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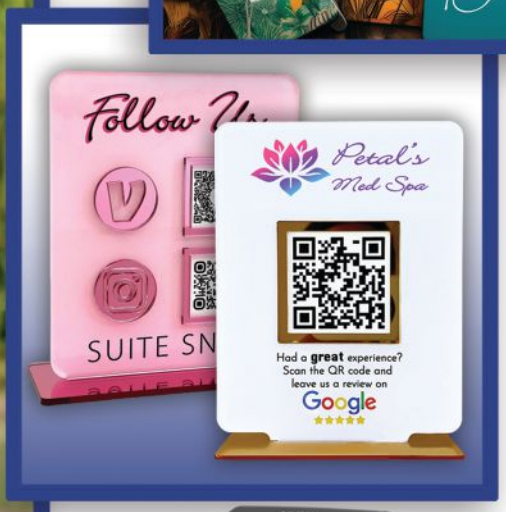
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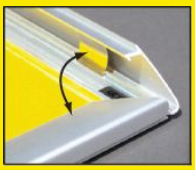
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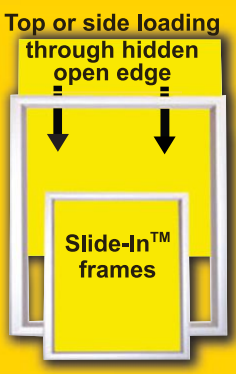
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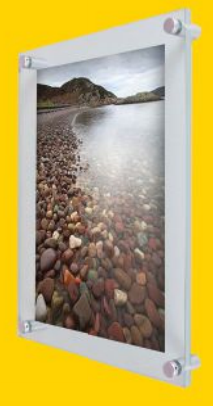




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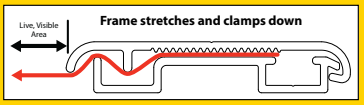
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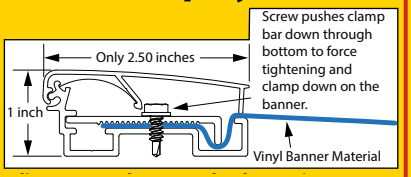






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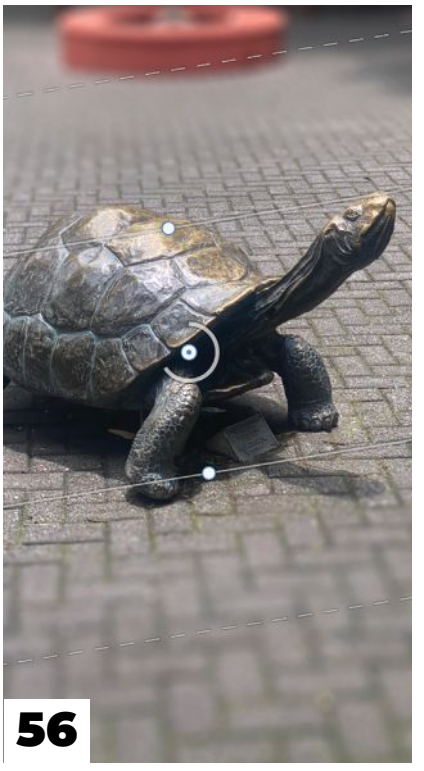
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James Anderson
is the editor-in-chief of GRAPHICS PRO magazine. He can be reached at janderson@cahabamedia.com.

Artificial intelligence policy

Using artificial intelligence (AI) these days is not unlike watching bad reality TV: Almost everyone has experimented with it. Some are the tried-it-once-but-didn't-like-it types, some have grown to use it occasionally. Some are regular users who won't shut up about it, while others use it way more often than they'd admit.

Wherever you may fall on the AI use spectrum, it's safe to assume that the continued use of AI tools is indeed the new normal. I'm sure most readers have discovered the business advantages of asking ChatGPT to compose a stern, but polite email to a client with an unpaid invoice. Perhaps you've even gone so far as to use a tool like Midjourney to help design an image used in one of your products.

According to (frankly, an AI-assisted Google search), but originally a Stanford University Human-Centered Artificial Intelligence Institute survey, 78% of organizations globally currently use AI in some aspect. The highest level of use comes in IT, marketing, and sales departments.

Of course, in the publishing industry, we're no different. Ideally, any journalist, editor, art director, etc., has learned to use AI as a tool for research and organization. From an editorial standpoint here at GRAPHICS PRO, that's as far as we're taking it. We pride ourselves on authentic, human-edited content. We don't use AI to write content, and we edit out contributed content that we suspect has been AI generated. Occasionally, our art department will use AI editing in images or graphics, and when they do, it is clearly labeled as such.

For certain, it's a strange new world in publishing, but in my opinion, it has been since the early days of the internet. Technology changes, we adapt, and continue to do our best. As AI content came to the forefront in a lot of publishing discussions, Cahaba Media Group, the parent company of GRAPHICS PRO, developed a policy that I'm sharing here to let readers in on the paths we are taking to assure you that we're producing real content generated by real people. If you have any questions on the policy below, or if you want to talk about this fascinating topic (or bad reality TV), reach me by email at janderson@cahabamedia.com.

Cahaba Media Group's editorial policy on artificial intelligence

Our approach to using AI is simple: it is a great tool for improving and optimizing content, but never a replacement for insightful, quality content written and edited by a human.

While we may use AI to inform, assist, or improve our work, our editors will never use AI tools to write exclusive content published under a CMG brand. We will also continue to communicate this expectation with our contributors and writers, and we will do everything within our power to thoroughly vet the content we publish to verify a human was responsible for the creation and editing of that content.

In any instance where AI is used to alter or improve content (produced by a human) for our brands and we choose to move forward with publication, Cahaba Media Group will include an editor's note or other attribution clearly identifying the use of AI. Any use of AI by our editorial and design teams will be guided by an intent to better serve our audience.



James Anderson
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5 questions *with...* Adam Sumner



Adam Sumner is the owner of Wrapix Imaging and Wrapix Academy in Burbank, California.

1 You're well-known in the vehicle wraps space, but how did you get into the industry?

I got started in the industry back in 2006 by making custom motorcycle graphics as a hobby. I grew up in an offset print shop, so printing has always been a part of my life. As I got older, I naturally gravitated toward wide-format printing.

2 Aside from wraps, what else does your shop do?

We work on a wide variety of projects — from special events to architectural films — but since COVID, vehicle wraps have been our main focus.

3 Through Wrapix Academy, you train graphics installers. What led you to take on training as well?

Years ago, I was asked to host a training class for a secondary education company, and honestly, I just fell in love with spreading the passion for wide-format printing and graphic applications. Eventually, I was given the opportunity to become a 3M Authorized Trainer. That program played a huge role in launching my career early on, so I was honored to even be considered for the title.

