked it to beef it up and give it some weight. Our stroke weights had a fair amount of thickness so we weren't wrestling thin areas between the colors of the strokes as it might have created issues on press.

### PERFECT PRINTS

Since this isn't a complex design full of half-tones, it was a relatively easy white printer or base-plate to build. This was going on a lighter-color garment, and there wasn't any reason to put a base white under the navy we had designated. Typically dark inks aren't based and lend a nicer feel to the hand on the garment.

We added gutters in between colors on the base that were butted next to each other to reduce movement of the inks on top, which would reduce smearing and keep colors with a nice tight clean edge. We knocked

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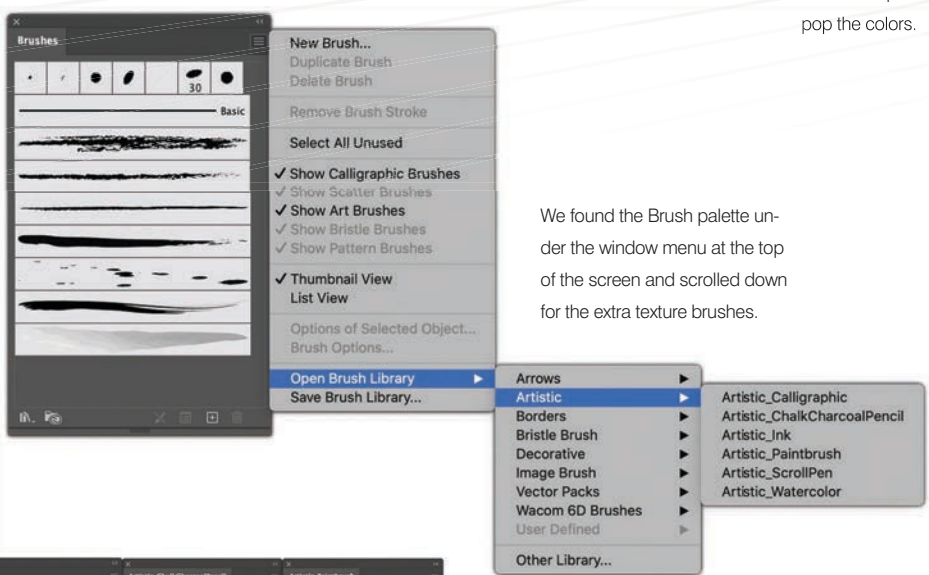
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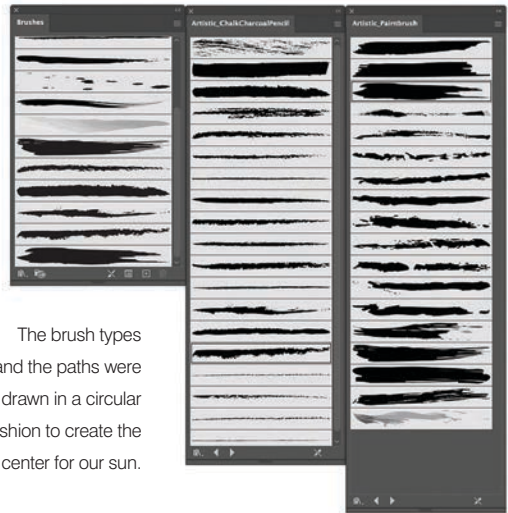
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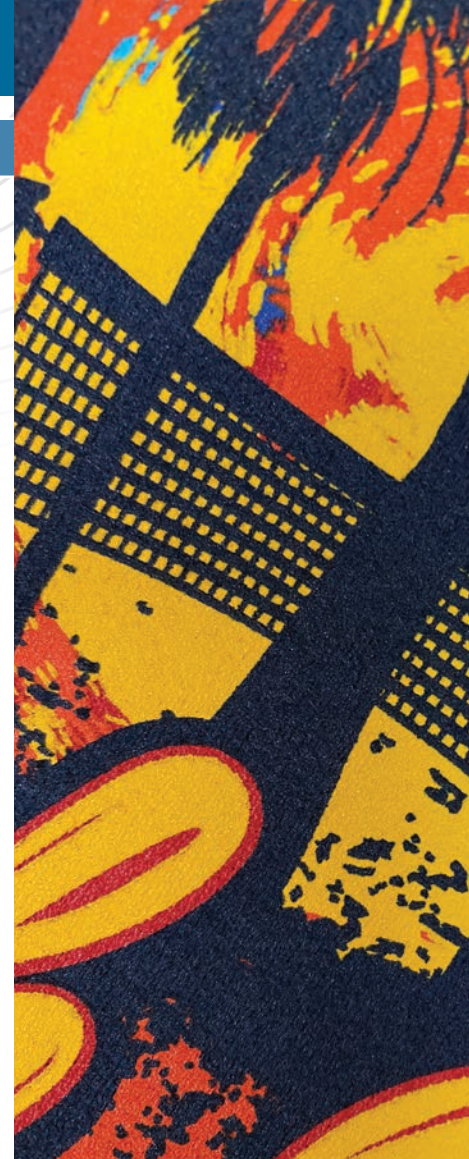
Palm trees were a favorite design element and helped pop the colors.



We found the Brush palette under the window menu at the top of the screen and scrolled down for the extra texture brushes.



The brush types and the paths were drawn in a circular fashion to create the center for our sun.



Beach Bash Beach Bash  
Beach Bash Beach Bash

**Above:** For an energetic feel, we used a fun, thick-scripted font with a great flare. **Right:** We ran the white printer first, followed by all the colors darkest to lightest, least coverage to most.



the royal, red, and the orange base into a 40% halftone as well, also to keep the hand down and reduce smearing so we could run mostly wet on wet.

Once seps were completed, we outputted on CTS with frequencies 55 LPI at 22.5 degrees. No real halftones were needed other than for the base. We ran the white on a 156 TPI at 35 N/cm<sup>2</sup> tension using 65/90/65 triple-ply dual durometer squeegee followed by a flash and smoothing heated iron.

Next, the RFU primary and secondary-colored inks and the highlight white all ran wet on wet on 230s at the same tension using 75/90/75s. We ran the white printer first, of course, followed by all the colors darkest to lightest, least coverage to most, and it all ran great. Sometimes it is better to be lucky and good!

Beach Bash is a two-weekend volleyball tournament, and registration was through the roof. The event was fantastic, and our client is so excited to be hosting and running tournaments again. They survived ... we survived. We can't wait to really get it going again. We're baaaaack! **GP**

At 21 years old, **LON WINTERS** was the production manager for Ocean Pacific and started his 30+ year career reclaiming screens. He's the president and founder of Colorado-based Graphic Elephants, an international consulting firm and apparel decoration studio specializing in screen printing technical advances, plant design, layout, troubleshooting, productivity, quality analysis, and complete apparel decorating solutions. Learn more at [www.graphicelephants.com](http://www.graphicelephants.com).

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Large billboard graphics make eye-popping designs with a nod to '90s styling. (Image courtesy JERZEES)

# Creatures of Comfort

**CURRENT TRENDS IN EVERYONE'S FAVORITE FUZZY FLEECE**

BY CARLY HOLLMAN



With the chaos and uncertainty of the last year, as well as the major shifts in our daily routines, we've all looked toward the things that provide us comfort. This includes food (remember when we all made sourdough?), TV and movies, crafts, hobbies, and perhaps most of all, unrestricted clothing. Within the clothing category, one item almost everyone can agree is their go-to comfort piece is the tried-and-true sweatshirt.

Fleece and outerwear skyrocketed in popularity last year, and while workwear may be starting to comeback, as creatures of comfort, people are still holding on tight to their favorite fuzzy items.

## **THE SHIFT TO SWEATS**

Nearly everyone has a favorite fleece or two they reach for first, whether it be because of its fit, softness, or decoration that stands for what they love. And based on the sales of the last 18 months, a lot of people added to this collection.

"Fleece and outerwear used to be considered a seasonal item. But with the pandemic and the move to working at home or online learning, we have seen an increase in fleece purchases," says Jeannette Chui, Next Level Apparel.

This surge could be in part because of the increase in online shopping, suggests Greg Brown, Citadel Brands, but paired with that is, again, its comfort level and familiarity. The longer we stayed inside, the more common it became to see less professional dressing on our Zoom calls

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and more T-shirts, caps, and, of course, sweatshirts.

Even as we start to go back to “normal,” there has been a mass shift in what we consider professional dress, says Katie Zimmerman, Fruit of the Loom, JERZEES, and Russel Athletic. “We’ve become accustomed to comfort and versatility. While some people are required to return to professional settings, that doesn’t mean that they will go back to dress pants, heels, and even jeans easily.” Instead, she says, what we can expect to see is a hybrid of the two worlds, where the sweats become cleaner and work pants and denim become more like sweats.



**Above:** Stripes and raglan styles help take fleece to the next level. (Image courtesy JERZEES) **Left:** Shorter cropped styles offer more of a streetwear look. (Image courtesy Citadel Brands)



### **MODERN COMFORT**

So, what does this modern world of elevated fleece look like? Well, first, it needs to be soft, obviously. But one new update is that end-users are looking for heavier-weight styles, says Brown, noting that 80/20 and 70/30 ring-spun cotton with a 100% cotton face fleece is frequently requested.



Unique details help make basic fleece more office appropriate. (Image courtesy Next Level Apparel)



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Another fabric consideration, says Zimmerman, is using more sustainable offerings. “I see cotton growing in importance as people are consciously shifting to using less plastic. And, for styles containing poly, companies are trying to move away from virgin poly and switch to recycled poly to do their part in reducing production of new plastics.”

Falling in line with lifestyle, one of the biggest trends in silhouettes is an oversized fleece. According to Zimmerman, this is due to, once again, being comfortable. “Less fitted, relaxed, easy throw-on pieces speak to comfort,” she says. The other influence in this is the current inclusion movement that encourages gender-neutral pieces that allow anyone to feel comfortable in their wear and purchase of an item.

If you’ve watched any amount of Tik Tok, it’s easy to see that perhaps the biggest fashion trend of the moment is ’80s- and ’90s-influenced apparel. This shows up in cropped tops and matching sets, says Chui, as it plays to streetwear and influencer culture.

This is also evident in the popularity of crew neck styles as opposed to hoodies in the collegiate market, says Brown, or with things like raglan sleeves, striping, and ringer styles, adds Zimmerman.

Colorways have shifted as well, note our sources. This means darker and richer colors such as forest green, sage, denim, and coral pink, as opposed to the pastels that were popular in years past. Lighter colors are richer in hues such

Oversized fleece not only adds to its comfort level but it also makes the look more gender neutral. (Image courtesy Citadel Brands)

## FLEECE, FROM TOP TO BOTTOM

**F**leece isn’t limited to tops only! As we lean into comfort, it makes perfect sense that people are taking their favorite fuzzy apparel to full sets. Katie Zimmerman, Fruit of the Loom, JERZEES, and Russel Athletic, notes that both joggers and fleece shorts sales have increased in the past year.

Not only do these styles allow for comfort when running around town or working from home while not giving away how comfortable you are, they can be dressed up for a more street, influencer style that can go, safely, out for brunch or drinks with friends.



Classic features scream collegiate market. (Image courtesy Next Level Apparel)



STAY ON TREND FOR 2021 AND LEARN WHY THE STYLES DISCUSSED IN THIS ARTICLE CONTINUE TO BE POPULAR: <http://gpro.link/2021apparel>.

as an uplifting yellow or a sunset color, says Zimmerman. That said, neutral colors such as oatmeal and heather gray lend deep, dimensional, and textured appeal to basic styles.

Perhaps most surprisingly, though, says Brown, is the increase in white fleece styles. “With more folks being at home with more time to think out of the box, tie-dye/garment-dye have given areas for experimentations that work, and white has been a driving force,” he says.

And because of tie-dye’s popularity, adds Chui, we can expect to see a shift back toward more gradient and ombre prints.

As for physical decorations, fleece is a highly versatile medium. It can take screen printing, embroidery, appliqué, and direct-to-garment, although fabric composition

and weight determine which method will work best. According to Chui, embroidery requires a heavier weight base and recommends at least a 5-oz. style.

And fortunately, heavier is in, which makes today’s fleece a perfect match for direct-to-garment, says Brown, ensuring a strong and colorful print. That leads to which graphic trends will match the silhouettes and styles of the fleece of 2021–2022.

Chui notes one popular trend is the unique placements of graphics such as on the sleeve or collar. “Doing so creates a more elevated and customized look. It appears as a well-branded garment and gives an appeal to end-users that there’s a story to it,” she explains.

For the more standard chest graphics, Zimmerman says that large billboard

prints make messages stand out while also sticking to the throwback look of the substrate. This can also be seen with more handcrafted-looking retro graphics that harken back to classic collegiate looks.

Whether classically oversized and comfy or slightly elevated for going to the office, fleece is no longer a seasonal delight, says Brown. With heavier styles, crops, and unique details, there really is a fleece style for everyone. **GP**

**CARLY HOLLMAN** is the former editor of *Printwear* magazine with over nine years of experience covering the decorated apparel industry. She currently works as a freelance writer and artist based in Denver, Colorado. She can be reached at [carly.hollman@gmail.com](mailto:carly.hollman@gmail.com).

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# GRAPHICS|PRO



# 5 Simple Steps to Headwear “Hooping”

BY ERICH CAMPBELL



With the stabilizer temporarily clipped in place, it's easy to see how the full ring setup creates a firm, structural element to fill out and stabilize the cap crown. (All images courtesy Erich Campbell)

**F**raming up caps on wide-format hoops can seem daunting at first, but with a few simple steps and care taken at the most critical points in the process, you can make the most stable substrate possible for your embroidery designs. With your cap straps open and materials at hand, it's time to “hoop” some headwear.

**Step One:** Place your cap frame on the firmly mounted gauge and open the attached straps.

**Step Two:** Place the stabilizer on the frame, sliding it under the alignment bracket.

**Note:** For complete stability, especially on unstructured caps, you may want to use a length of stabilizer that spans entirely from one of the rear posts around the frame to the other post as these posts provide the only stable object to which the cap's crown will be attached along the vertical axis of your design. Using a full span of dimensionally stable material from post to post creates a cylinder of material with complete attachment to the full area of the horizontal and verti-



The teeth at the front of the strap should fit snugly in the seam between crown and bill; they should never be further up the crown, nor cinching down or pressing on the front panels.

cal axes of the frame to which you can attach the cap crown. You may need to temporarily clip the stabilizer in place if you elect to use the full span as explained here.

**Step Three:** Flip the sweatband down and out of the cap crown and slide the cap onto the frame, making sure to slot the sweatband under the alignment bracket with the stabilizer while keeping it smoothly placed around the frame. Make sure to keep the stabilizer and the rear posts inside of the cap crown.

**Step Four:** Pull the frame's strap over and around the bill of the cap, making sure as you do to align the strap's teeth with the seam between the crown and bill while keeping the bottom side seam of the cap aligned with the teeth on the frame. Proper alignment of these teeth with the seams on the crown ensures that your design will stitch in proper alignment with the seam and appear straight on the finished cap.

Note: The teeth in the front of the strap that are on the far side of the strap from you as you hoop will fit

snugly into the seam between the bill and the crown, whereas the teeth on the sides of the strap that are the near side of the strap will align just above the bottom crown seam. These side teeth pair with teeth on the frame, which should align with the seam to arrest it.