Over the years, I've spent a lot of time perfecting not only my installation techniques but also my teaching methods. Some of those techniques have actually become foundational elements in several 3M training programs. I believe the most important thing we can do to move our industry forward is to share knowledge and hold each other to the highest standards. Training doesn't just help people improve their install skills — it also teaches the value of those skills and how to present them professionally.

4 You head up the WRAPSCON space at a number of GRAPHICS PRO EXPO events. What can attendees expect to see there?

I get really excited about WRAPSCON University — it's unlike anything else in the industry. I actually got my start at this very show back in 2005; it was my first introduction to wide-format printing. I wish a program like this had existed back then to help guide me in the right direction. This industry can be tough to navigate, from materials and printers to software and shop supplies — the options are endless. Back in the day, every time I called a supplier, they would tell me that whatever they sold was what I needed. But that wasn't always true. The idea behind WRAPSCON University is to provide a space for people who want to either get started in or expand their wrap business. This year, we're offering hands-on installation training, as well as deep dives into printer options, file setup, and best practices for running an efficient wrap shop. WRAPSCON University is the future of continuing education in the wraps industry.

5 What's the most important piece of advice you share as a wrap install trainer?

The only thing I can't teach is patience. Installation is both a skill and an art. You have to learn to embrace your failures and continually challenge yourself. Don't be so quick to blame the material — it's all designed to stick to a surface. It's our job as installers to learn how each film wants to be installed and work with it, not fight against it. **GP**

Know someone who should be featured on this page?

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SPEAKER



Mark Priede
Vice President of Sales
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INDUSTRY UPDATES

ACQUISITIONS

Gildan Activewear Inc. and **HanesBrands Inc.** have entered into a definitive merger agreement under which Gildan will acquire HanesBrands. The acquisition is expected to close between late 2025 and early 2026.

NEW HIRES & PROMOS



Tej Shah
Overture Promotions
Overture Promotions introduced **Tej Shah** as the company's new CEO. Shah has led the firm's sales, marketing, and e-commerce efforts for 15 years. He will succeed **JoAnn Gilley**. As part of this leadership transition, **Brian Lisinski**, who has served as chief financial officer, will assume the role of chief operating officer.

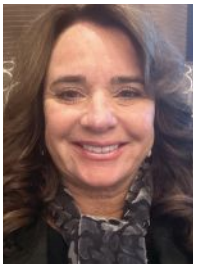






Matt Brooks, Ruby Davis & Matt Hansen
Nazdar Ink Technologies
Nazdar Ink Technologies added three new hires: **Matt Brooks** to the OEM team; **Ruby Davis** to the R&D team; and **Matt Hansen** to the product marketing team. **Brooks** brings over 25 years of expertise in the inkjet industry. With a career spanning every facet of inkjet technology — from concept development to press design and go-to-market execution. **Davis** brings with her experience in microemulsion dynamics and an approach to sustainable product design within R&D. Davis will be responsible for researching and developing new and innovative inks and coatings products, with the aim of generating new business and supporting the growth of existing accounts. **Hansen** brings expertise in the UV-LED technology knowledge from previous industry experience. He will execute product strategies and assisting the OEM Group.

RETIREMENTS



Missy Kilpatrick
SRG
SRG announced the upcoming retirement of **Missy Kilpatrick**, vice president of business development, after more than four years with the company. Kilpatrick brought to SRG a wealth of experience from her prior roles at The Book Company and Castelli USA, a career spanning over 35 years in the field. Since joining SRG, Kilpatrick has played a pivotal role in driving strategic growth and cultivating key client relationships.

UPCOMING EVENTS

GPX Meadowlands
September 12-13
Meadowlands, New Jersey
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GPX Charlotte
November 6-8
Charlotte, North Carolina
g-p-x.com/nc

GIVING BACK

Signarama Franchisees **Matt Mattingly** and **Kelly Mattingly** printed and distributed hundreds of signs, proceeds from which went directly to the **Community Foundation of the Texas Hill Country**.

UPDATES

swissQprint announced the construction of new premises in the U.S., scheduled to be completed by mid-2026.

Nazdar joined the **International Metal Decorating & Packaging Association**.

Ninja Transfers enhanced its shipping capabilities by adding Amazon Ground Shipping alongside its existing UPS Ground service.

Print Media Centr launched **PrintFM**, the first 24/7 global internet radio station dedicated exclusively to print and graphic communications.

Image360 Charleston is now under the ownership of local entrepreneur **David Williamson**.

Oculus Business Solutions and **Lean Shop Manager** launched the **Lean Shop Mastermind Alliance**, an approval-required academy designed to help shop owners foster collaboration and growth.

WEBINARS

Radian Laser
September 11

Xante
October 2

IT Supplies
October 16

OMTech Laser
November 4

All times 12 p.m. CST
Register at **gpro.link/webinars**

AWARDS & RECOGNITIONS

SRG has received a Silver rating from **EcoVadis** for 2025, placing among the top-performing companies globally for sustainability practices.

Minuteman Press Mount Kisco won Business of the Year Award from the Mount Kisco, New York Chamber of Commerce.

The Advertising Specialty Institute named **Carleen Gray**, CEO of **STAHLS'** the 2025 Counselor International Person of the Year.

Epson, Mimaki USA, STAHLS' Fulfill Engine, OnPrintShop, Fujifilm, and **Agfa** have been awarded with PRINTING United Alliance 2025 Pinnacle Product Awards.

The Brown family, inlcuding Franchisees **Kevin Brown** and **Maribel Brown**, of **Minuteman Press Rancho Cucamonga** broke their own record for monthly sales volume across the Minuteman Press franchise system.

Have news to share?
Email gpeditorial@cahabamedia.com.

PARTNERSHIPS

STAHLS' partnered with **Lane Seven** to host Heat Press Pro Day.

Glantz unveiled the Glantz Sign Supply Wizard, a new online tool created in collaboration with **Principal Industries**.

Ninja Transfers announced an official partnership with **Heat Press Nation**.

Atlantis Headwear partnered with **Melloblocco,** the world's largest international bouldering gathering, to create a cap for the event's 21st year.

DPI Laboratory entered into a strategic partnership with **Kothari Infotech** to launch KFLOW, a workflow automation platform.

Cleo announced a partnership with **Grimco**; the company now utilizes Cleo's supply chain orchestration solutions.

SRG partnered with **Rollink**, a travel brand known for its collapsible luggage solutions.

Roland DGA added three key dealers to its network of authorized resellers: **Grimco, N. Glantz,** and **Clampitt**.

Gemline partnered with **Hartmann**, a luxury travel brand of the Samsonite portfolio.

Orbus has become a preferred supplier of **Facilisgroup**.

Ninja Transfers entered into a strategic partnership with **MakerFlo Crafts**, a supplier of sublimation and DTF-ready blanks.

Prime Line, a division of **S&S Activewear** and a provider of promotional products, announced a partnership with **YETI**.

SRG partnered with **Satechi**, a tech accessories brand.

Roland DGA Corporation added **ND Graphics** as its newest Canadian authorized dealer.

Gildan named **S&S Activewear** an exclusive wholesale distributor in the U.S. and Canada.

STAHLS' and **Fanatics** teamed up to offer personalized jerseys to MLB All-Star Week fans.

Gemline added **Cool Gear**, a drinkware brand, to its lineup of retail brand partners.

Atlantis Headwear partnered again with the **ONA Short Film Festival** in Venice to release their fourth collaborative short film titled Pueblo del Sol.

L2 Brands & Legacy Headwear are the official headwear provider for **Harrah's CPGA Pro-Am** at Sequoyah National Golf Club.



PPF 101

Is paint protection film right for your shop?

By Charity Jackson

As a sign shop that specializes in vehicle wraps and fleet graphics, paint protection films (PPF) have been a consideration for our shop for a while, but not a service we've yet jumped into. The newer generation of PPF is worth investigating, but we still may not choose to add it to our services, and I'll tell you why.

What is PPF?

So, let's start with the basics. We'll discuss colored PPF in a minute, but for now we'll focus on clear films. Paint protection films are clear urethane films that protect paint and offer UV resistance. They're typically applied to the hood, bumper, mirrors, and other high-impact areas. They help protect a vehicle's paint and help with its resale value.

The films have evolved over the years as the clarity of the film has improved, along with the ease of installing. Clear films retain the original paint color of the vehicle and look nearly invisible when installed correctly.

It's a thin, stretchable film that conforms to the contours of the vehicle much like color change and printable wrap films, but PPF is thicker and more durable. PPF also has a longer warranty at five to 10 years versus color-change wrap vinyl having a warranty up to three years. Higher-quality PPF tends to have a longer warranty.

Elongation at break

PPF also has a higher stretch percentage, often referred to as elongation at break. A premium



Image courtesy of Avery Dennison

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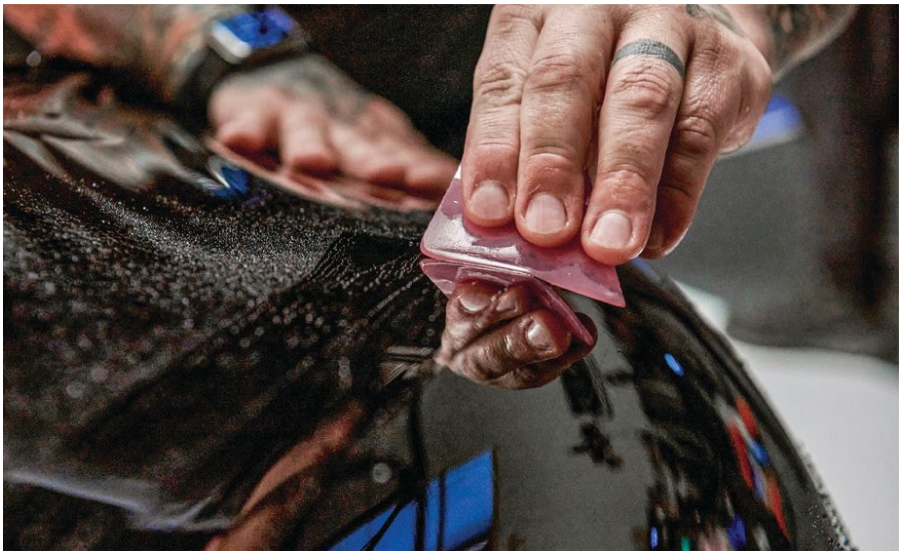
Images courtesy of Avery Dennison

color-change wrap vinyl will have an elongation at break percentage of up to 200%. This means the film can be stretched up to two times its length before breaking or tearing. It doesn't mean you'll routinely stretch it this much during the install, but you can in areas when necessary.

For PPF, the elongation at break percentage can be well over 300%, which means the film can be stretched over three times its original length. So why is this higher stretch rate important?

Since PPF is primarily used to protect the surface of the vehicle, the higher stretch percentage allows the film to absorb and distribute the force from debris or rocks hitting the vehicle surface. This higher percentage also helps with the overall durability of the film and its resistance to tearing.

During installation, the increased stretch helps the film to conform to curves and contours. This helps you get a smoother install without bubbles and wrinkles. For PPF with self-healing properties, the higher stretch rate allows it to be repaired with heat.



Color

Clear PPF was the only option for a long time. So, if you wanted to protect the surface of your vehicle, you added a clear PPF film and maintained the same vehicle color.

Later, if you wanted to change the color of your vehicle without painting, you could install a color-change wrap, but this doesn't give you a lot of protection from the damage from rocks and debris. So, installers could then add PPF over the top of color-change wraps to offer both a change in color and the protection from the PPF film. Usually, installers did this in



Images courtesy of 3M

high-damage areas, but they could do it all over if desired.

Now, the PPF films come in colors. While there still aren't as many color and texture options as a color-change wrap film, there are still an impressive number of colors, including camouflage print and color-shift options.

While colored PPF films are more expensive than clear PPF films and color-change films, they give users the best of both worlds. With the increase in car values and the awareness of these films, vehicle owners can now maintain their vehicle's finish while playing with changing up the color.

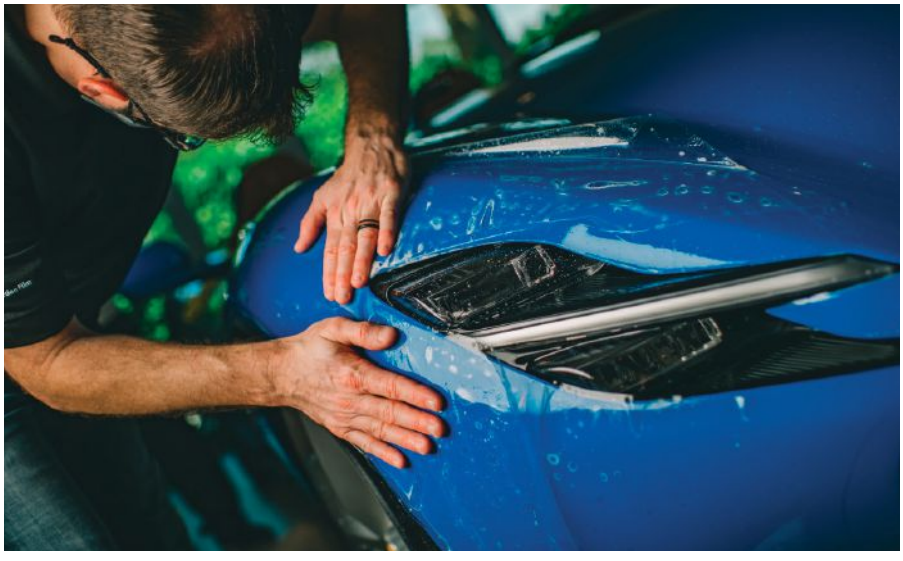
Like color-change wraps versus commercial wraps, color PPF does come with a unique set of challenges. These challenges typically have to do with the differences in how the color films react during installation, to contamination, heat, and then their cost.