Fit the loop on the strap to the folded hook on the frame and tighten the strap, making sure to align the front seam with the line on the alignment bracket.





LEARN ABOUT OTHER DECORATING OPTIONS FOR HEADWEAR HERE: <http://gpro.link/headdeco>.

**Step Five:** Smooth the side panels of the cap, working from the center of the hat toward the back, and clip any loose material to the posts at the back of the frame, eliminating as much wrinkling as possible. If you have temporarily clipped the stabilizer to the posts, you may have to remove those clips and use them to clip both the material and stabilizer to the posts.

Note: Though the clip configuration differs from frame to frame, the aim of these back clips remains the same throughout. Smooth out the side panels and firmly adhere the sides to the rear posts to enhance stability for the run.



This cap was improperly framed, and the design was improperly placed, allowing the top of the equipment in the design to stray too far into the cap crown. Stitching too high in the bubble at the top dead center of a six-panel hat can cause excessive shifting; the underlay popping out and the visible distortion are part of that shifting.



Even on an unstructured hat, this dense, tall 3D-foam design can stand on its own and maintain registration when the cap has been securely hooped and stabilized.

Your caps are now ready to run. Your best results will come from using caps that are friendly to the embroidery process and designs properly digitized for the shifting landscape that is the cap crown. By and large, all cap designs should stitch with the apparent motion of the needle bottom up and center out. That said, without properly framing them up, any cap and design can suffer. **GP**

**ERICH CAMPBELL** has more than 18 years' experience as an award-winning digitizer, eCommerce manager, and industry educator. He empowers decorators to do their best work and achieve a greater success. A current educator and long-time contributor to industry trade publications, Erich takes every opportunity to provide value to the industry.

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2021

Image courtesy  
Stahls' Hotronix



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# PRESS ON

## UPDATES IN HEAT PRESSES MEAN MORE OPTIONS FOR DECORATORS

BY CASSIE GREEN

**A**s processes such as heat transfer and sublimation have grown in popularity to customize both hard and soft substrates, improvements in the equipment have also increased. When it comes to the heat press itself, changes have been made to size availability, quality, and even substrates that can be pressed. From specialty presses to clamshells and more, heat presses have become a must-have piece of equipment for most graphics businesses.

### MAJOR CHANGES

It might seem like the heat press is a simple piece of equipment, but

when you start looking at features such as temperature control, pressure, platens, and even specialty designs like mug presses, it's clear that these are more than just a heating device. "The major changes in heat presses over the last few years have been in size, quality, and product range," states Aaron Knight, Geo Knight & Co. Inc.

Knight notes that a lot of factors have come into play when it comes to the changes these machines have seen. "The quality of heat presses over the past few years has actually plummeted, with the advent of a plethora of overseas machines competing

with each other for the low-end cost range of machines," he believes. "Subsequently, an industry reaction to that product market has been to depend far more exclusively on USA-made equipment that has immediate and thorough product support available, and the ability to keep machines up and running for many years of heavy use."

"Integrated digital controls are now almost uniformly incorporated in all but the most basic presses," adds Henri Coëme, HIX. "This has provided the user with better control over temperature, time, and pressure, and

There are a variety of heat presses currently available, including swing-away and clamshell. (Images courtesy Geo Knight & Co. Inc.)



made it easier to achieve repeatable results.”

On the size side of the equation, there are also some emerging trends and changes happening. “An explosion of large-format sublimation full-color printing onto textiles and metals has caused large-format heat presses to increase in popularity,” Knight states. He adds that presses can accommodate more and more substrates with features like increased interchangeability, bottom heat, and specialty platens.

Ben Robinson, Stahls’ Hotronix, expands on the platen topic. “Heated lower platens ... are designed to reduce the risk of scorch marks on heat-sensitive polyester or synthetic fabrics,” he specifies. On challenging garments such as polyester, this feature also reduces the risk of dye migration. He also draws attention to the threadability feature.

“The threadable platen design allows you to drop seams, zipper fronts, and button areas off the press, providing a smooth, even print surface,” he notes. “This feature cuts down on the need for additional accessories such as pillows or pads.”

### BEST FOR BUSINESS

All of these features should be on the radar of any graphics shop looking to invest in a heat press. Like any equipment purchase, research is at the top of the to-do list before making a move. “Shops should look beyond their immediate needs and consider future expansion and demand,” Coëme suggests. “A press that does simple transfers now may need to be more versatile tomorrow.”

One place to start is educating yourself on the types available and what your shop

plans to decorate, both now and in the future. Knight lists clamshell, swing-away, automatic swing-away, and large format as some of the basic models currently available. Each has its own benefits.

“Swing-away presses lend themselves more to time-consuming projects like sublimation on garments and on firmer substrates,” says Coëme. “Clamshell presses provide a smaller footprint and greater production speed, especially semi-automatic and air-automatic presses.”

For the hobby or home-based business, where certain constraints apply, Coëme also has a few suggestions. “Analog presses are easier on a start-up budget and provide excellent value for money,” he believes. “They are simple and fun to manipulate for first-timers.”

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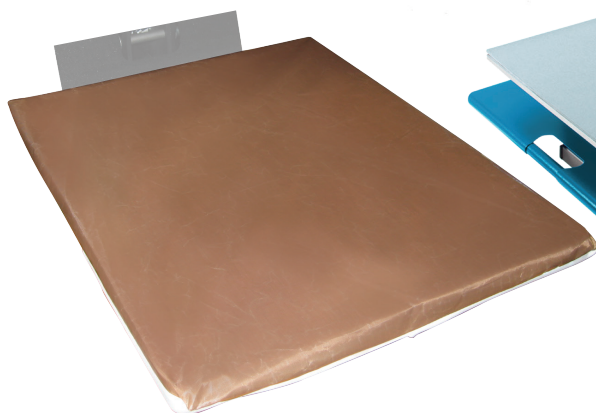


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**Left:** Investing in a specialty press such as a hat press is a great option if your customers consistently ask for caps and hats.

**Right:** Shops should think beyond their immediate needs and plan for the future when deciding what kind of heat press to purchase. (Images courtesy Stahl's Hottronix)



Keep the pad safe from transfer inks and the impact of harder substrates by using pad protectors. (Image courtesy HIX)



When both large quantities and size of substrates is a requirement, only large-format presses can do the job. (Image courtesy HIX)

## CLAMSHELL VERSUS SWING-AWAY

BEN ROBINSON, STAHL'S HOTRONIX

With so many heat presses on the market, it's hard to choose the right starter press for your new or expanding business. Do your research and determine which features and benefits will help maximize your investment. The first question: "Should I choose a clamshell or swing-away type/design heat press?"

### CLAMSHELL

The type of heat press you choose is largely based off the size of your business, personal preference, and workspace. Let's dive into the positives and negatives of most clamshell heat presses:

#### PROS:

- More portable frame and build
- Fewer moving parts
- Lower price tag
- Compact size for more table space
- Easy to use

#### CONS:

- Users have to work directly under the heat
- Reduced layout area for apparel decoration

### SWING-AWAY

Next, we'll look at swing-away heat press machines. These types of presses offer a few extra features and functionalities, so it's smart to look at the pros and cons for these presses as well:

#### PROS:

- Full layout and work area
- Heat-free working space
- Easier to achieve even and level pressure
- Works well with thicker garments

#### CONS:

- Requires more space to fully use swing-away function
- Not as portable due to it being heavier than a clamshell

But for shops that need something extra, like a large-format press or even a specialty press, there are other factors to consider. “Large format will require more power, be used for larger image areas, and is not necessarily the most efficient way to print very small areas, due to much longer loading times and heat platen idle times,” Knight points out.

“Your business model will dictate what type of press you need,” Robinson adds. “Most people are fine purchasing the largest platen for a normal garment press, a 16" X 20" size. This size offers a lot of flexibility, allowing you to print oversize jerseys, jackets, team uniforms, and more.”

The same mindset applies to shops looking at cap or mug presses. “Most people will purchase a cap or mug press when their

customers consistently ask them, ‘Do you print caps/mugs,’” says Robinson. If there’s a profitable market for caps, then it makes sense to purchase a cap press.

Beyond the size and style conversation, maintenance also has a place in shop’s discussion. While heat presses are fairly simple when it comes to maintenance, the top priority is cleanliness. “Make sure the press is kept clean, especially the silicone padding and heat platen,” emphasizes Knight.

“Even the best machine can use a little grease now and then,” adds Coëme. “Keep your machine clean and the pad safe from transfer inks and impact of sometimes-harder substrates by using pad protectors.”

But when it comes down to it, Robinson has one simple piece of advice for those purchasing a heat press: “Always purchase the

best quality press you can afford.” There are so many ways a shop can use this equipment, and so many opportunities for expansion, that this makes perfect sense.

“Ultimately demand will drive production,” Coëme finishes. “Investments in these techniques can be high, but there are entry-level solutions for both, and well within the range of print shops who (are) considering an expansion.” **HGR**



**CASSIE GREEN** is the executive editor of *GRAPHICS PRO* magazine, and previously served as the editor for *A&E* magazine. You can reach her at 720-566-7278 or [cgreen@nbm.com](mailto:cgreen@nbm.com).

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# CUSTOMIZING PERFORMANCEWEAR WITH HEAT TRANSFER VINYL



**Top:** This Posi-UV Pro T-shirt was decorated using fluorescent yellow Siser Easyweed and matte black Siser Easyweed. **Above:** The Digi Camo T-shirt: For this design we did an inlay instead of layering the vinyl. (All images courtesy Brooke Ruebke)

## TIPS, TECHNICAL ADVICE, AND EXAMPLES

BY BROOKE RUEBKE

Performancewear comes in all shapes, sizes, and fabrics. By decorating your own athleticwear, you can create beautiful, custom clothing. So how can you achieve that unique look for your performance garments? That's where heat transfer vinyl comes in.

Heat transfer vinyl (HTV) is a great way to customize clothing. The options for HTV are limitless and can spark creativity in everyone. Whether you are a small crafter, own a T-shirt business as a side-hustle, or are a full-time business owner, there is a heat transfer vinyl that will fit your needs.

HTV can be applied to many surfaces like towels, hats, bags, jackets, and much more. To get started with the heat transfer vinyl process, you need four things: a vinyl cutter, a heat press, heat transfer vinyl, and the garments you will press onto. Once you have those things, you are ready to begin making customized performancewear.

### HELPFUL TIPS TO KEEP IN MIND

Before we dive deeper into the HTV process, here are some common things to keep in mind:

- Mirror your design. When you are ready to cut your HTV, make sure your design is mirrored because when you press it, the design will be flipped.
- If you are pressing more than one type of HTV, you might have to adjust the amount of time you press so you don't overheat or burn the vinyl.
- Use a Teflon pillow if you are pressing on thick seams or if you are pressing a polyester garment so there are no press marks.



- After you press your garment, wait 24 hours to allow the adhesive to settle before washing.

## HEAT TRANSFER VINYL PROCESS

The heat transfer vinyl decorating process is easier than it might seem. After you make your design, load your HTV into the vinyl cutter. Each cutter and vinyl has different instructions, so make sure you know those before jumping into the process.

Once you have your HTV cut, you need to weed your design. Weeding HTV is the process of removing the excess vinyl from lettering or a design that has been cut on the cutter. To do that, you can use tweezers, a weeding pick, a weeding hook, or a hobby knife.

After your design is weeded, it is time to press it. Place the garment onto the bottom platen of your heat press. Then, put the weeded design onto the garment. Each type of vinyl has a different pressing time and temperature, so double check those instructions before pressing. Once the design has been pressed, the shirt is ready to wear or sell. Now let's talk about different HTV on various athletic shirts.

## HOW HTV IS USED WITH DIFFERENT PERFORMANCE GARMENTS

For each of the designs featured in this article, we used the Graphtec CE7000 vinyl cutter and the WALAPress Pro auto-open heat press. Please consult your owner's manual when using different brands for proper usage and settings.

### Digi Camo T (100% polyester)

For this shirt, we wanted to add dimension to complement the camouflage pattern, so we used Siser white brick for the

Rashguard T-shirt: Reflective HTV is a good idea for running and biking clothes because the vinyl has tiny glass beads embedded in it to make it very reflective.

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home plate. Brick is a great way to add a 3D effect to your design because it is 600 microns compared to 90 microns, which most standard HTV is.

We cut the bats out of brown Siser Easyweed to coordinate with the green-colored camouflage. For this design we did an inlay instead of layering the vinyl. At 305 F, we pressed our Siser brown HTV for a one-second tack, then we proceeded to press the Siser brick for a 10-second tack. After that, we turned the garment inside out and pressed for 20 seconds.

**Posi-UV Pro T-shirt (100% polyester)**

This tennis design was created out of fluorescent yellow Siser Easyweed and



The Posi-Charge Racer Mesh T-shirt is quite stretchy, which can pose challenges.



Polyester can be a heat-sensitive material, like with this Peak T-shirt, so we made this design out of low-temperature HTV.

matte black Siser Easyweed. We chose this combination to spice up our design and because it resembles a physical tennis ball and racket. At 305 F, we tacked the black HTV for one second, then did our last press for 15 seconds.

**Rashguard T-shirt (90% polyester, 10% spandex)**

For this design, the words are made from Thermoflex Turbo low temp, and the bike is Siser Easy Reflective. Reflective HTV is a good idea for running and biking clothes because the vinyl has tiny glass beads embedded in it to make it very reflective, as you can see from the zoomed in photo. We pressed the Siser Easy Reflective at 310 F for a five-second tack, then did a quick five-second press with both HTVs.

**Posi-Charge Racer Mesh T-shirt (100% polyester)**

Mesh shirts can be really stretchy, so we used gold and red Siser Easyweed Stretch here. We adjusted our pressure for pressing, since stretch HTV requires more pressure. Then, we did a one-second tack

at 320 F for the red, and after that we did a final press of 20 seconds.

**Peak T-shirt (80% polyester, 20% cotton)**

Polyester can be a heat-sensitive material, so we made this design out of low-temperature HTV. We used white and black WAKut Express. For this design, we did a one-second tack at 280 F for the first layer, then finished with a five-second press.

**Posi-Charge T-shirt (100% polyester)**

Here we used low-temperature HTV yet again to protect the polyester. We used white, green, blue, and black Thermoflex Turbo low temp for this design. We tacked the white, black, and blue simultaneously at 280 F for three seconds. Then, we pressed the green and the rest of the design together for five seconds.



Low-temperature HTV was used yet again to protect the polyester Posi-Charge T-shirt.

## FINAL THOUGHTS

Decorating performancewear can be easy as long as you follow the application instructions. The HTV you choose will depend on what activity the performancewear will be used for. If you are decorating a very stretchable garment, stretch HTV is the way to go. If you are using HTV on polyester or another heat-sensitive fabric, a lower temp vinyl is the best choice to avoid press marks and burning the material.

If you want to add an additional safety measure, a reflective HTV is also a great choice. Overall, using heat transfer vinyl is a great way to decorate your performance wear. **HGR**



**BROOKE RUEBKE** is the R&D specialist at Heat Transfer Warehouse. She is also the social media coordinator and works with partner relations.

Originally from Ada, Minnesota, she now lives in Fargo, North Dakota, and has been a part of the Heat Transfer Warehouse team for almost three years, while attending school at NDSU. Outside of work she enjoys spending time with friends, family, and her yellow Labrador retriever, Bella.

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# SUITABLE SUBSTRATES

## A Q&A ON THE VARIOUS SUBSTRATES THAT WORK WITH HEAT TRANSFER

BY GRAPHICS PRO EDIT STAFF

From cotton T-shirts to athletic uniforms, heat transfer is a great way to personalize apparel of all types. Some substrates work great, some may pose different challenges. We sat down with **Bill Armitt**, co-founder and director of product development at SupaColor, to discuss the different substrates that can be decorated using heat transfer vinyl, some of the challenges decorators might face, and how they can ensure a quality end product.

### **Q:** What is the ideal soft substrate for a heat transfer?

**Armitt:** Many fabrics are suitable for heat transfer printing, with the most perfect substrate for a heat transfer being cotton. It can take a lot of pressure and doesn't sustain heat marks. Nearly any garment that is intended to be worn or carried — from cotton Ts, blended fabrics, and 100% polyester, to some nylons and acrylics — can be printed with heat transfers. The key consideration is the garment's ability to handle the pressing temperature required to transfer, and it will ideally also have a surface where the transfer can get a good grip, particularly on clothing that requires washing.

### **Q:** When working with a polyester garment, how can decorators ensure a quality final product?

**Armitt:** Not all polyesters migrate. One way decorators can test for migration is to spray some water onto the fabric, then use plain white photocopy paper and press. If you see any color transfer onto the paper, then there's a good chance it will migrate. Some transfer suppliers also supply a test strip that you can press and leave for a few days (over a weekend). This will show a decorator the best transfer type to order.

Be careful as migration does not always happen immediately — sometimes it can take days or weeks. I always stress that if you are worried and are asking that about migration, always opt for something such as a Blocker option. A Blocker may cost a little more, but it will let you sleep at night. One fabric I suggest always ordering a Blocker for is anything that has a sublimated pattern or design in it. Sublimation is heat pressed, so when you press your transfer over the top, it heats up again and will migrate into the print.

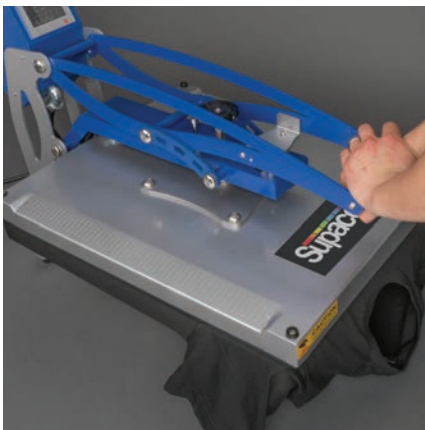


Nearly any garment that is intended to be worn or carried can be printed with heat transfers. (All images courtesy SupaColor)



There is no real one-size-fits-all transfer. Test your products and select the transfer best suited for each one.

# HOT GRAPHICS REPORT



The key to pressing any heat transfer is temperature, time, and pressure.



Anything that does not lay flat on a heat press has the potential to cause pressure issues, so you should position your garment properly.

**Q: Many customers want multiple products decorated, including athletic bags, face masks, and even shoes. When working with items that will experience a lot of use, what should decorators do to make sure their transfers hold up to the wear and tear?**

**Armitt:** There is no real one-size-fits-all transfer. Anything that is designed to wash and wear — especially if they have a rating of 50+ washes — will be the best option for clothing. However, you would not expect to wash an athletic bag very often, so a transfer more appropriate to the fabric and application onto that material is better. Hats are another garment to consider. If you want to bridge the seam of a six-panel hat, then you'll need the right transfer.

**Q: Do you recommend heat transfers for high-pile items, such as towels or robes?**

**Armitt:** Transfers will adhere to high-pile items but suffer when washed. They look lumpy and uneven as does the rest of the pile after washing. You can, however, successfully transfer onto the band of a towel with good results.

**Q: What about substrates like silk?**

**Armitt:** Silk can be pressed but needs a very light touch. You need to test and practice.

**Q: When working with heat transfers, how can decorators deal with hard-to-place spots, such as around the curve of a cap or in a small area?**

**Armitt:** The key to pressing any heat transfer is temperature, time, and pressure. Missed accuracy on any one of these will cause problems. The most frequent of these problems is pressure. Anything that does not lay flat on a heat press has the potential to cause pressure issues, so you should position your garment properly. Always remember to balance the pressure — what you do to one side of the platen, do to the other side of the platen. Most heat presses have a heat plate or a platen that moves, so they self-equalize the pressure. If you only build one side, then the pressure will be uneven.

There are options available on the market for building up an area. I find one of the best options is to buy a spare rubber platen mat and cut that down, as the consistency is perfect and you will end up with a selection of blocks you can use for years. Always make sure the block is larger than the transfer and readjust your pressure to suit.

**Q: What about hard substrates — how can a decorator ensure a quality final product using heat transfer on items like drinkware?**

**Armitt:** Hard substrates such as drinkware can be transferred by sublimation transfers onto items that have a suitable polyester coating for the sublimation to transfer onto. These do require specialty transfer presses that wrap around the item. There is no substitute for testing various items you can press onto, such as wood or even paper bags. **HGR**

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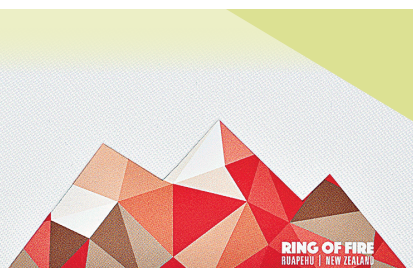
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It can be challenging to have the final design line up perfectly. Use the transfer mask tip outlined in this article to avoid this issue. (All images courtesy Liz Hood)

# SUCCESS WITH SPECIALTY HEAT TRANSFER VINYL

BY LIZ HOOD

**H**ave you become an expert at pressing garments with one or two different kinds of heat transfer vinyl? Do you avoid anything that looks like it might be hard to work with? Does the thought of trying to cut and press multiple products or layers sound scary?

Here's a collection of tips and tricks for achieving success with any type of specialty heat transfers. There are so many companies now offering print-on-demand in solid colors. Those who add finesse to their final garments with specialty heat transfer vinyl (HTV) will automatically stand out in this crowded market.

## WHAT IS CONSIDERED SPECIALTY HEAT TRANSFER VINYL?

This could be anything outside the normal solid-color HTV. There are many options out there: glitter, dimensional ultra-thick, reflective, metallic, patterned, perforated, and embossed. There are even special-effect heat

transfers that change color when heated or exposed to UV light, glow in the dark, and even chalkboard HTV that you can write on with chalk and chalk markers. With so many specialty heat transfers on the market, it can seem overwhelming.

Specialty HTVs are typically more expensive than plain solid colors. Make sure you get the most out of the material by always testing out the cut quality before starting a job. Some materials such as flocks and dimensional ultra-thick usually require a higher degree-angled blade. Use the correct angle of blade for the material, and make sure the blade is sticking out far enough to get through.

Stiffer materials, such as mirror-finish metallics, need a lot more downforce or pressure when cutting. To keep the cut strip in good condition, slowly increase the downforce and test each time instead of starting high. Gouging out the cut strip in the test cut area degrades any future cutting results.

Cutting glitters and reflectives can have a

sandpaper effect on blades. Even if a test cut is done, only run 3' – 4' at a time, and check on the quality of the last lines that were cut before starting the next run. Working with rougher materials like this isn't a set it and forget it situation. There is nothing worse than having to recut part of a job because the blade went completely dull partway through cutting.

## CARRIER CODE

HTVs typically come on a polyester carrier, which acts as a stabilizer while moving through the plotter cutter. The blade cuts through the adhesive side of the HTV and is supposed to lightly score the carrier. Some carriers are produced with a slight tack to aid with weeding. It's a light enough tack to fully release the design to the fabric during pressing, but if a piece raises up, it's easy to stick back down and stay.

Some reflectives and glitter products are made with a non-sticky carrier. When the carrier is static-bound to the HTV and



There are many different HTV patterns on the market.

there is no tack at all, it can make cutting and weeding trickier. When there is not the option of sticking a design back down on the carrier, having the right cut settings becomes even more important.

The pressure or downforce, sharpness of the blade, and offset all need to be perfect. If the offset is not correct, the cut lines around the design will not completely meet up and a little tag will be connected to what needs to be weeded away. Some plotter cutters have an overcut function to help keep this from hap-

pening. Other machines have an offset setting based on the angle of blade being used: 0.25mm for a 45-degree blade and 0.5mm for a 60-degree blade.

Weeding materials that don't have a sticky carrier also need more care as well. Weeding is usually done by picking up a corner of the material and pulling toward the design. With a non-sticky carrier, it's best to gently take a weeding tool or pick, grab some of the excess material near the design, and pull away at a low degree. Pull it out instead of upward.

## LAYER TECHNIQUES

Make sure the materials to be pressed first *can* have another layer pressed on top. Some HTVs with textures, that are metallic, or might have certain colors will not allow a lasting bond with anything pressed onto them. Be sure the materials are compatible with their position in the final design before starting.

If you are unsure how the products will work with layering, reach out to the distributor or manufacturer. They have the knowl-



Specialty HTVs are typically more expensive than plain solid colors. Get the most out of the material by testing out the cut quality before starting a job.



I WANT TO BELIEVE



Specialty heat transfer vinyl can reinvigorate your products and keep customers coming back for more.

edge to guide you in the correct direction and can sometimes provide sample sheets of their products for testing.

When adding multiple colors, layers, and even different products, it can be challenging to have the final design line up perfectly. One great tip for making sure every piece of the graphic stays perfectly in place: apply a light- to medium-tack transfer mask on the underside of the fabric. During the carrier peeling step, both the transfer and the fabric can stretch and not line up exactly with the next layer, which can be frustrating. Adding the mask to stabilize everything before starting keeps this from happening. This is also great for times when you cannot actually layer on top of any of the products being used.

If the bottom layer is compatible with other products pressed on top, make it as solid as

possible. Trying to line up letters and other graphic elements directly over the holes in the bottom layer adds more room for error. Having a larger bottom piece will also have the same effect as putting transfer mask on the underside of the fabric; it also helps keep everything in place.

## SEEING PATTERNS

There are so many different HTV patterns on the market today. Instead of trying to do multiple layers to give the appearance of a pattern, check and see if there's a shortcut.

When cutting this type of HTV, be aware of the direction of the pattern and the direction of the design. It's second nature to try and fit as many designs into the cutting space as possible with most HTV. With patterns, it will look awkward to have a directional pattern like Christmas trees or hearts going sideways on the final garment instead of facing upward.

It's also important to load the material in straight before cutting. It won't look right to have a pattern that's at a 2% diagonal angle instead of straight up and down.

## MULTIPLE MATERIALS, MULTIPLE INSTRUCTIONS

Mixing completely different products with different press times and temperatures can get tricky. If there is no layering, a great way to start is to press the products with the highest application temperature first. Make sure to also press the materials that cannot be re-pressed last.

The carrier from a later-pressed design can put a mark into something that was already pressed. This is especially true with smoother, thinner materials. Trim the carrier as close to the design as possible to keep this from happening. If there is no way to completely avoid this, the lines can sometimes be re-pressed out with a spritz of water and a smooth cover sheet.

One important accessory to have while heat pressing is cover sheets. Here are the different types of products used for this purpose: Teflon sheets, silicon release sheets, transfer tissue, parchment paper (the same



Those who add finesse to their final garments with specialty heat transfer vinyl will automatically stand out in this crowded market.

one used for baking), and butcher paper.

The carrier of a heat transfer vinyl, which is typically made of polyester, can help protect it while pressing. However, it's always a good idea to cover the entire shirt when pressing light-colored shirts and when pressing cold peel materials.

A material that needs to completely cool down to room temperature before peeling can sometimes start to peel up when the upper platen is raised. When this happens, that corner of the transfer may be ruined. Re-pressing can sometimes help in this situation, but using a cover sheet helps avoid this in the first place.

Always use a cover sheet to protect the designs that have already been pressed. Heat transfer vinyls that are thinner, more heat sensitive, or contain any amount of PVC can take on the texture of Teflon sheets when re-pressed. These particular materials look better if re-pressed with a smoother cover sheet. Keep a wide range of cover sheets in the heat press area for any re-pressing situation.

Some products when re-pressed without the carrier, especially on top of another layer, can leave a residue imprint on the cover sheet. This can then imprint onto a finished garment. Regularly look over your cover sheets for any debris and clean with acetone or vinyl letter remover chemicals when needed.

Beginning new pressing habits or using new products can take a while to get used to, but the pay-off is great. Specialty HTVs add a fun element to any design and can re-invigorate your love for decorating garments as well as your sales numbers. **HGR**



**LIZ HOOD** is the marketing manager for Specialty Materials. She's been working with heat transfer vinyl for over a decade and has helped bring new techniques and technologies to the market. She's a senior tech support specialist and helps test and market new products.

## FLOOR GRAPHICS

# HOW THE RIGHT APPROACH LEADS TO INCREASED SALES

BY JAY KROLL



Whether it is choosing the right adhesive, a film with the proper slip ratings, or even just the design and application of the graphic, there is a lot to know about floor graphics. (Images courtesy Advance Imaging Inc.)

**S**tand here. Wait here. Keep your distance. Watch your step. Stay six feet apart.

Signs are everywhere, and the proliferation of floor graphics in the past year-plus has awakened a graphic space that, at least by most, was underused or misunderstood. Sure, you might see a lot of floor graphics at a trade show or occasionally at the drug store, but nowhere near the repeating spread in grocery stores and retail environments that directed our movements like neon steppingstones this last year and a half.

Unfortunately, the rush for the market to catch up to the demand led to some painful lessons about the specific requirements for floor graphics and laminates. Whether it is choosing the right adhesive, a film with the proper slip ratings, or even just the design and application of the graphic, there is a lot to know in this space to make sure your project is successful.



I want to take a few minutes to talk about making good choices to ensure your next floor graphic works, and that the successful completion of the job ultimately brings you more of it. Occasionally a good cook can make a masterpiece with mediocre components, but the best way to make an award-winning meal is to start with the finest ingredients.

**MAKE GOOD VINYL CHOICES**

A huge mistake is assuming that removable floor graphics can be produced with any removable vinyl. While you might get lucky, it's a bad habit to just use whatever's available when there are application-specific materials that are accessible, and usually at a minimal price difference from your standard removable option. A good floor adhesive vinyl is

designed to stand up to heavy foot traffic, mechanical cleaning, and have compatibility with various floor waxes and finishes.

Air-egress materials should be avoided as these provide channels for cleaners to get under the film and attack the adhesive, weakening the bond and creating a trip hazard. Always check with your material supplier and make sure that your base film is warranted for floor graphic use.

Ink durability is an important consideration when using one-step floor graphics. The selection of base film is doubly critical here as you won't have the benefit of a laminate to protect the print or provide a non-slip surface due to ink being added to the surface. These options are typically textured or designed specifically for outdoor graphics. Plan on these types of films when

the graphic is short-term, and check with your ink manufacturer for info on expected durability.

**KNOW YOUR LAMINATE OPTIONS**

There are so many different laminate options available, how do you know if you're picking the right one? Can you use that matte laminate you have lying around in your shop, or do you really need to get something specific for floor applications?

Let's think about what a floor laminate does. First, it protects the print — the basic job of any laminate, right? But floor laminates also carry the enhanced responsibility of providing a functional finish for the decal.