Considerations

Adding PPF to a vehicle is a premium service. It's not something every vehicle owner is going to ask for, but a customer who has a nicer vehicle that they want to protect is likely to be willing to pay for this service. If your shop already specializes in vehicle wraps or other vehicle-enhancing services, this might be a good area to get into as an upsell to your existing services.

As with any new service, training and skills are required to create a quality product efficiently. Even though I've wrapped for years and years, I wouldn't jump into a PPF project on a customer's vehicle without a lot of practice and training ahead of time.

There are certified training opportunities out there. Just like with commercial wraps and color-change



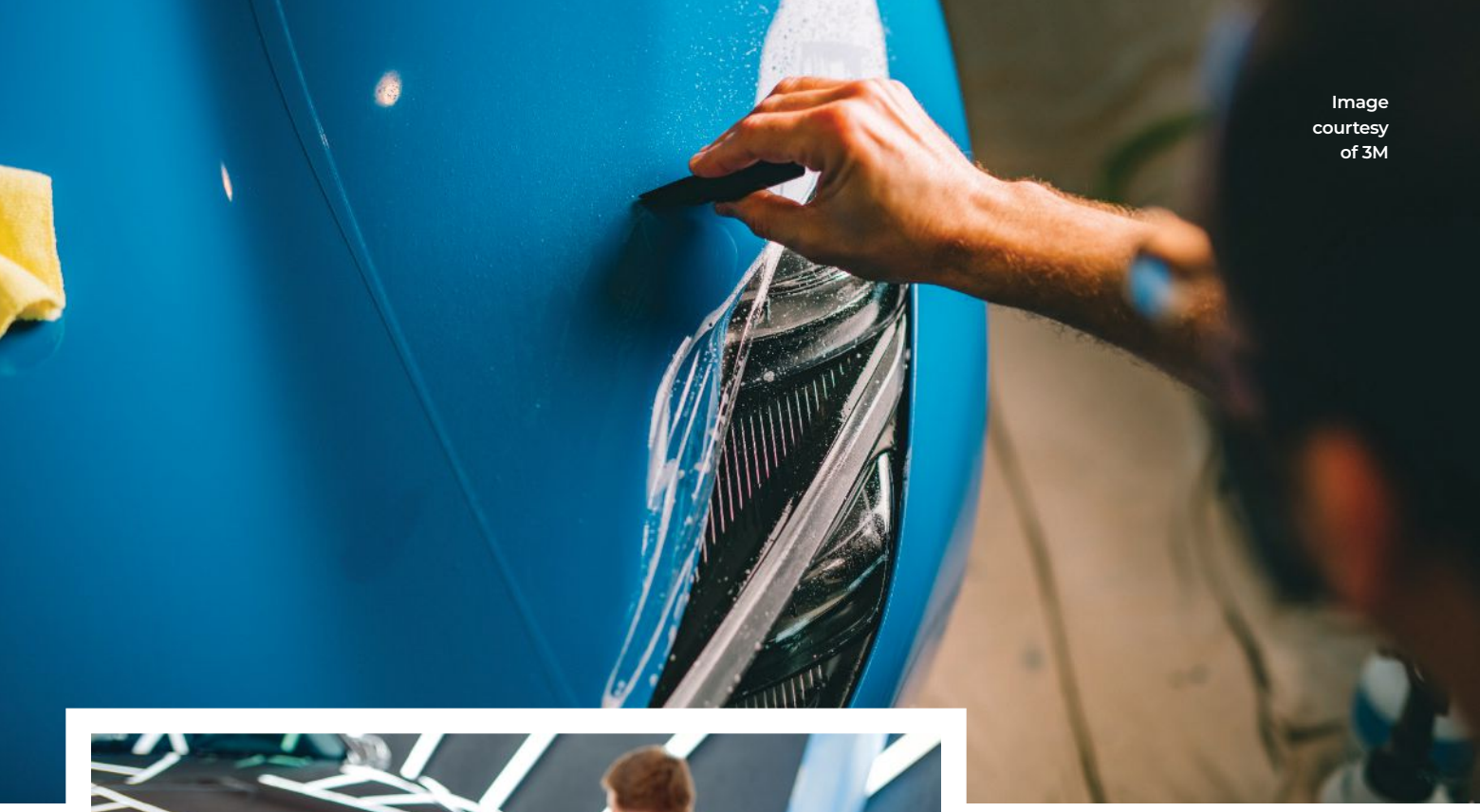
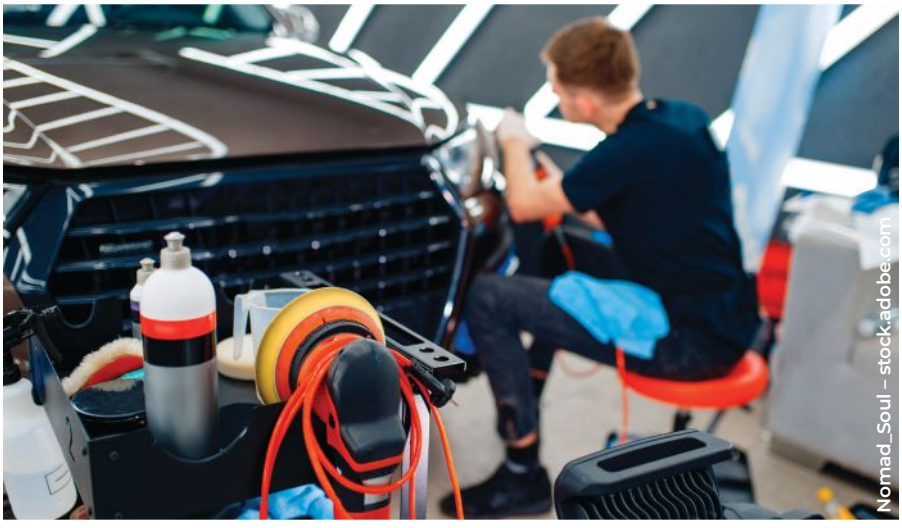


Image courtesy of 3M



Nomad_Soul – stock.adobe.com

wrapping, I highly recommend taking a hands-on training course before offering PPF as a service.

In researching the process of installing PPF, I've learned a lot about vehicle prep, slip solution, tack solution, the differences in squeegee technique, and edge finishing before trimming. While there are a lot of similarities to wrap installation, the differences in installing PPF are where skills, training, and experience are key.

Why not?

So, back to my initial statement as to why we may not choose to add PPF to our list of services. Our shop is simply not set up for it. Like with color-change wraps, I know the limitations of our shop.