In addition to providing durability for use, floor laminates should carry certifications like UL410, ANSI A137.1/A326.3,

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Most removable floor films are functional for smooth, sealed surfaces like painted or polished concrete or tile with minimal grout lines. (Image courtesy Nitro Wraps)

DIN 51130, or AS HB198:2014. These certifications are specifically focused on the coefficient of friction of the film surface, with designations for whether the test is done on a wet or dry surface. This test is used to determine whether the film presents any sort of slip hazard when used.

The primary driver for using films with these designations is for liability in the finished installation — the extra work of choosing an approved laminate will pay off if there is ever an issue. Laminated graphics will last longer when properly cared for, and these

will typically allow for normal cleaning procedures and use of floor-cleaning equipment.

### **PUT IT ALL TOGETHER**

Let's move on to the full construction and what considerations to take into account with your materials and design. As always, consider first the surface where the graphic will be installed. Most removable floor films are functional for smooth, sealed surfaces like painted or polished concrete or tile with minimal grout lines. Low-pile commercial carpet or textured tile will require a higher-

tack removable adhesive designed specifically for those applications.

For example, GF 212 Traffic Graffix is formulated to adhere to that carpet without leaving residue when it's removed, where a standard high-tack adhesive that would technically work will leave glue behind and damage the carpet finish and fibers. For those carpet installations, use a thicker laminate to prevent puncture of the graphic from things like heels and wheels. A 5.0 mil to 6.0 mil laminate is recommended.

For the application, make sure the surface

has been properly cleaned with commercial cleaners, then rinsed with water and fully dry before any decal or graphic installation. The flooring coating should be firmly adhered to the base, such as concrete sealer, paint, or stain. When the surface is ready, use a center- or edge-hinge method and squeegee your decal or graphic into place, working from the center out and removing the liner slowly to avoid trapping air as you go.

If installing multiple panels, it is recommended to butt the panels versus overlapping so you don't create a path for cleaning chemicals to penetrate and compromise the adhesive layer. Try to avoid installing over any grouted tile or channels in cement flooring for this same reason. After installa-



A huge mistake is assuming that removable floor graphics can be produced with any removable vinyl. (Image courtesy Mac Paper)

tion, wait at least 12 hours before cleaning the floor around the graphic to allow for the adhesive to wet out and make full contact with the surface.

When designing your graphic, make sure to use rounded corners to help eliminate any edge lifting due to foot scraping or dragging. PSPs can also set themselves apart from big box premade decals by incorporating the customers' brand colors, fonts, and logo into the design, making use of this valuable advertising space in a classy way versus some garrulous red box on the floor. The potential for wayfinding, advertising, decoration, or design in this space is significant.

Floor and carpet graphics are not going away any time soon, and if anything, we believe the education people have received in the last year has opened a whole new canvas for co-branding and messaging. In a world where walking with your head down, eyes glued to your phone, is seemingly common, engaging floor graphics are like the new wall graphic, attempting to catch the eye of the customer or client to convey a message — whether promoting safety or announcing a sale.

This space has a ton of potential to encourage participation in the message for retail environments, schools and universities, or even business. If done right, floor and carpet graphics will lead directly to repeat business, increased sales, and profitability for you and your shop. **GP**

**JAY KROLL** is a product manager for General Formulations, focused on building the best adhesive solutions for cut and craft films, wall vinyl and fabrics, and outdoor/transit applications.



PSPs can set themselves apart from big box premade decals by incorporating customers' brand colors, fonts, and logo into the design. (Image courtesy Roland DGA)



# THE POWER OF PHOTOGRAPHY; THE INTRIGUE OF ILLUSTRATION

*USING ONE, THE OTHER, OR BOTH TO CREATE DYNAMIC PROJETSCS*

No matter your age or who you are, certain iconic images are indelibly imprinted in your brain. Perhaps it was the instant you saw the smiley face, an omnipresent, cultural fixture for decades as attributed to Franklin Loufrani. Maybe it was the poster of Farrah Fawcett with her “it” girl gaze, coiffed with an anti-gravity ’70s feathered shag. For others, the lasting effect courtesy of Mickey Mouse and Pluto, The Beatles and Duran Duran, the two Marilyns (Monroe or Manson), or even the nightmares delivered by the Creature from the Black Lagoon.

These images resonate within your psyche, eliciting an emotional response or approval, because the most profound images are easy to visualize again and again. World culture is awash with aesthetic beauty, be it the generational paintings of the Lascaux Cave in Montignac, France, to the bombast of Andy Warhol’s pop art serigraphs, to the starkly sublime, sensual, monochromatic photography of Helmut Newton. Art, it appears, has its place as both hand-drawn images and mechanically aided products. It’s all valid; it moves the viewer and, therefore, sells the idea.

## THE OBSERVATIONAL FORCE OF ART

As a modern-day graphics professional, what’s your go-to approach: photography or illustrated art? Somewhere, somehow through the centuries, we humans went from appreciating timeless, distinctive images created (mainly) by artists that often transcended generations to pumping out billions of (mostly) clichéd images each year — an estimated 100,000 new, commercial photographs are uploaded to stock

photo agency Alamy daily via the ever-increasing cacophony of mobile phones and personal devices.

We are inundated with images by the minute, and most are quickly forgotten within seconds. Did our manic society err and if so, how do you fix it in the small corner of your dolce vita?

To find salvation in this hurried, digital landscape, one only needs to look to Vitruvian Man (an iconic drawing) as well as the most famous mug of all-time: the Mona Lisa. Or rather, her creator.

Leonardo da Vinci, 15th century prolific

illustrator, painter, sculptor, and all-around Man of the World, was the first guy that donned the relaxed-fit T-shirt with the words “The Original Renaissance Man” printed across the chest. A chronic procrastinator, da Vinci’s work always exemplified clarity and refinement.

Your work should embrace the same ideals: clear and refined, though not tardy. His commissions, caricatures, and detailed sketches provided strong concepts before final work was executed.

Whether it was an exquisitely detailed painting or architectural design, through



For a glimpse into what to expect in a forthcoming guitar book, the only way to capture each guitar model and its era was through photography — for book tour support in large-scale wall pieces that rock. (Image courtesy Matt Touchard and Ron Calamia)



The headline stating "The Fine Art of Iced Tea" encouraged the design approach for this beverage's in-store graphics with an acrylic painting that is simply sweet. (Image courtesy Matt Touchard)

his use of *saper vedere* — knowing how to see things — da Vinci demonstrated he knew what each project required and what clients expected. Do the same; learn from him.

While photography was not at his disposal, da Vinci was keenly aware that different projects required divergent and sometimes novel methods of interpreting the subject matter for the ultimate finished work. Thus, choosing the best medium (photography, illustration, graphics, et al) for your project's centerpiece is critical. Revert to the era of da Vinci.

For your next job, eschew photography and use illustration if possible. While it is understandable that stock art/clip art/royalty-free art is just an arm's length away, go for original art. Maybe you have someone at your shop with true drawing talent? If not, engage with and hire local artists for that next project. By doing so, your shop's work becomes more noticeable, more original, and will stand out.

Originality has become increasingly important with social media and the bombardment of nonessential imagery becoming the criterion. Employ bold, thought-provoking, and balanced visuals to layouts by eliminating superfluous design noise; less is more. The goal should never be to use what is easiest, fastest, or cheapest. Do your clients deserve uninspired graphics? Strive for dynamism and imagination to deliver an everlasting imprint that will bring you more work. Be like Leo.

### **SPICE IT UP**

Perhaps the antithetical heroine to da Vinci, Victoria Beckham, aka Posh Spice of the girl-power group Spice Girls, seems to have been born for the camera, or largely because of it. From the development of her photo-friendly girl group, Beckham understood the power of imagery and how to exploit it. Becoming the luminous face for the legions of fans was no accident, but

rather a well-crafted business model that propelled her image into one of prominence and influence. And it was done by branding her correctly: with distinctive, creative imagery.

Photography is visceral. A photo's power resides in the immediacy of how our brain translates the image. It's easy to relate to because it is often less abstract than illustration. We live our lives through photos.

Just don't fall into the chasm of duplication like so many pharmaceutical firms that present their product in near identical fashion. Select the right photo image, and your project could be on-trajectory and on-target. Use any commonplace or over-used photo, and your project suffers to the point of a disposable. Stock photo houses are a resource, but the more you rely on just that source, the more your work becomes generic. Have no fear. Get spicy.



## RAMBLINGS FROM THE ATELIER

The directive from the client: promote confidence in a worry free, relaxed clinic, while amusing kids and parents alike. Caricatures of the doctors and a storybook approach were implemented in this vertically integrated campaign. (Image courtesy Matt Touchard)



These interior graphics blend interesting photography, crisp graphics, and digitally rendered illustration to create a museum-like atmosphere in the builder's offices. (Image courtesy Matt Touchard)



Entering a C-store, one is inundated with multiple messages. To capture attention and divert traffic to an end aisle can cooler, quirky illustration in bold, bright colors makes a wickedly cool wrapper. (Image courtesy Matt Touchard)



## INFERIORITY COMPLEX

*"In the republic of mediocrity, genius is dangerous."*

I don't know why, but whenever I read Robert Green Ingersoll's (renown orator, writer, and lecturer of the 19th century) quote, I think of clip art — or as it is known by its other sobriquets: stock art; royalty-free photos; online art, pre-made, digitally available, easy-to-use without much thought; processed ... Maybe I don't really loathe it, but in most circumstances, it is the easy way out.

"But everything has its place and use!" scream the hoi polloi. Certainly, that is without question. The occasional spot illustration, a dingbat or embellishment to supplement a typographic treatment, is fine. But when your entire body of work is littered with images (or the type of photos/art) we've all seen before, where is the equity and investment in your product, for your clientele, or for yourself?

Step outside of your comfort zone. Too many times a great concept for an ad piece, vehicle wrap, or environmental graphic is

foiled and diminished by mediocrity. Think about two or three of the strongest, most memorable visuals in marketing/advertising/graphics you can recall. What was it about the advertisement, promotion, or visual that you remember? More often than not, it was the sheer, simple brilliance of the image. Presentations that can be recalled at will almost never use conventional, tired images.

The decision to use photography or illustrative art is purely a matter of subjectivity. Though remember: Some pieces are begging for art or illustration, while others are the candidate for only photography. Think of the demographic and the target audience. Are you designing pieces for a pediatric clinic that specializes in healthcare for pre-teens? Fun, bright illustration may be just what the doctor ordered. Conversely, a project that is for a noted construction firm may be better suited with pro-level photography



of their past work. Using photos and art in concert together can also bridge ideas and provide juxtaposition.

Avoid clichés and mediocrity. Be original. Go for an iconic look with original photography or illustration and put on that proverbial smiley face. **GP**

**MATT TOUCHARD** won his first art contest at age 8. Since 1984, his design work has collected accolades across nine countries. Splitting time between New Orleans and Switzerland, Matt's in final production of a massive guitar book for the most important client of his career: himself. To talk guitars or vegan recipes, email [matt.touchard@gmail.com](mailto:matt.touchard@gmail.com).

Some application tables also have storage capabilities beneath them, which is useful for a small shop. (Image courtesy Kala Finishing Systems)

# Happy Together

## EXPLORING THE RELATIONSHIP OF LAMINATORS AND WORKTABLES

BY PAULA AVEN GLADYCH



**T**he process of lamination is fairly straightforward. A film is placed over a print and then sealed tight with heat or cold and pressure. But like everything in the graphics world, laminators have improved with age. Now, instead of having to complete the process manually, many models of laminators use smart technology to help the operator complete projects, from raising and lowering the rollers to the amount of tension needed for a particular job.

### WORKING TOGETHER

Some laminators use a touch screen to control all of their functions, which “takes the guesswork out of laminating as it does all of the functions for you,” says Bob Pryor, Graphic Finishing Partners. “It makes laminating exceptionally easy ... Technology has come a long way.”

When purchasing a laminator, it is important that businesses choose a high-quality machine that can handle the different types of projects they expect to complete on it, from posters to stickers and car wraps. They should also plan ahead and purchase a machine that can handle expected future growth while still fitting their existing floor space.

Most laminators work best if there is a worktable at the beginning and end of the process. Pryor states that their newest laminator is 83" X 30.7" X 63", and their worktables are 48", measurements that are crucial to know. Worktables on both ends of the laminator add about 8 1/2'. Allow 6' of space on each side of the laminator to give operators room to move around the machine.

The process can work without both worktables if space is an issue. Roll-to-roll laminators allow shops to process bigger

jobs more quickly, but application tables are perfect for smaller projects.

### LAMINATORS

Wondering what new features are available for laminators? As just one example, Graphic Finishing Partners' newest laminator comes with a digital microcontroller system, color graphic operational displays, electronic roller gap/pressure control, swingout unwind and rewind shafts, inline rotary side slitters, top roller heat assist, integrated rear rewind, roll label printer, operator warning alerts, and onboard operator help tutorials. The side slitters cut off excess print media when the job is complete, saving time in the trimming operation, Pryor notes.

“We try to make solutions to save time and be more efficient,” says Laurent Bouchard, Kala Finishing Systems. Kala's laminators also operate with smart technology, allowing one person to operate both the laminator and the cutting table or worktable at the end. The company's shafts work with the different finishing equipment the company manufactures, from its XY cutters to its applicators and laminators, which saves time and is more efficient, he says.

Kala's laminators come with auto calibration, which means that based on the project the machine is working on, it will control the pressure and roller position left and right in case the laminate shifts position.

"Our machines come with five shafts that can be used in any position and any direction," says Frank Romanello, also of Kala Finishing Systems. "Traditionally, laminators have different shafts for take-ups, rewinds, and unwinds. We've gone with all the same shaft so we can load in any direction, which is efficient and easy."

#### WORKTABLES

Application tables are laminators, but they can also be used for mounting, cutting, and weeding. CWT Worktools USA (CWT) has application tables that are 10' to 12' long,



Some tabletop motorized laminators mount and laminate materials up to 2" in thickness and are available in multiple widths. (Image courtesy Coda Inc.)

but the glide beam moves the length of the table, saving space and time in a shop's finishing room. Laminators take up more space, between 16' and 20'.

In the past, a laminator operator "had to be a skilled artist at that position. Now, the operator can be anyone in the company

(because the) table is so simple to use, anyone can do it," says Mike Osman, CWT. The tables make it easier to apply application tape and apply tape to vinyl.

Some models have a heated top roller that goes to 140-degrees, which reduces silvering in lamination, says Osman. Silvering is usually a byproduct of the cold lamination process but adding a little bit of heat will "emulsify the adhesive to get the impurities out of it," he adds.

Application tables are outselling the company's laminators by a wide margin, Osman notes. "It is a lot easier to put a board on a table and move the roller over it versus feeding the board into a laminator," he believes.

Most customers do shorter projects, Osman continues. The exception is shops that do fleet graphics or car wraps where the pan-



Pivots 90 degrees

## No space for a proper finish?

Look again. This table is a perfect fit for any shop.

Roll the FT48 Finishing Table up to any laminator and get a flat transfer surface at a fraction of the cost of a Flatbed Applicator. Use one side to feed prints for laminating or mounting. Use the other side as a cutting mat for trimming and weeding graphics. When you're done, fold the table 90 degrees, roll it away, and enjoy all the advantages of your high-speed roll laminator. Add a Finishing Table to the front and rear of your Laminator to improve workflow.

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els can be up to 20' long. Some application tables also have storage capabilities beneath them, which is useful for a small shop.

Graphic Finishing Partners' 60" finishing table offers different functionality on both sides. It can turn any roll laminator into a sign making, flatbed applicator for mounting or laminating rigid substrates and printed sheets. It combines a roller ball transfer table with a cutting surface, and the table folds up like a ping pong table when it isn't in use.

A worktable isn't necessary if the laminated piece, like labels or stickers, needs to be cut out on a die cutter. The laminated material is just removed from the laminator and brought over to the die cutter where it is finished.

Still, Bouchard adds that companies shouldn't consider either a laminator or an application table but should consider getting one of each as they complement each other. While the roll-to-roll laminator is working on larger projects, unattended, the operator can be doing

**Top:** Dust and dirt can get on your print and ruin your job, so make sure your work area around the laminator is clean and dust-free. (Image courtesy Kala Finishing Systems) **Above:** Companies shouldn't consider either a laminator or an application table but should consider getting one of each as they complement each other. (Image courtesy Graphic Finishing Partners)

the one-off projects that can easily be completed on an application table.

Worktables don't have to be high tech. Many shops build their own. When doing that, make sure the table is 38" high so that it works seamlessly with the laminator.

### **BEST PRACTICES FOR FINISHING A LAMINATED PIECE**

To get the best lamination possible, it is important to choose the correct print media and laminating film for the job. "A lot of people make mistakes by not using the correct print media to get longevity out of their graphic. Pick carefully," advises Pryor.

Car wraps, for instance, require a cast laminate and a cast print media that is going to last seven years outdoors under extreme conditions. For outdoor signage, cast laminate isn't necessary, just a polymeric laminate and polymeric print media that can last up to five years outdoors. Monomeric films will last up to two years outside. This is less expensive than the other options but perfect for temporary outdoor projects. If the project is going to be used indoors, you can use whatever laminate you want because it won't be subjected to the elements like an outdoor sign or car wrap, according to sources.

Make sure your laminator is in a clean environment. Dust and dirt can get on your print and ruin your job, so make sure your work area around the laminator is clean and dust free and make sure the laminator's rollers are clean.

Decide early on how you are going to run a job. Is it a single sheet that requires a certain setup or are you doing a longer piece that would work better with a roll-to-roll machine? Anything over 8' should be done on a roll-to-roll. If using a roll-to-roll laminator, make sure it is loaded correctly with film and print media so that when it runs through the machine, it moves through without shifting left or right.

Buying a laminator with smart technology helps with that. It raises and lowers the rollers depending on how much pressure the project needs.

When companies first purchase a lamina-



To get the best lamination possible, it is important to choose the correct print media and laminating film for the job. (Image courtesy Kala Finishing Systems)

tor, they may waste a lot of film just learning how to operate it, so training is crucial. "We tell you how to do every process correctly so you don't waste consumables, which can be very expensive," says Pryor.

There are laminators in all price ranges. The least expensive are ones in which the operator must do everything themselves manually. As the laminators get more features, the operator has to do less to get the required results.

"Finishing is where you add value to the prints, and our solution to do this is with minimum waste of media," says Bouchard. "We do this to improve profit. There is a lot of waste involved in this part of the process. If you don't do it right, you have to start again from the beginning."

Romanello agrees. "The finishing area is where most of the run time errors occur ... so by making the process easier, we drastically cut back on unit errors."

Because the newer laminators run so seamlessly, some shops might decide to bump up the heat and run the laminator at full speed, around 21' per minute for a 150' roll of laminate. That can overload the motor and cause an error stop. He recommends running the machine a little slower for best results. **GP**

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## NON-CNC DIMENSIONAL LOGOS

While back, we produced some handsome metallic dimensional letters and logos that were metal-faced foam, and made with simple hand skills using a standard tabletop scroll saw for cutting. Cutting templates were simply plotted vinyl or vinyl paint mask.

I purchased one full 4' X 8' sheet of a material called UltraBoard Aluminum in a 1/2" thickness with a brushed gold-colored aluminum surface. The material is a dark gray (almost black) foam board with a thin black plastic sheet surface. On one side, a thin sheet of brushed aluminum is bonded in place.

With that one sheet, I produced several jobs, cutting them by hand after applying vinyl graphics to go by, painting the edges

with satin black latex paint, and applying them to interior office walls with double-sided tape, plus a T-pin concealed along the top edge of each part as long-term insurance (I have had double-sided tape fail before on certain wall coatings, which is quite embarrassing).

Today, most of our dimensional letters and logos are cut either on our laser, router, or waterjet, depending on the material being used, which is likely acrylic sheet with a metallic polyester surface if cut on a laser, or aluminum laminate, actual plate aluminum, or brushed surface aluminum sheet bonded to 1/2"-thick PVC if cut on the waterjet or router.

I had nearly forgotten about the metal-faced foam UltraBoard Aluminum, which

was simply cut by hand on our scroll saw, until a previous happy client, with a name change, contacted us wanting a couple more dimensional logos like we'd made for them before.

So, back in the hand-cut logo business we were, and I thought for this month's *Shop Talk* we'd look at this simple way of making metal-looking logos and letters without the need for CNC equipment.

### CUTTING DETAILS

When I called our usual substrate supplier, they still had some of that material but not in the 1/2"-thick version we'd used before. Instead, they had a sheet or two in stock in the same brushed gold material that was 1" thick. The extra thickness, which



**Above left:** Originally we produced this logo, three times, for one client, and each were made of the same metal-faced foam and cut by hand on a scroll saw, no CNC cutting required. (All images courtesy Rick Williams)



**Above right:** Our new job would replace them with this logo, made of the same material, cut in the same way.



The original job included a number of small parts, all scroll saw cut, but the new logos would actually be simpler.



The first step, after acquiring a full 4' X 8' of this UltraBoard Aluminum material in a 1" thickness, was to cut the sheet down to just the size our two new logos would require.



Plotter cut vinyl templates were cut using paint mask vinyl and applied to our metal-faced sheets, paying attention to the orientation of the brushed aluminum pattern.



Each part would be rough cut first with a hand jig saw.

was not much different in price (I believe it was between \$150 and \$200 for the sheet) would be perfectly fine and even preferred for the simple logo we had to produce this time around.

This type of composite material is beautiful and looks substantial up on an interior wall, but because of its thin but actual metal face it can't be cut on a typical sign shop laser, and the material is destroyed by a waterjet. It may be okay to cut it using a CNC router, but it is somewhat fragile, and I have only used a scroll saw when working with it.

However, a skilled pair of hands and a scroll saw with a sharp blade works just fine and is a low-cost way to produce jobs like this, making them available to any sign or graphics shop without CNC equipment.

There is no need to subcontract anything. The only special equipment required is a \$200 scroll saw, and work done this way is kind of fun.

The sheet comes with a plastic protective sheeting on the metallic side, but it is low tack and not reliable to stay in place. So, once I determined how much of the bulk sheet was needed, that part of the sheet was cut out. With the protective sheet removed, a stencil made from high-performance vinyl or paint mask vinyl was applied to the metallic side, paying attention that all parts of the logo, or all letters, were oriented the same way because of the metallic brush pattern.

After that, holes in centers of letters like P, R, or O were drilled and then the cen-

ter cuts were made on the scroll saw. After that, the rest of the cutting was done with a medium-paced, deliberate action, being diligent to stay on line with the vinyl pattern. This may sound hard to do, but a little practice cutting on a scrap piece with a determined, appropriate speed and true angle of the blade, and the work proves to not be particularly difficult.

A good, sharp small-tooth blade is essential. However, even with a sharp blade, moving too slowly will cause the blade to heat up and drag in the melting foam and plastic. If the speed is right, the blade will not get that hot, and the foam and plastic being cut will not melt and try to drag on the blade. Cutting too fast can cause the corner of a letter or part to bend slightly as



Our old scroll saw, equipped with a sharp fine-tooth blade, was used for all the cutting required. A smooth steady speed is required, not too fast and not too slow.



Here, all the parts for two logo displays are shown ready for sanding and painting the edges.



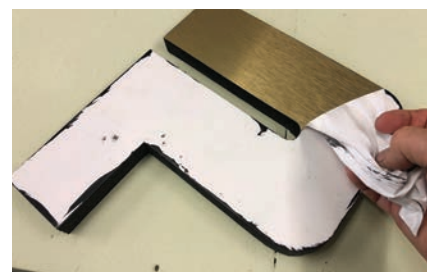
Some sandpaper attached to an extra strong stir stick is used as a tool to sand the edges before painting.



The sanding strokes are downward so as not to delaminate the thin metal surface.



All the edges are hand painted with satin black latex paint.



Once finished, the paint mask is removed, along with any bleed under paint, which comes off easily as the latex barely bonds to the metal, and parts are carefully inspected for dents or flaws while still at the shop.



the blade clears the material. A smooth steady speed is required, not too fast or too slow.

After the cutting was done, and with the paint mask stencils still in place, the edges were painted with a coat of satin black latex paint, as the bare foam edges were dull, grayish, and not that attractive. The clean black edges would make the brushed gold faces of our parts stand out on our client's wall.

We then removed the paint mask stencils to see that there were no flaws, small dents, or imperfections in our parts. It is much better to catch these problems in the shop and replace a part, than find out the bad news while in the field. After inspection, they were covered with transfer tape, which was trimmed to fit and left in place until the parts were mounted. Not even a fingerprint was allowed.

### FINISHING TOUCHES AND INSTALLATION

The original logo job we did is shown in some of the pictures and featured a number of small block letters and some larger Roman-style letters. All of that was cut by hand, and I eventually made three of these logos for our client's three locations, plus another logo or two for another client, all out of one 4' X 8' sheet, turning that \$125 sheet into several thousand dollars-worth of logos.

These two new logos, produced for the same customer undergoing a name change, were much simpler but approximately the same size. The way I intended to mount these larger, simpler parts was different, however, as they would be stud-mounted using a stud method of our own devising.

Letters of this larger size, even as light as this material is, require a good bit of dou-

ble-sided tape and perhaps some adhesive for backup. I hate messing up a client's wall more than is necessary and determined that a few well-placed "studs" would work nicely and do little damage to their wall. The stud mounts would be well-glued to the backs of the letters, but the wall would only suffer a few small holes of no more than 3/16" diameter, with a small dab of silicone sealant in each one.

Repairing the wall the next time something changes will be a 10-minute affair with the right touchup paint. Also, stud-mounted items are never going to move or loosen even when cleaned by a careless custodian.

To make our glued-on studs, since this foam material certainly could not be tapped for threads, we used some 2" square scraps of aluminum laminate sheet, with a single #6 X 3/4" flathead stainless-



A new protective mask is applied using transfer tape, and carefully trimmed in place.



Our stud mount pads are made from small square pieces of scrap aluminum laminate and small #6 size stainless-steel sheet metal screws.



Each pad is drilled with extra holes to give the glue (which will hold them in place) more to bond to.



A small, sharp screw is threaded in place, and its head is countersunk so the pad remains flat for gluing.



On the backs of our parts, the places where pads will be glued in place are scuffed up with sandpaper. The pads were scuffed as well.



Clear silicone is used as an adhesive to secure our stud mounts in place.

steel screw, countersunk, screwed in each one. Each piece of our logo weighed very little and was fitted with only two to four of these studs.

These small squares of aluminum laminate were drilled with extra holes and scuffed up with sandpaper before gluing, and so were the backs of the logo parts where these pads would be glued in place. Regular 100% silicone was used as an adhesive and allowed to dry overnight.

The next day, our two paper patterns were drawn with our large-format printer onto regular white paper, though sometimes we use a plotter equipped with a pen or marker for this. The patterns were placed on a worktable and perforated with the exact hole placement by aligning the logo parts over the pattern and pressing down, leaving pierce marks where all the holes would need to be drilled. One pattern was marked

“A,” and the other “B,” and so were the sets of parts.

Out on the job, the installation of each of the two logos was only about a 30-minute affair each. Careful attention was used in placing the patterns on the wall perfectly level, and exactly where the client wanted the logo to be. Then 3/16" holes were drilled following the pierce marks shown on the patterns.

A total of 11 holes was all that was required to secure each logo to the client's office wall. A small amount of clear silicone was forced into each hole, and the parts were pressed into place. They weigh almost nothing, so there was no tendency for them to move and after an hour or two, the silicone would set up and make them permanent.

The final product was a handsome metallic display, with painted black edges, stud-

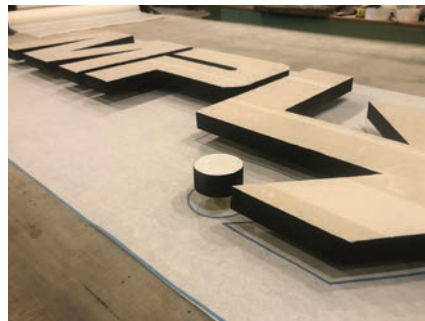
mounted into the wall and completed in almost record time.

Even though we seldom make dimensional letters or logos completely by hand, it is still something that is practical and profitable to do. With the right material, and with nothing more than a sign shop plotter for stencils and patterns, plus a \$200 scroll saw, any commercial sign shop can make handsome, custom metal-faced letters and logos for clients of all kinds. And it is likely that they will become repeat customers, which of course is the best kind. **GP**

**RICK WILLIAMS** owns Rick's Sign Company, a commercial sign shop in Longview, Texas. He has been in the sign industry since 1973 and has been a contributing editor to *Sign Business* and *Sign & Digital Graphics* since 1986. Contact Rick via email at [ricksignco@aol.com](mailto:ricksignco@aol.com).



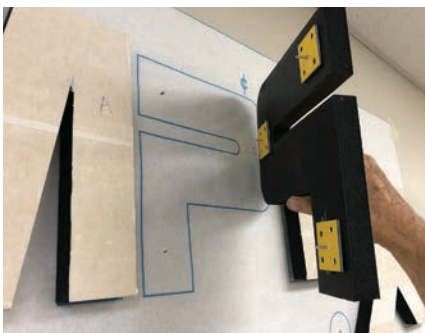
Only a few studs were required as all the parts are very light. The glue is allowed to dry overnight.



Patterns were drawn on paper with a printer or plotter and then pierce marked by pressing down on each logo part.



In the field, the patterns are carefully set in place, and small 3/16"-diameter holes are drilled.



Pieces are pre-fitted in place while the pattern is still taped to the wall.



The final step is removing the transfer tape protective sheet, making sure the finish is perfectly clean.



This photo shows one of two custom logos, hand cut from 1"-thick sheet, and then stud-mounted into the wall in about 30 minutes' work onsite.