About 20 years ago, we found a commercial shop space that is close to downtown, near the freeway, with high visibility to traffic, and considered an industrial area, so we pay much less for the amount of square footage we have. But that means we have to deal with a space that is not as dust and climate controlled as I would love to have.

Since we specialize in fleet graphics and commercial wraps, our vehicles move through the shop much faster. Commercial wraps are all about the advertising, while a color-change wrap and a PPF install are about the look and how it enhances the vehicle's finish.

While we do an excellent job installing our commercial wraps, our customers are not scrutinizing the vehicle for tiny flaws like they would on a color-change wrap or PPF install. There's simply a different approach to the speed and install techniques of commercial wraps over color-change, and the cost of each reflects this.

In our industrial shop, it's harder for us to maintain the environment needed to ensure a flawless install if we worked with PPF. For this reason, we'll probably choose not to offer the service because I know we can't offer the highest quality finish in the most efficient manner. It's all about knowing our limitations.

Overall, I think PPF is a great service to offer your customers if you're interested in getting the training necessary to offer a quality product. But, you need to consider your customer base, or the clientele you're wanting to attract, and you need to consider your shop space and how this might affect the quality of the installation. **GP**



Charity Jackson is co-owner of Visual Horizons Custom Signs based in Modesto, CA. She has been in business since 1995 and has worked in the sign industry for over 30 years. Visit her website at vhsigns.com.

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Image courtesy of DPI Laboratory (Created using AI)

Inside the ink lab:

Where innovation meets customization

From Gutenberg to UV & the evolution of ink innovation

By Lon Riley

Custom ink development is literally as old as the printing industry itself. Most people in the industry are familiar with the name Johannes Gutenberg. Gutenberg was the 15th-century inventor often referred to as the "Father of Print" for his development of the first known mechanical printing press. A lesser-known fact is that Gutenberg is one of the early pioneers of custom ink development. The inks commonly used in the 1440s, at the time of his invention, would not adhere well to the metal alloy he used as the transfer mechanism for his press. Additionally, the inks failed to transfer effectively to the vellum sheets being printed, resulting in smudging and requiring extended dry time.

The solution to Gutenberg's problem was the first known oil-based ink, which was developed in his workshop using a combination of turpentine, walnut oil, and soot, as well as possibly some metallic compounds used to provide an intensity and sheen. This new ink solved both of Gutenberg's problems. It was thick enough to stick to the transfer plates and still provide a quality print with a reasonable dry time, and it apparently looked fantastic compared to the other inks of the time.

The days of one-size-fits-all ink are now nearly as old as the Gutenberg Press. Throughout the history of the development of new printing technologies, ink innovation has been as critical to the success of new printing technologies as the machines themselves. Indeed, the two development processes go hand in hand. In the case of the early presses, the invention of compatible inks followed the development of the print mechanism to achieve the desired result.

Sometimes, this cycle of invention would cut the other way. Ultraviolet (UV) inks, for example, were first patented in 1969 by Sun Chemical.



Some years passed before the mechanics caught up to chemistry, and the first UV printers were born. UV inks provided a superior platform for commercial use, as compared to solvent-based ink, reducing the volatile organic compounds released in the printing process and providing expanded applications. However, early UV printers were relegated primarily to printing barcodes and packaging labels. It was almost 30 years before UV printing as a total platform caught up, gained wide-scale use, and began to supplant prior technologies.

There are so many potentially unique applications to address through ink development, yet custom chemistry does not necessarily mean simply one-off inks created for a single purpose. Rather, a custom ink development project may yield an entire category of ink engineered for a new, narrower set of parameters. In order to generate profits, that narrower set of parameters must also address a large enough segment of the market to justify the development costs.

I began to wonder — how do companies that require custom chemistry select their development projects? How do they determine which projects to invest in that will make an industry impact sufficient to justify the expense of development?

Sanjay Maheshwari is the director of Kothari Infotech, a company that has continually developed printing technologies, software, and inks for over 20 years. Maheshwari had an interesting perspective on custom ink development and the criteria for selecting a new project.

"In attempting to develop any product that can redefine an industry, you must address a pain point. We always seek to understand the pain and address that pain first, which tends to narrow the scope," said Maheshwari. "As it goes to ink development, we have a deep, fundamental understanding of the physics, chemistry, and pigments, so our objective is to apply those principles to solve the problem. Then, we begin to look at broader applications, and what changes can make the product more market-addressable."

With all the technologies from the manual presses of the 15th century to automated offset, and now digital, the criteria for ink development have remained effectively the same — use the core principles of development in this space to address a problem or an unmet need.

As substrates, applications, and customer demands have evolved, we begin to see more highly specialized inks tailored to developing needs within the bounds of existing technology. Some of the primary drivers that can necessitate custom ink development processes include:

- **Diverse substrates:** From plastics, metals, and glass to textiles and 3D surfaces. Not all inks adhere equally.
- **Improved durability:** Outdoor, industrial, and specialty applications need inks that withstand abrasion, chemicals, UV, and other environmental factors.
- **Regulatory & safety:** Lower VOCs, food-safe inks, and region-specific regulations necessitate unique formulations.
- **Color & effect innovation:** Metallics, fluorescents, textures, and special finishes require novel chemistry that maintains compatibility with their mechanical counterparts.

Print quality, durability, color, environmental factors, machine compatibility, and extended longevity are all factors that can be addressed through custom development to improve final print outputs and machine performance.

Inside a custom ink development project

The custom ink development process will begin by identifying and establishing development parameters with a suitable manufacturer who has a verifiable track record of taking custom ink projects from concept to market. These early discussions are critical not only to the success of the project but also in defining the longer-term tenets of the relationship between supplier and vendor. For example, all parties must be clear on who retains rights to the technology and define those rights very clearly. Often, if the manufacturer retains rights to the final product, the development costs can be much lower. On the flip side, the costs will typically be higher if the customer desires exclusivity to the final product and, perhaps, a subset of variants that sit within a certain set of parameters. Depending upon the level of complexity of the project, this can become a subject that requires substantial legal agreement and documentation.

Once the proper legal, financial, and



intellectual property protections are in place, the work of developing a new ink can begin — and that all starts with fact-finding. This is typically defined in great detail through collective documentation and can include, among other information:

- A detailed description of the final application for the ink.
- Specific desired characteristics such as color, viscosity, distribution, and/or adhesive properties.
- Technical specifications of the delivery mechanism.
- Environmental storage and operating considerations.

Defining these parameters at project inception will ensure that all parties agree upon the desired outcomes and have defined the measures that will ultimately lead to a successful product acceptance and project closure.

A custom ink development project can take anywhere from a couple of weeks to six months or more, depending on the complexity of the application and if any of the groundwork has been laid with prior formulations. Modifying an existing base product to achieve a different viscosity, adhesive, or color property is one thing. Starting from scratch with a novel application is another.