# PRODUCT SPOTLIGHT: FALL SPORTS

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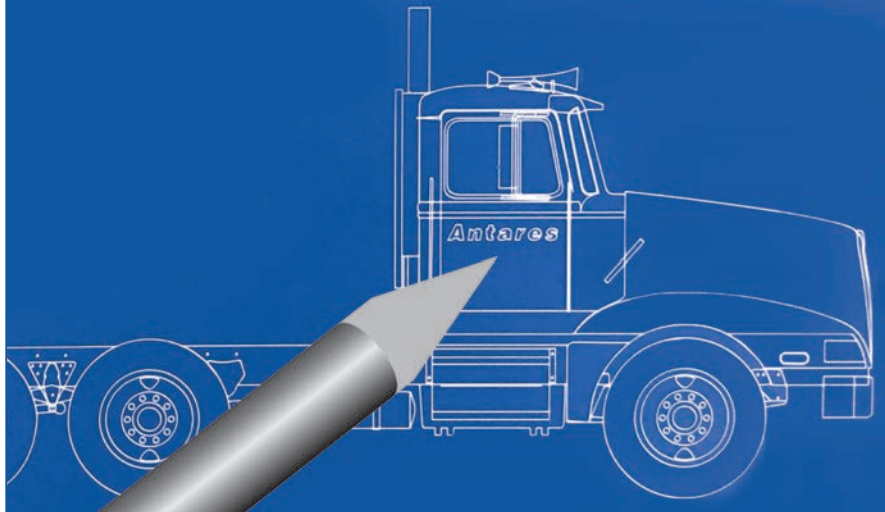


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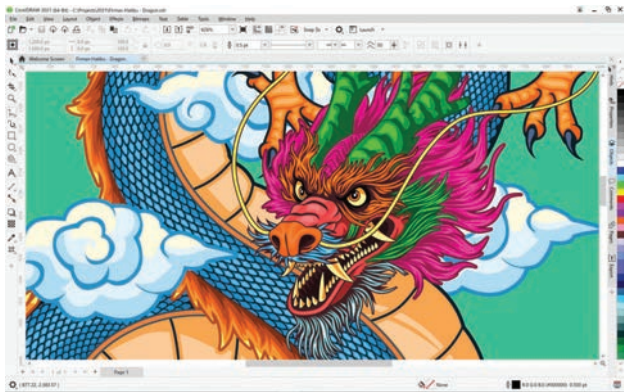
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# PRODUCT SPOTLIGHT: FALL SPORTS

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**GP**



# INVESTMENT DECISIONS

**HOW DO YOU KNOW YOU'RE READY TO PURCHASE NEWER, BIGGER EQUIPMENT?**

**A**s we get deeper into 2021, business is starting to come back for many folks, and I keep hearing people say they are busier than they expected. The world is trying hard to get back to “normal,” which means people are going back to school, hosting in-person events if they can do so safely, and spending money. This is a great problem to have for those experiencing it, but it is a challenge nonetheless.

One of the potential answers to this issue is investing in new systems and equipment. In this column, I explore that process and discuss how to know when to invest, what to invest in, and how to best prepare for the future.

## BIG DECISIONS

Many decorators are looking at the backlog of work and thinking it might be time to invest in new equipment that's faster or larger, add more equipment, or possibly invest in new software or systems that can increase efficiency. The excitement of that thought gets us moving, but quickly our anxiety about spending money sets in. It becomes a back-and-forth battle between the two. What to do?

First, make your decision from an investment standpoint, not a cost standpoint. What that means is that you need to review the purchase from the possible return on investment, not from how much it will cost.

For example, if I said, “You give me \$1 million, and I guarantee that in three years you will make \$3 million,” would you do it? If it is guaranteed in writing, I believe most of us would figure out some way to make that happen. The challenge is the person ensuring the return is you and your business, not some random writer.

We all have money set points that are unconscious beliefs that make us stop in-

vesting in the tools and systems needed for growth. An example: Many people, through social and community pressures, believe that anything over \$1,000 is expensive and must have a much greater perceived value to get us to “spend that kind of money.” Because of this, many new businesses end up purchasing a 15" X 15" heat press as their first purchase, as most are priced right under \$1,000. The manufacturers have that size and price point available for a reason.

But I have met very few businesses who didn't wish they had invested in the 16" X 20" heat press or larger. The 16" X 20" typically costs \$1,500 to \$2,000 and requires you to “spend that kind of money.” To get over this money set point, research a purchase based on the return on investment, not the amount it costs. You must remove the actual end cost of the equipment from your purchase decision. Instead, look

at what that purchase could yield over time.

Using that 16" X 20" press, do you have the potential to sell flags, socks, or all-over shirts? If so, then is the amount of profit from those items equal to or greater than the \$500 price difference between the two presses over a certain amount of time? If your answer is a yes again, an investment mindset leads you to figure out a way to borrow, finance, or just spend the extra \$500. If you have a cost mindset, you will only see the difference in cost, which means you will fall into the category of the person wishing they had made a different investment.

## THE RIGHT MINDSET

Now that your mindset is viewing the investment in the correct light for your business, look at the next area that can get people. It is what I call the “shiny object” syndrome. Early in my decorators' com-

Many decorators are looking at the backlog of work and thinking it might be time to invest in new equipment that's faster or larger. (Image courtesy Kern Laser Systems)





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**Above:** Even when we are in the middle of a pandemic, an economic downturn, or even a personal crisis, we must always look ahead and act as if our business is at our idea of success. (Image courtesy HP) **Right:** Though you can potentially sell a variety of different, new products with a new piece of equipment, that doesn't mean that as soon as you list them they will instantly sell. You must build a market for those products while at the same time perfecting your process. (Image courtesy Trotec Laser)



When deciding on whether or not to purchase a larger piece of equipment, make your decision from an investment standpoint, not a cost standpoint. (Image courtesy EFI)

munity career, I was part of the direct-to-garment printers revolution in 2004. Everyone was talking about them, and as a salesperson for some of the early machines, it seemed that everyone wanted one. Many folks did very well with this cutting-edge technology, but I also saw many people struggle because the equipment was not made to just sit and wait for the next job to come along someday.

This is the way it goes for most major purchases — there is going to be a learning curve, some time, and additional resource investments that will have to be made to perfect your process to maximize the profit return of that investment. But the shiny object catches your attention, and you have to have it.

For all the potential that was talked about previously, you also must temper that with reality. Though you can potentially sell flags, socks, or all-over shirts, that doesn't mean that as soon as you list them as available they will instantly sell. You must build a market for those products while at the same time perfecting your process. Fortunately, there is a great way to build your market and hone your process without having to make the capital investment right away.

Outsourcing is an underused service available in our industry. It is hard to let go of control, but with the right outsourcing partner, not only can you service your customers, learn more about the process, and create a broader market, but you can make money by pushing a button or sending an email. You don't have to worry about the ruined products needed to learn the process, carrying inventory costs, or spending the time to make the product.

This does require letting go of some control and building trust with a potential "competitor." Inside of Our Success Group, we call this "coopetition," and it is part of one of our core values — an abundance mentality. This is not to say there will not be some challenges, some headaches, or even potential horror stories. But those challenges only serve as a lesson on what not to do, or what expectations you must set with your customers before you are the only one on the hook.

Let someone else take the time to make the product, handle the cost of carrying the inventory, and the learning curve and mess-ups that come along with perfecting a new product or service. Some argue that you are leaving profit on the table, but I argue that you are not because of those rarely calculated costs I mentioned.

Once you have a market, a greater understanding of the process, and the challenges of working with an outside source become greater than you can bear, then you know it is time to make that investment. The good wholesale outsource partners will actually actively help you work them out of a customer as they know word of mouth is the best marketing for a wholesaler.

## PLANNING

I want to close with a quick note about planning for the future. Even when we are in the middle of a pandemic, an economic downturn, or even a personal crisis, we must always look ahead and act as if our business is at our idea of success. This doesn't mean that you have to be spending wildly or taking big risks. This means that you can't just sit on your hands and let fear control you.

Research the costs your business must cover including planning for future capital investments. Include that in your pricing strategy. This is really the foundation of how we look at success inside of Our Success Group, and I can't stress enough how important it is to plan for the future. This small cushion could be the difference between surviving and thriving.

Many small businesses don't charge what they are worth because they don't know their costs. They cut prices in an attempt to survive. But if the pandemic taught us anything, it's that people are willing to pay more for better products and better service. **GP**

**AARON MONTGOMERY** has been certified by New York Times best-selling author Jack Canfield as a Success Principles Trainer and is the Co-Founder of OurSuccessGroup.com. Aaron has over 25 years of experience with personalized products and small business development. You can find Aaron co-hosting the decorator's industry podcast 2 Regular Guys Podcast ([www.2regularguys.com](http://www.2regularguys.com)). You can also check him out on his own podcast channel and weekly live videos called Small Business Saturdays ([smallbusinessaturdayspodcast.com](http://smallbusinessaturdayspodcast.com)).

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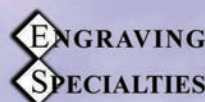
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## DO I NEED A LARGE-FORMAT LASER?

**L**asers today offer more technological features than just a few years ago, including combining two types of lasers in the same machine and perhaps operating at the same time, to camera and registration technology allowing easy placement of products to be engraved.

I focus on table size in this article; however, other desired features may impact the machine you choose. There is also a vast price range today when it comes to lasers for a small graphics shop. Choices can be daunting, even for an experienced laser operator or long-time shop owner. Consider price differences as an additional investment and look at the expected return you will receive over the next 10 years.

### OPPORTUNITIES

If you are new to laser engraving or are just starting your business, you may not know the customer base you will acquire. Having a business plan helps establish a target market to focus on. Business opportunities will come along that you may not expect, and regardless of your business de-

sign, most opportunities will be tempting.

When you don't have a full plate of business or are not making enough to pay all the bills, opportunities you were not interested in become more appetizing. Table size is often one of the first limitations that presented opportunities bump up against.

There will always be jobs you have to turn away due to limitations of your technology. There will also be job opportunities you should turn away even if your equipment can accommodate them. Some jobs require skills that are too far above those you presently have. A job may not offer the opportunity to make a profit or may be so large you cannot complete other promised jobs with good ongoing customers.

### SIZE DOES MATTER

Many new shops start out with a 24" X 12" table size. Other common table sizes are 24" X 24", 36" X 24", 48" X 24", and 48" X 36". Many common needs requiring a larger table size beyond 24" X 12" are for additional width for items like baseball bats, paddles such as those used for decor in

the military, large landscape photo frames, shadow boxes, and tool handles (shovels for groundbreaking ceremonies).

Other uses for bigger tables are for tool marking and processing large orders of dozens or hundreds of the same product. Signage products utilize large cutout letters and graphics from sheet stock.

There may be situations where you need additional Y (front to back) distance. However, most often a product can be reoriented along the width of the laser to accomplish the personalization. When this doesn't work is when the object exceeds both the width and depth (front to back) of the table.

Let's consider a few examples of common table size decisions. Your shop is a typical personalization business with small business customers — sports leagues, nonprofits, and some government customers. You are considering a standard 24" X 12" table size. The vast majority of products fit on this size table, and you can readily purchase acrylic, wood, and leatherette sheets in this size.

Let's say a customer brings in several baseball bats to be engraved. The bats are 32" long. One way to engrave them is if your laser has pass-through capability. This refers to the ability to open the left and right doors to place the product inside to be lasered. You cannot laser the whole length of the bat and are still limited to 24" of its width. Your setup will be a little more complex; however, this solution is a good one for most products a business like this is presented with.

Your other solution is to purchase a laser with a 36" table width. Which is the better solution? If you only occasionally have products longer than 24" and within the 12" depth range, buying a laser with pass-through ca-



Both the throwing axe and the back of the display seen here had to fit into the laser. (Image courtesy Bob Hagel)

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**Above:** Large numbers and letters can be tricky to place without wasting expensive material. **Left:** Enlarging this badge created both height and width limitations.

**Right:** This very tall shadow box was turned sideways to laser and cutout. **Below:** Check to see if you can remove the actual table from your laser and whether the bottom is usable to accommodate your products. (Images courtesy Bob Hagel)



This shadow box had three large layers. A middle layer was added to allow for more room to mount objects. (Image courtesy Bob Hagel)



**Right:** Larger tables provide major benefits for orders that require engraving dozens or hundreds of the same product, among other uses. (Image courtesy Kern Laser Systems)



pability is the best and most cost-effective solution.

A good, general rule to consider for any laser feature is the cost versus opportunity for additional wanted business. An additional cost of a few hundred dollars doesn't require frequent use of the feature to pay for itself, especially if the learning curve to use that feature efficiently is not a high learning curve. Adding several *thousand* dollars is a different story.

If a specific table size will allow you to accept 85% to 90% or more of your opportunities, that is likely the right size table for your business today. Adding a second laser in the future with a larger table can add that capability if it's apparent there is more opportunity for its use.

Having a second laser also offers other benefits. You can always run jobs on multiple lasers at once, even with one operator. There will also be times your first laser is down for repairs or maintenance. A second laser greatly reduces the stress caused by your laser having a bad day.

Another example is a laser business that has many signage opportunities, even if it appears to be internally used signs such as small nameplates, wayfinding signs, and instructional signage. If you advertise or market signage capabilities, there will be many larger signage opportunities and expectations of your capabilities by signage customers.

A table size of 36" X 24" or 48" X 36" is more frequently used for outdoor signs or event signage. Just make sure you consider the additional skills and capabilities needed, including installing large and outdoor signage. As acrylic and wood sheets can be purchased in sizes up to 48" X 48", larger lasers are useful. Also consider that you may need other tools such as a saw capable of cutting a 48" X 48" sheet with a straight cut. Do you have the staff or want to have staffing that will be out of your shop to install signs? How frequent will this be?

Larger table sizes often come with bigger table drops that allow you to laser taller products. This is your Z dimension. A deeper Z dimension may be your real need,

and you may find that will only come with a larger table size.

I had the opportunity to personalize many of the human urns in my region. This required a fairly deep table drop. I also had the opportunity to work directly with the urn manufacturer and had input on the designs. With this capability and finding, I could add about another 2" of depth (height of product) by removing the table platform and using the actual bottom of my laser; I could accommodate all the urns. Check to see if you can remove the actual table from your laser and whether the bottom is usable to accommodate your products.

As I had some screw threads facing up that could damage products, I built a simple thin platform from plywood that worked perfectly. Don't be afraid to explore some simple solutions before making a large investment. Sometimes they work great. However, I would not have hesitated to make a larger investment into an additional laser given the size of this market opportunity.

You may also have other needs that coincide with a specific laser table size. These might include a fiber laser or the combination of a CO<sub>2</sub> and fiber laser in one machine, or a specific large-powered laser tube such as a 120-watt or even a 150-watt laser. These wattages are often needed when cutting thick materials or cutting large materials quickly. Larger tables may also provide combined fiber and CO<sub>2</sub> lasers that will work together on the same job.

Cameras and registration features are also a more recent useful addition to laser machines. Smaller laser tables are often paired with a single camera and larger tables with two cameras. Larger tables provide major benefits for orders that require engraving dozens or hundreds of the same product. Cameras with registration capabilities make accurate product placement easier. A large table with camera and registration is critical for the competitive edge needed for these large orders.

You just may find that several of the laser features you want only come with a larger table. Most often this pairing makes per-

fect business sense. If you are just starting a business and are not sure about your target market or the customer base that is available in your market, start with a 24" X 12" table with a 30- to 50-watt laser tube. A used laser from a reliable source is also a great way to start. Adding a second laser that is more in line with your newly discovered business is a great asset. It's also a great stress reliever! **GP**

**BOB HAGEL** recently retired after owning Eagle's Mark Awards & Signs for 18 years in Southern California. While owning the business, he offered a full line of personalized products using laser engraving, sandcarving, and full-color UV direct print on products. Today, he consults on starting and expanding personalized businesses, and on improving production efficiency and quality. He can be reached at [rjhagel@verizon.net](mailto:rjhagel@verizon.net).