The testing and approval methodology will vary greatly on the scope of the project and the equipment involved. One way to shorten the length of the project, if feasible for both parties, is to provide the ink manufacturer with the actual equipment for testing. This will reduce the back-and-forth of sending samples as the project develops. When this step is not possible, the manufacturer may opt to send a representative to the customer site, at least during the initial test phases, to observe the performance of the ink in person.

Multiple revisions of the formulation may be necessary to achieve the defined goals, but once the ink performs to customer specifications, the customer can begin the process of moving toward commercialization of their new ink technology.

The next wave of innovation in custom ink development

As with most technologies today, artificial intelligence (AI) may soon play a role in the custom ink development process. Applications of AI in this space could range from AI-driven formulation tools to predictive analysis that will allow formulators to model adhesive, curing, or durability behaviors on new substrates. This could drastically shorten development cycles, reduce waste, and generally produce better products faster.

Specialty applications such as conductive and functional inks for electronics or smart packaging, and perhaps nanoparticle development with metallic components, are other possible applications that will require substantive development but could become game-changers.

The future of custom development in the ink space is certainly exciting, and in today's diverse, high-demand and ever-evolving print engines, ink chemistry has become a major differentiator for many businesses. The need for continuous development and pushing the bounds of ink chemistry is necessary not only in keeping up with emerging printer technologies but also in leading the way toward the latest developments in print.

Wherever there exists an opportunity to provide a novel application or a substantive improvement to existing technology, custom chemistry will be central to those developments.

How can a custom chemistry project potentially help your business?

- Are you developing a new hardware mechanism and looking for a compatible ink designed specifically for your hardware?
- Having difficulty printing on unusual or difficult substrates?
- Do you experience adhesion or durability issues?
- Are you looking to offer special effects or finishes that are unique to your brand?
- Do you need to meet specific regulatory or safety requirements?

If you answered yes to any of these, it may be time to talk to your supplier about designing specific inks tailored to your needs. **GP**



Lon Riley is an engineer and printing industry veteran, and the founder and CEO of DPI Laboratory, a digital print innovation company headquartered in St. Petersburg, Florida. DPI Laboratory develops UV printing systems, inks, specialty coatings, and workflow consulting solutions.



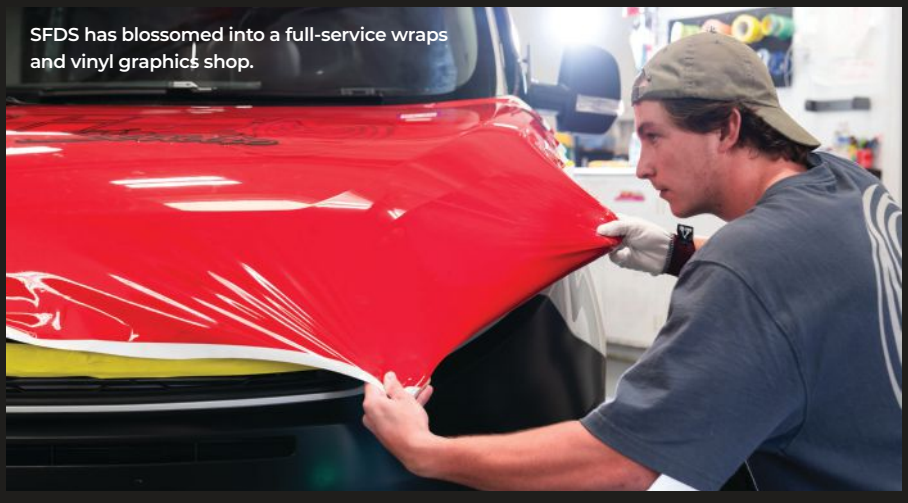
John "Sticky" Meehan, founder of Sticky Fingers Design Studio in Huntington Beach, California, shares his story of perseverance in a six-minute video produced by 3M. (Photos courtesy of 3M)

'Sticky' shares life & wraps lessons in video

By Jef White

Calling himself the "luckiest unlucky guy I know," John "Sticky" Meehan, founder of Sticky Fingers Design Studio (SFDS) in Huntington Beach, California, has used a mix of passion, patience, and perseverance to build a successful wraps and graphics company.

Having overcome cancer three times by the age of 50 and the sudden passing of his father, Meehan knows a thing or two about daunting challenges and facing adversity. Yet, his lows have been balanced by plenty of exciting opportunities over the years, including a chance to do paint work for John Force and Mickey Thompson, spending three-and-a-half years with a Toyota INDYCAR team and, ultimately, blending his artistic abilities and dogged determination to keep SFDS going as it blossomed into a full-service wraps and vinyl graphics shop.



SFDS has blossomed into a full-service wraps and vinyl graphics shop.

Having also met his wife along the way, who's now also become his business partner, Meehan remains optimistic and grateful — so much so that he's telling his story in a 6-minute video hosted by film supplier 3M titled "Born to Defy Expectations." In it, Meehan shares not only his business ideas but also his positive outlook on life.

"Sticky walks us through how the numerous opportunities he had to explore his passion for racing and customization propagated through partnerships with some of professional racing's finest teed him up for a lifelong career with wraps," 3M officials stated in an email introducing the video.



"Though he also faced many challenges throughout his career that would have made most others quit, he never let the passing of family members or serious health issues stop him. Time and time again he pulled himself up by the bootstraps, reinvented himself, and started up his shop again. We are proud that he has chosen to stick with 3M no matter what."

Through it all, Meehan explains that failure was never an option.

"I was definitely driven more by the idea that the naysayers would be right. That 'quitting is for quitters.' I would be a fool not to ride this wave all the way to shore," he said in the video. "The best I can say is that everyone in life is dealt a hand and you have to play your hand. To not play your hand is to quit before you even start."

He's thankful for the help and support he's received along the way, including his longtime association with 3M.

"Any time you want to succeed, you have to surround yourself with good people and good partnerships," he said. "While I'm trying to push the limits of film in colors and texture and all kinds of different things for my clients, I can count on 3M doing their job and making a better film for me to work with. I couldn't ask for more."

With his son now also showing interest in the craft, Meehan notes his new dream is to "maybe have Sticky Fingers Design live beyond me."

Regardless of what happens, however, he's always looking to tomorrow.

"What's not exciting about the future? Everything is exciting about the future," he said. "There's a new generation of wrappers that I get to teach, that other people get to teach — boy, is it exciting times." **GP**



The shop tries to push the limits of film color and texture for its clients.



Scan this code to watch full video.



Jef White is editor-in-chief of THE SHOP magazine.

Why being a profit-driven sign shop is better for business

By David Lamb

A sign shop bringing in $1 million or more in sales is a big success — unless most of that revenue is going right back out the door to cover expenses. Keep that up, and it won't be long before your million-dollar shop goes bust. Profit must come first if you want to create long-term success, and the benefits go far beyond being able to keep more of the cash you collect.

Too many business owners see profit as something that comes after they pay everything and everyone else. But it's what makes everything else possible: growth, creativity, quality, and customer service.

Being profit-driven means being strategic, sustainable, and focused on building a sign shop that lasts. Here's why it's one of the smartest moves you can make as a sign shop owner, and how to make it happen:

Benefits of going for profit

Besides giving you a financial cushion for slow seasons, the profit you build intentionally means you can grow your business in several ways:

- **Investing in better resources:** New printers, routers, or software aren't cheap, but they can make you faster, more efficient, and more competitive. Using the latest equipment also enables you to attract top-notch installers, designers, and production staff with better pay, benefits, and bonuses, not to mention the chance to work at a high-functioning shop.
- **Taking on bigger, better jobs:** Larger projects often mean longer timelines, upfront materials costs, and tighter quality controls. The profit you've built gives you the team and equipment to accept those jobs confidently, without stressing about cash flow or staffing issues. And you no longer have to take every minor job that comes along just to get the cash.
- **Focusing on the right customers:** Not every job is worth taking. A profit mindset helps you identify your most valuable clients: those who appreciate your work, pay on time, and bring repeat business. That means less chasing, fewer headaches, and more consistent revenue.
- **Making smarter decisions:** Profit-focused shops know their margins, which leads to better pricing, tighter estimates, and more thoughtful decisions about what services to offer — or stop offering. You'll spend more time on what pays off and less on what doesn't.







Images courtesy of Signarama Ontario

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Getting to profit

Once you're focused on profit, you start paying more attention to the financial and nonfinancial factors that affect it, including booking percentages, the number of quote requests and booked orders received, and, of course, price increases from vendors.

Look at the productivity of your production and installation crews. To ensure projects run efficiently through the shop, closely monitor their turnaround times and whether they require prompt customer approvals. Does your shop look its best? Make your lobby and storefront inviting to customers, which will help you stand out from other sign companies.

Vendor pricing plays a significant role in profitability. You should have a tracking system to monitor the cost of all standard materials. The system we use enables us to quickly adjust our pricing when vendors raise theirs. We can also keep up more easily with inflation, and the system makes it easier to handle all the tariff talk.

Your system should also enable cost-tracking to determine where certain percentages should be allocated. It should track COGS percentages for in-house and outsourced projects, as well as where your general overhead percentages are based on revenue. Review the numbers monthly to make sure your COGS and other numbers are within those optimal ranges.

Tips for raising net profit

We try not to have slow seasons, but they inevitably arise. When faced with a downturn, double your marketing efforts through increased community involvement and targeted outreach to specific business sectors. Remember the importance of local in-person marketing through efforts like placing decals on doors, handing out brochures, and networking at chamber of commerce meetings.

Other tips for profitably include:

- Raising prices frequently, especially if you continue to hear about vendor price increases and inflation.
- Controlling expenses as much as possible: below 25% of revenue, with wages about 30% of revenue. Keep staffing levels lean and efficient to maximize productivity, with wages about 30% of revenue.
- Watching your COGS: Keep inside COGS at 14-18%, and outside COGS as much below 40% as possible.
- Pulling out profits each month and depositing them in a savings account can help you grow your cash for investment. Short-term CDs are another option when interest rates are better.

Boring is good

I like the way Roger Robinson, Signarama's franchisee profit and financial coach, puts it: You want to run a boring (in the low-stress, stable, predictable sense of the word), profitable sign company. His "scoreboard" system of staying within proven percentages and selling for value, rather than trying to compete on price, has changed the way we run our sign shop. Cash flow has improved, and it has helped us get our P&Ls on a better track to manage those numbers monthly.

Your differentiator should never be that you're a low-price sign company. Instead, you should sell value, be quick with quotes, respond to customers in a timely fashion, and have an efficient turnaround time. Be a top-notch "custom" sign company with excellent service and charge accordingly, and you'll soon be running a profit-driven shop. **GP**





David Lamb is the owner of Signarama Ontario in California, a family business he has been a part of since 2011. He's held positions in sales, production, and installation before taking on an executive and ownership role. A veteran of the Marine Corps, Lamb brings deep expertise in sales, community engagement, and marketing/branding, with a strong background in project management and internal operations.

Selling corporate promotional products

What's top of mind for corporate clients in 2025

By Sal Calautti



Images courtesy of Fully Promoted

Corporate buyers are under more pressure than ever, but promotional products remain one of their most effective tools — if we can help them use them strategically.

For those of us working with corporate clients — especially those in the more traditional 9-to-5 office setting — the past few years have been nothing short of a balancing act. Between hybrid workforces, rising expectations for employee engagement, and now the added layer of economic uncertainty and looming tariff changes, companies are under pressure to do more with less.

Yet, despite the turbulence, branded and promotional products remain a powerful tool for building culture, reinforcing brand identity, and connecting with employees and customers. The key for us as consultants is understanding what's keeping our clients up at night and helping them see how branded solutions can be part of the answer, not just another line item on the budget.

Here's what's currently top of mind for corporate buyers and how we can help meet their needs.

Retaining & engaging employees

Disengagement remains a costly challenge for employers; promotional products are a proven driver of employee engagement. Corporate clients are leaning heavily on branded









products to reward, recognize, and reengage teams. According to the Society for Human Resource Management, recognition programs that incorporate tangible rewards can improve engagement and reduce turnover by as much as 31%.

Branded items are especially popular for businesses with hybrid or remote teams, which require an extra effort to make these employees feel connected to the company culture. Small items like branded tumblers, polos, or desktop gadgets can help employees feel part of the team, whether they're working at the next desk or in the next country. The shift is toward quality, not quantity; fewer, more meaningful pieces that feel like a true "Thank you," not cheap swag destined for the drawer.

Bridging the hybrid divide

Speaking of hybrid and remote teams, the fact is that many offices aren't back to pre-2020 capacity, and most don't plan to be. Companies need products that bridge the gap between remote and in-office employees, such as home office essentials, tech accessories (wireless chargers, earbuds, Bluetooth speakers), and other desk-friendly gear that supports productivity. Practicality is king here, and clients are gravitating toward items employees will actually use — utility over novelty.

In this same vein, more companies are bringing teams together through annual meetings, leadership retreats, and milestone celebrations. Branded products are key to creating memorable, cohesive experiences,





serving as both functional event tools and lasting mementos.

Brand consistency & visibility

As brands grow more design-conscious, clients expect high-quality, cohesive branding across all promotional items. This means consistent colors, precise logo applications, and products that align with the broader marketing aesthetic. Companies don't just want their logo on something — they want their brand reflected in every touchpoint.

Companies seeking to attract clients or customers want items that will be used. They're looking for products that are designed for both convenience and visual appeal, avoiding waste while maximizing impressions.

One of the most reliable and enjoyable forms of brand visibility is holiday gifting, a category that remains strong and is likely to remain so. Clients, customers, and employees expect to receive recognition of their value at this time of year. And smart businesses don't limit "holiday" gifting to end-of-year celebrations. How about a Happy New Fiscal Year gift in July or October?