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# Side-Step Laser Installation Pitfalls

*SIMPLIFY YOUR LASER SETUP WITH A FILTERING FUME EXTRACTOR*



BY CHAU VO

**M**ore often than not, keeping things simple yields better outcomes in business and life. Despite this truism continually being offered by peers and mentors, we occasionally still find ourselves in over our heads after having jumped into something seemingly easy. How does this happen?

Lulled into a false sense of security, we don't always adequately inform ourselves and therefore, fail to anticipate the complexities that lay ahead. It happens to the best of us.

If you can relate, you now know that collecting and consuming as much information as possible before leaping headfirst into any project can save you precious time and money. You will also likely avoid the dreaded, "Ugh ..." moment when you realize that you've bitten off more than you can chew.

So, more information is key, but doing your own research can be daunting. "How do I identify potential complexity pitfalls if I don't even know what I don't know?" you may ask. Given the myriad of things to consider before installing a laser, that's a



**Top and above:** Example of spiral ducting and a venting blower typically used to vent fumes to the outdoors. (Images courtesy Chau Vo)

tough one. However, a great place to start is fume extraction, one of the most often overlooked aspects of laser installation.

All laser marking, engraving, and cutting systems unavoidably generate respirable dust (2.5 microns and less) and/or volatile organic compounds (VOCs), which can be harmful to your health. The good news is that most reputable laser manufacturers recommend and even offer solutions for evacuating or capturing the laser fumes so that you can safely breathe clean air while working.

### LASER FUME EXTRACTION OPTIONS

You basically have two options:

- 1) Use outdoor venting via a blower and fixed ducting directed to the outdoors; or

- 2) Use a filtering fume extractor, which captures the fume directly into air filters and then recirculates clean air back into the room.

The first option may seem easy enough, but beware! There are several hidden complexity traps associated with sending fumes to the outdoors. I've seen these issues over and over again in my 20-plus years in the fume extraction industry.

### COMPLEXITY PITFALLS AND SIMPLIFIED SOLUTIONS

Outdoor Venting Potential Pitfall No.

1: The blower pulls the fumes out of the laser and then pushes the fumes outdoors through a duct system. Sounds simple enough. However, you will have to bore one

or more 4" – 6" diameter holes through the interior wall as well as the exterior brick or concrete wall to allow the duct to pass through to the outdoors.

This is not a trivial task. You need specialized boring equipment or will need to hire a construction contractor, but in both cases there is a risk of damaging the walls. Unfortunately, you may find that your landlord prohibits these modifications to the building anyway. In addition, the ducting should be installed by a professional HVAC contractor to ensure that the ducts are appropriately sealed and up to code.

**Simplified Solution:** A filtering fume extractor is a free-standing piece of equipment that has a blower and filters within a cabinet. It draws the fumes from the laser via an included flexible hose and then filters

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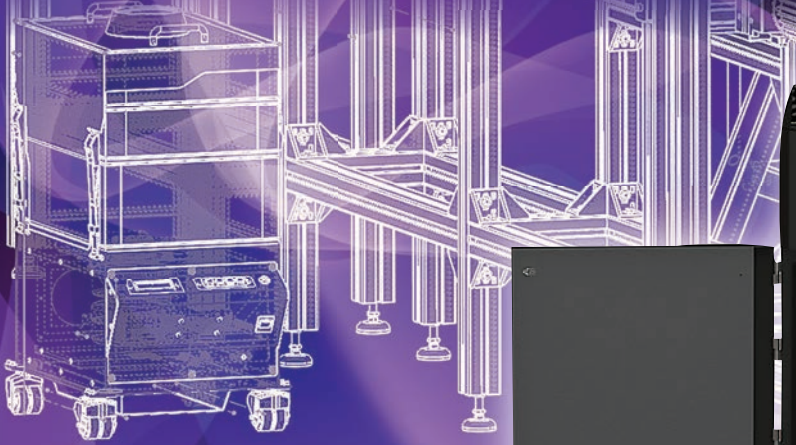
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A 3D CAD model of a fume extractor within a virtual workspace layout. (Image courtesy Chau Vo)



**Above:** A filtering fume extractor is a free-standing piece of equipment that has a blower and filters within a cabinet. (Image courtesy BOFA)



**Left:** This is a Filtrabox user interface with variable speed control; the speed is expressed as percentage flow. (Image courtesy Chau Vo)

Extractors come in all shapes and sizes, so you will be able to choose one that optimizes your workspace. (Image courtesy TBH North America)



out the dust and VOCs from the airstream. The purified air is then recirculated into the room.

So, you can completely avoid the need for having fixed ducting and any holes bored through the walls. All you have to do is connect the laser to the filtered fume extractor with the supplied air hose and plug it into the wall — plug and play. When purchasing the fume extractor, tell the seller what model laser you use. The extractor manufacturer will provide a custom hose kit that will perfectly connect your laser to the fume extractor.

**Outdoor Venting Potential Pitfall No. 2:** Deciding where the blower and the ducting will be located needs to be discussed between you, the landlord, the HVAC contractor, and the construction contractor. Coordinating the discussion and agreeing on the final location can be a challenge and is often an exercise in compromise between what you want, and what is prohibited or restricted by either building code or the landlord's policies.

**Simplified Solution:** The filtering fume extractor can be placed anywhere within 8' of the laser with the supplied air hose. If you need a longer hose, consult with the manufacturer and additional hosing can be ordered. You can even ask the manufacturer for a CAD model of the extractor so you can input it into your own or your architect's 3D CAD software and hash out your physical workflow within a virtual layout.

Extractors come in all shapes and sizes, so you will be able to choose one that optimizes your workspace. Some are designed to serve as a base for the laser to sit on. Some can fit underneath a table, and/or have a slim design to save lateral space.

**Outdoor Venting Potential Pitfall No. 3:** Blowers are not usually sold with a cabinet enclosure nor speed controls. They can be noisy given that the mechanical whirring sounds emanate, unattenuated, into the room when the blower is running at maximum speed.

**Simplified Solution:** All filtering fume ex-

tractors have speed controls that allow you to adjust the power so you can balance your fume extraction requirement against your comfort level with respect to workplace noise. In addition, most filtering fume extractors have silencers and noise abatement technology built in.

**Outdoor Venting Potential Pitfall No. 4:** Selecting an appropriate blower can be a complicated process. In order to meet the laser's airflow requirements, you have to match the blower's airflow and power curves to the air resistance created by the ducting length, number of bends in the ducting, and duct diameter. You will need to contract an HVAC engineer to run the engineering calculations to be certain that you meet your evacuation requirements while staying within building code.

**Simplified Solution:** Experienced filtered fume extractor and laser manufacturers will have charts that match up the fume extractor size to the model of laser of your choice. The chart is based on proven performance, so you can be sure that the combination will work for you.

**Outdoor Venting Potential Pitfall No. 5:** Whenever you are exhausting pollutants to the outdoors, the Environmental Protection Agency (EPA) can get involved. The EPA must be satisfied that the contaminated air being emitted to the outdoors and the equipment used is in compliance with current standards. This can be a lengthy process involving permit applications, testing, equipment evaluations, and regulatory paperwork. Your neighbors may also object to the toxins being sent their way, which may lead to complaints to the landlord and/or the municipality.

**Simplified Solution:** You can avoid the EPA altogether by eliminating airborne emissions to the environment with a filtering fume extractor. The filters remove the contaminants so that the air can be recirculated back into the room.

**Outdoor Venting Potential Pitfall No. 6:** Let's say that business is going great with your first laser and the blower venting setup you've invested in. Now, you want to install a second laser to capitalize on your momentum. Unfortunately, you'll have to upgrade

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/ SETTING NEW STANDARDS



**Above:** Respirable dust is captured in pre-filters and HEPA filters (99.997% at 0.3 micron). VOCs are captured in filters filled with specialized activated carbon blends. Separated filters are recommended to maximize the capacity of each filter. Combined filters can be practical, but will not last as long and will cost more in the long run. From top to bottom: separated aluminum cartridge prefilter, HEPA filter, and activated carbon filter. (Image courtesy Chau Vo) **Right:** Because filtered fume extractors are essentially plug and play, you can execute your growth plans with immediacy by just ordering a new extractor. (Image courtesy BOFA)



If you choose the route of simplicity associated with filtering fume extractors, it just might keep you on the quickest path toward perfecting your craft and achieving your business goals. (Image courtesy TBH North America)



AT FIRST GLANCE, YOU MIGHT THINK YOU CAN GO THE DIY ROUTE WITH FUME EXTRACTION, BUT THAT ISN'T NECESSARILY A GOOD IDEA. READ WHY HERE: <http://gpro.link/diyfume>.

your entire blower and ducting system and go through the whole engineering and construction process again.

**Simplified Solution:** Because filtered fume extractors are essentially plug and play, you can execute your growth plans with immediacy, and strike while the iron is hot by just ordering a new extractor. Some extractors can even be upgraded in the field to service two or more lasers simultaneously.

### Outdoor Venting Potential Pitfall No. 7:

Some of us who live in parts of the country where winters are brutally cold know that even small drafts through the window frames, walls, and insulation of our homes can cause significant loss in heat, resulting in inflated energy bills and uncomfortably cold rooms. The heat escapes through these passive leaks of air between the inside of the home and the outdoors. Now, imagine installing a blower, which actively pushes out huge volumes of heated air outside. We're talking hundreds and sometimes thousands of cubic feet of air per minute (CFM).

This will proportionally increase your energy consumption and maybe even require you to upgrade the heating system in order to keep the room warm enough to work in. The same issue exists for air-conditioned rooms in hotter climates. You should consult an HVAC engineer to project what your heating/cooling bill might swell to and assess whether or not you need a bigger furnace or air conditioner.

**Simplified Solution:** Because filtering fume extractors recirculate the air inside the room and do not vent anything to the outdoors, your precious heated or cooled air will remain within the building.

### MAKE INSTALLATION A BREEZE

Despite the inherent simplicity of filtering fume extractors, there are still some things to consider to make installation a breeze, though filtering fume extractors are virtually plug and play.

You need to make sure you have the right electrical socket to plug into. Most extractors operate on a standard 120V, 15-amp wall socket and breaker. It's a given that you

will have a standard socket, but make sure that the circuit you intend to use does not have other high-current pieces of equipment on it. The circuit breaker may trip prematurely if this is the case. For example, if a fume extractor draws a maximum of 12 amps, and you have another machine which draws 5 amps on the same circuit, your 15-amp circuit breaker will trip and cut off the power.

Some higher power systems require 120V, 20-amp wall sockets and breakers. These sockets are common, but less so than a 15-amp wall socket. You may want to check whether or not you have one already.

If you don't have an available or appropriate wall socket, call a certified electrician and provide him with the extractor's electrical specifications (available from the manufacturer). The electrician will easily specify and install the sockets and circuit breakers necessary for your application.

Though most high-quality filtering fume extractors will let you know when the filters need to be replaced and will also allow you to proactively check the status of the filters at any time, you still need to keep on top of placing your orders for replacement filters

and allow for a few days for shipping. You may want to consider ordering some spare filters in advance to have on hand, especially if you have a tight production schedule.

I've outlined many of the pitfalls associated with venting to the outdoors, not to say that it cannot be done, but to help you navigate the unknown. With proper planning, you can execute either outdoor venting or filtering fume extractor solutions. That being said, if you choose the route of simplicity associated with filtering fume extractors, it just might keep you on the quickest path toward perfecting your craft and achieving your business goals without experiencing the dreaded "Ugh ..." moment. **GP**

**CHAU THIEN VO** is an inventor, industrial designer, and is the Vice President of Engineering and Product Marketing for PAT Technology Systems. Chau brings 19 years of extensive experience in designing air purification and fume extraction systems, having worked in both North America and Europe. He blends design, engineering, product marketing, and creative thinking strategies in leading PAT's technical team to consistently output innovations that clean air.

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# PRODUCTION PURPOSES

**HOW TO INCREASE SUBLIMATION PRODUCTION WITH LESS STAFF, LESS SPACE, AND PAY YOUR EMPLOYEES WHAT THEY ARE WORTH**

**D**o you want to increase sublimation production with less staff, less space, and pay your employee what they are worth at the same time? Yes, it is possible for all size companies! It comes down to you (the employer), software, space, equipment, and training your crew to be as good as you or better.

## STARTING POINT

You are probably thinking, why does it come down to the employer first? Simple. Everything starts and stops with you. We as owners have to hold ourselves to a higher standard of accountability at all times. If we don't do our part to maintain order and profitability, we cannot pay our staff well, pay our vendors, and take care of our customers. It is not an easy road, but it is a road that can lead you to success.

As a business owner, we hear the word "software" and get nervous. Why? For many, it comes down to cost and making the time to learn something new, which can take hours or weeks to learn. We need to start viewing software in a different light. Have you heard the term, "Time is money?" Software is there to save you time and money if you use it to do so.

Think about this: When our company started out in 2003, we handwrote orders and printed a copy for the customer. From there, we started using three-part forms, so the customer got a copy, we had an original, and one went to production. Then about year eight when my wife came on fulltime from banking, she was fluent in Microsoft Excel, which allowed us to type orders up and save digital copies. That also allowed us to email orders for approval.

Fast forward to around 2017. We had a local company start writing us our own software. The first part that was developed allowed us to write up orders and save them in the software with a search engine. Since all info is saved in the software, we can not only type up new or repeat orders faster, but anyone could help the customer with an order and know exactly what the last customer rep did with them and why. Anyone could sit at their desk without getting up and know exactly what was done.

We never look at software and think it helps us save money or make more money faster, but it does or what would be the point of owning it. Everyone can read a typed order more clearly. Being able to save old orders is a huge help for future orders, being able to email orders gets you faster approval, and having software



With the right methods in place, you can increase sublimation production with less staff, less space, and pay your employee what they are worth at the same time. (All images courtesy Howard Potter)



We currently have the same amount of space to work in as we did when we ran the business from our home. By keeping our setup efficient and upgrading equipment, we still do a great job for our customers.

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MAKING SUBLIMATION MOVES



We have a semi-automated heat press with three other heat presses as backup.



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Our commercial convection oven allows us to produce up to 24 coffee mugs every 11 minutes.

to catalog all orders to search and write up repeats in under five minutes is a huge money maker in the end.

Imagine writing up a repeat order as small as \$100 to \$1,000 in under five minutes. Either way, that makes you more money faster, sending you on to the next order to write up faster.

**FOCUSED SQUARE FOOTAGE**

Knowing your space and equipment, and having a realistic layout focused on the ergonomics of production, is crucial as well. It is important to not only know your square footage, but put yourself in the space and think about how you can make everything run more smoothly with one or more staff member.

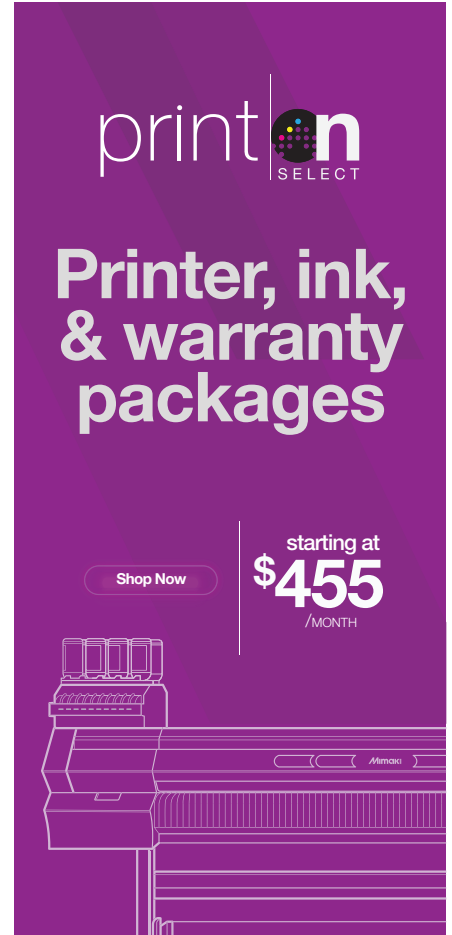
Years back when we started from our home, I had my computer along one wall, and on my back wall was our heat press and a little convection toaster oven for baking coffee mugs for sublimation. It allowed me to design and produce in between, or press and produce coffee mugs at the same time since it took 15 minutes to bake two mugs at the same time. So realistically, I could keep the computer printing, heat press five to six shirts, and prep two mugs to be ready when the other two mugs were done. All in a 14' X 14' room in our house.

Run the math. At minimum, I could easily heat press 12 shirts and produce eight coffee mugs. Say we only netted \$4 per item times 20 items finished in an hour. That is a rough net profit of \$80 an hour working from home.

*continued on page 94*



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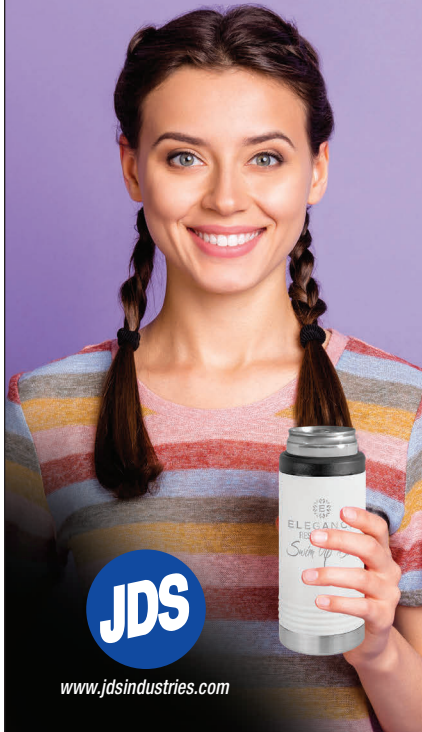
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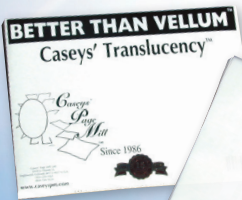

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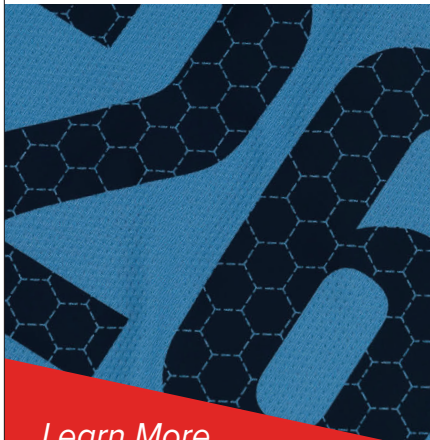
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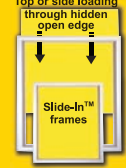
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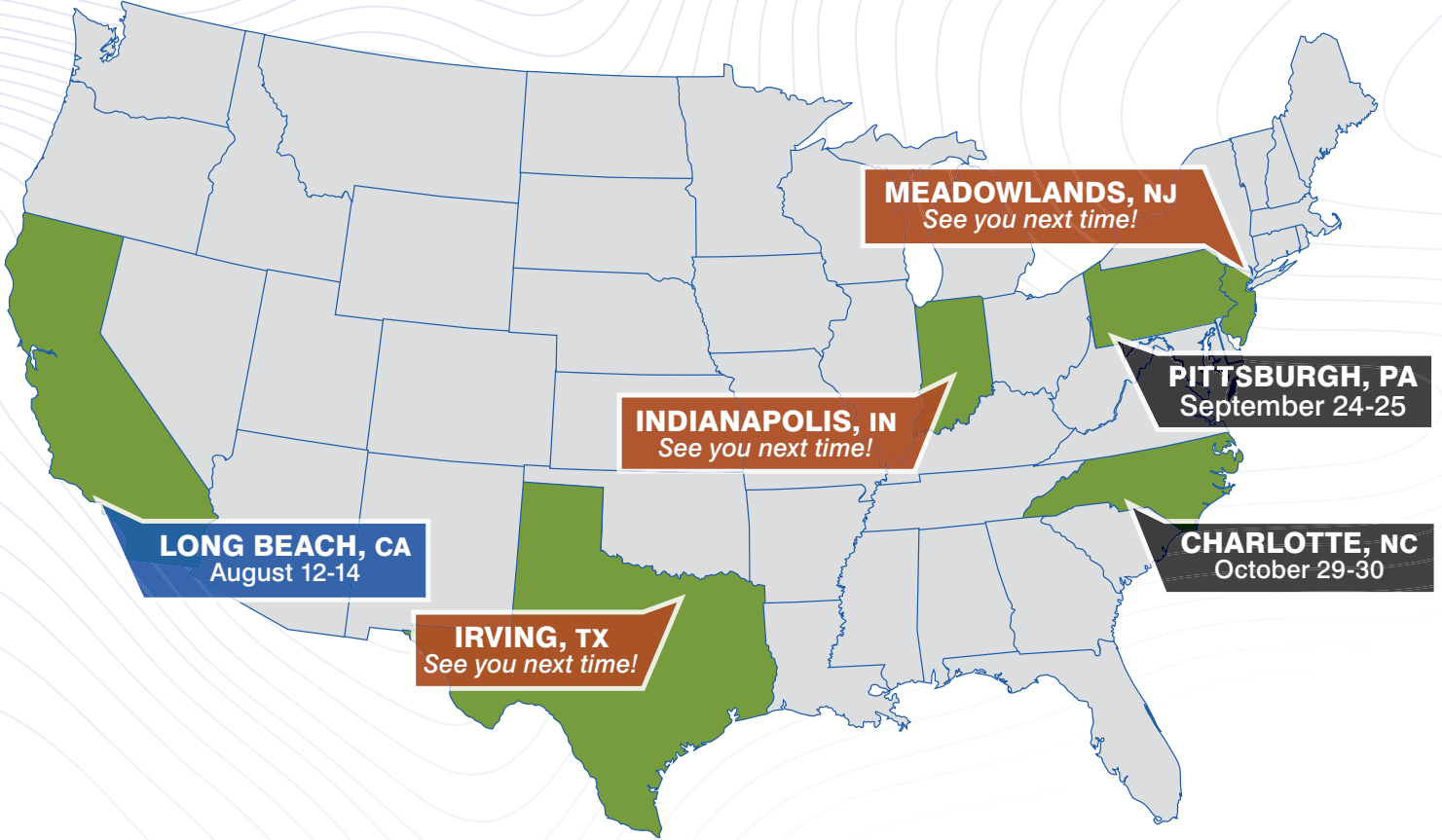
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### WEDNESDAY, AUGUST 11, 2021

10 a.m. — 4 p.m.

- Digital Technology Group - Print on Purpose - How to Start and Grow a Successful Print Business
- Hirsch Solutions Inc – Join the DTG Revolution!

### THURSDAY, AUGUST 12, 2021

8-9:30 a.m.

- Epilog Laser - Get the Most from your Laser Investment: Tips & Techniques to Save Time & Increase Profits
- STAHL'S' - Top Apparel Trends and How to Print Them

11 a.m. — 12:30 p.m.

- GraphicsFlow/InkSoft - Manage your Graphics, Boost your Profitability
- Transfer Express – Screen Print with Just a Heat Press

1:30-3 p.m.

- Trotec Laser - Skills, Strategies & Laser Hacks to Help you Succeed in a Changing Business Environment

### FRIDAY, AUGUST 13, 2021

8-9:30 a.m.

- Corel Trainer - CorelDRAW A to Z
- JDS Industries - Troubleshooting Sublimation

11 a.m. — 12:30 p.m.

- Transfer Express – Should you Print Licensed Logos?
- PDS Equipment - Why UV Print & Why Now

1:30-3 p.m.

- Rayzist Photomask - Learn Sandcarving with Rayzist Photomask

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## STROKES OF GENIUS

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maintain his signature quality, and run the business itself. Then suddenly, the pandemic put concerts into quarantine.

Baker's studio weathered a precipitous decline in activity, and although there is currently some recovery, with album promotions, drive-in shows, and live streaming events, it may still be months or even years before that aspect of his business resembles its pre-COVID health.

The uncertain situation has prodded Baker Prints to devote greater attention to a different market sector, ultra-high-quality limited-edition fine art prints. The standards can be intimidatingly rigorous, but the revenues per job are significantly greater as well.

He is confident about the capabilities of his equipment and team. "We're very much pushing the envelope in terms of what can be achieved in high-end, high-resolution screen printing for shops of comparable size. For example, the four-color process work we do is head and shoulders above any work I've seen from competitors. It's actually become essential to our survival in the virus-shutdown era, since 90% of our work was concert posters."

The fine art prints are ambitious in different ways than poster art, often featuring what Baker calls "a far less common complexity" involving naturalistic shapes and layered designs. Does he view it as a new direction? "Ideally, both sides of the business would be thriving simultaneously," although he acknowledges realizing that the ideal would require some logistical upheaval, and a new focus.

Even in the face of unprecedented adversity, Baker is optimistic about the future and his ability to adapt and succeed. Maybe it's just intuition, but he's got a good feeling. Call it an inkling. **GP**

**MICHAEL HURLEY** is a staff writer for the AWT World Trade Group in Chicago. For more information or to comment on this article, email [sales@awt-gpi.com](mailto:sales@awt-gpi.com).

## MAKING SUBLIMATION MOVES

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Fast forward to now where we still have a 14' X 14' room for sublimation. What is different about it? We upgraded to a laptop and faster printer that prints up to 13" X 19" images with low ink consumption, have a semi-automated heat press with three other heat presses as backup, a commercial oven for sublimating mugs, and our racks and four shelves to store orders and stock.

The printer and computer take up less space and are cheaper to operate. The heat press has a setting we created so no one guesses at the temp, pressure, and time to lower error rates, and when it is done pressing, it lifts itself up and swings away without ruining product. Our three other heat presses at any time can be turned on and we can ramp up production if needed.

Our commercial convection oven allows us to produce up to 24 coffee mugs every 11 minutes. Being able to have the four racks in our space helps keep our orders and stock near us and organized at all times to keep our production space efficient.

Now let's figure some basic numbers out. All of the upgrades over time cost around \$12,000, and in the same size space but at minimum with one person in production, we can produce 12 shirts and 24 mugs per hour if we needed both to run at the same time. Now apply that same net cost from 2003 of \$4 per item times 36 pieces completed in an hour — it equals \$144 net per hour. Being in the same size space means you can afford to pay your staff well to do a great job for you and your customers.

### TRAINING PURPOSES

Training your staff to be as good as you or better is important. Your customers depend on it as well as you. It is single-handedly one of the hardest things to accomplish.

As business owners, it's easy to forget how long it took us to learn something,

so we need to teach step by step, yet not forget to explain *why* we want them do something a certain way. This is where software, equipment, space, and training all become one. Take your time walking your employee through your process; step and repeat for weeks, not days.

My suggestion from experience when trying to train new hires when we do not have the extra time is have them start out simple. Less is more. Have them operate the printer and prep the prints for production. Just that little bit of help the first two or three days is huge and easy to teach. Then teach them how to operate the presses along with printing positions, etc., and why. Teach them the easiest parts first to build their confidence.

If you or your space is not organized and does not flow for production purposes, you will lose the employee as fast as you get him or her. Over the years, we have learned it takes a minimum of three months for new staff to break in on a job, and that is the most important time period to work closely with them and be fair. If the employee did not get the one-on-one you would normally give to train, extend that time to be fair to the employee and yourself.

Be on top of your game at all times. Maximize your space and your time. They both have a value to you that determines your profit and how well your company continues to grow! **GP**

**HOWARD POTTER** has been working in the promotional industry for 17 years, from designing to building brands and a family-owned business. He is the co-owner and CEO of A&P Master Images LLC with his wife Amanda. Their company offers graphic design, screen printing, embroidery, sublimation, vinyl graphics, and promotional items. Howard, his family, and the business reside in Utica, New York. For more information, please visit [masteryourimage.com](http://masteryourimage.com).

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# PANEL: THE STATE OF THE WIDE-FORMAT PRINTING MARKET

**INDUSTRY INSIDERS DISCUSS THE WIDE-FORMAT PRINTING MARKET AND ITS EFFECT ON THE U.S. MARKET**

In a recent panel discussion, *GRAPHICS PRO* executive editor Cassie Green talked with global print leaders about what's happening in the wide-format printing market worldwide. Topics discussed include supply chain and shipping issues, inventory and product fulfillment, current supply and demand in the market, trending and emerging markets, and more.



“What’s going on now is, due to shortages in container space, we’re having to make choices and having discussions with our supply chain management folks that I’ve never had before around looking at the amount of space we can actually get in a month and what the factories can turn out in a month and actually having to make some judgments around what the most pressing concerns are. So, for instance, making sure that people don’t go

down. So, making sure that ink is coming over, making sure that parts are coming over. And sometimes, unfortunately, sacrificing space from something else that actually may be ready to go and is sitting on a dock somewhere. But we’ve had to make allocation choices, and we’ve had to make priority choices because lately, in a given month, we never seem to get quite as much space on the ships as we could actually use.”

— ANDREW ORANSKY, PRESIDENT AND CEO, ROLAND DGA



“The better information that we can get, the better we can serve our customers, the better we can serve our dealers. Also, take this opportunity to stock a little bit more when you can. And don’t do the run on toilet paper and everything like that and hoard. Look

at what your appropriate need is going to be over the next month, two months, or three months and do a little bit of planning and communicate that through to the dealers and through the manufacturers so that we can help to process that through as well.”

— KEN VANHORN, VICE PRESIDENT, MIMAKI USA



“We saw what was happening as early as we could, and we started increasing our orders. And, of course, everybody else did too, and then that filled up the ships faster. So, then we started airing things over, and then, of course, that got jammed up. And then, all of a sudden, the prices, last I checked, were four times higher than they were a year ago. So now we’ve got the added

pressure of price increases, which we’re seeing happen. So, it’s a challenge for all the products. But I will tell you that the products are coming in ... I would just say there’s a month or two delay based on what’s going on. So, plan ahead. We’re used to this just-in-time world of Amazon and everything. Those days are over for a little while.”

— BRIAN PHIPPS, PRESIDENT AND GENERAL MANAGER, MUTOH AMERICA



“We’re starting to see a lot of the commercial print people actually getting into large format. When we started to look down at where a lot of the demand was coming from last year, it was commercial printers. And about 58% is the number of commercial printers that actually have large format. That is now

expanding, and they’re getting much more into the large-format business. So, it’s going to change the landscape a little bit, especially since some of the bigger ones have a lot of automation.”

— TOM WITTENBERG, INDUSTRY RELATIONS AND EVENTS MANAGER NORTH AMERICA, HP



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