The more thoughtful the gift, the higher the value you're declaring, and the more likely the recipient is to use it or display it prominently. It won't be just the logo that causes them to remember you fondly.

Companies are still sending curated gift boxes and other traditional items, but more of them are moving toward one-off, high-impact gifts, such as customized insulated mugs or wearables.

Sustainability & ESG alignment

Corporate responsibility is more than a buzzword; many clients are now required to show progress toward ESG goals. This is driving demand for eco-friendly, ethically sourced promotional products, particularly among younger demographics. About 12% of promotional product sales, some $3 billion, originated from the sustainability segment in 2023, according to Promotional Products Association International. The number reflects the overall trend toward eco-friendly purchasing; Capital One Shopping reported that eco-friendly shopping represents an estimated 19.4% of American retail spending as of this year, and if trends continue, 23% of spending will be eco-friendly in 2032.

The sustainability movement is now powered by evolving regulations around labeling and chemical safety, which are pushing suppliers to upgrade compliance and documentation processes. Be prepared to provide buyers with your products' life cycle data, supply chain transparency, and material traceability. Recycled materials, minimal packaging, and carbon-neutral shipping are becoming key selling points.

Navigating budget pressures & proving ROI

More than ever, corporate buyers must justify their spending to leadership. They want to understand how promotional programs build loyalty and engagement, support recruiting and retention, and generate brand impressions beyond the office.

When you consider this with the proposed tariffs on imported goods creating uncertainty around pricing and availability, we as consultants have the opportunity to really stand out by proactively recommending alternatives and connecting dots — like tracking usage, incorporating feedback, and even tying products to measurable outcomes.

The consultant's role in 2025

In today's climate, our job goes far beyond product sourcing. Corporate clients don't want a transactional vendor; they want a partner who anticipates challenges, offers strategic guidance, and simplifies execution. By staying attuned to their evolving priorities, we can position promotional products as a strategic tool for culture and connection, rather than a discretionary expense.

For those of us in the industry, that means staying agile, educating our clients, and delivering solutions that not only meet their needs but elevate their brand in the process. **GP**



Sal Calautti is the owner of Fully Promoted of Southern New Hampshire. He has over three decades of management experience across an array of industries and serves on the boards of various regional groups and industry associations.

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The many surfaces of sandcarving

Learn the history of photoresist films & which ones to use on what surfaces

By Liz Haas

Images courtesy of Rayzist Photomask

Photoresist film was created in the early 1980s by the founder of Rayzist Photomask, Ray Zukowski. Zukowski was using vinyl to etch wood signs, and the weeding was time-consuming. The designs were limited. He felt there had to be a film without weeding. He was a photographer and an entrepreneur, among other things, so with an idea and determination, he created a photoresist film. Rayzist Photomask was formed to seek out etching facilities that needed to maximize efficiency. At that time, etching facilities were using a tissue-style mask. A photoresist film would etch glass and crystal easily with depth.

Photoresist was being used at crystal companies all over the world, and it changed the etching process. Sandcarving detailed designs on glass became easier and faster. The photoresist film was produced thicker to become more sand resistant. The 6mil and 9mil were born. Detailed images, unlimited lettering, and emblems were now etched on memorial stones.





After continued success using photoresist film on crystal and stone, we began to push the limits to other surfaces such as wood, art glass, bricks, metal, and even acrylic. In the late 1990s, Lazermask film was created to accommodate laser engravers wanting depth in glass and stone. It was simple: apply the Lazermask to the substrate, laser the image, and sandcarve. To make the process easier, a self-adhesive film was produced. Self-stick photoresist film was created for polished substrates in the early 2000s. With both films, you could etch any hard substrate.







Surfaces you can sandcarve

Today, sandcarving is one of the most versatile engraving methods. It allows for detailed etching across a wide range of substrates and irregular shapes. While glass and crystal are known for their stunning results when sandcarved, they are not the only materials that can be etched. Stone, metal, wood, and brick pavers are all surfaces that can be engraved by sandcarving. Photoresist offers an easy color-fill option.

Although the basic sandcarving process remains consistent, the photoresist film and the application may differ. Depending on your substrate, select the best film for etching: nonadhesive, self-stick, or Lazermask film.

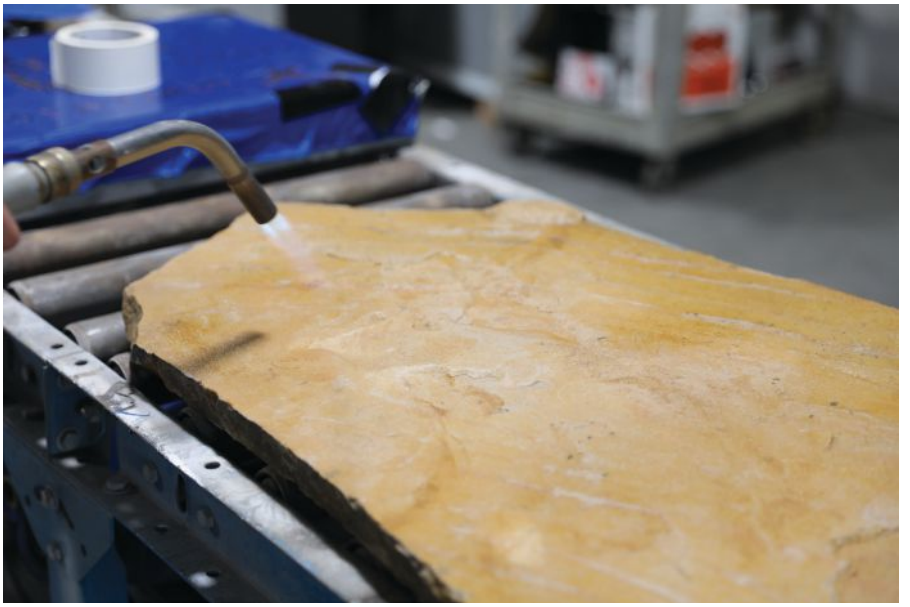
For crystal and glass, sandcarving provides exceptional engraving quality













and can produce either a light frost or a deep etch, or a multistage carve. Because these materials have a smooth, polished surface, self-stick photoresist film is recommended. This film will adhere with pressure (squeegee), allowing for easier repositioning and eliminating the need to blast through a layer of adhesive, not to mention being easy to clean up. Design artwork for light frost or shading of glass to create a creative image.

Photoresist films vary in both thickness (mil) and adhesive strength. The film's thickness should be selected based on the desired etch depth and the level of detail in the artwork. For example:

- **3mil** is ideal for detailed artwork, thin lines, half-tone images, or small text.
- **4mil** is designed for detailed images that require moderate depth.
- **5mil or higher** is suited for bolder designs for depth and optional increased blasting pressure.

Glass

Self-stick films are best for polished surfaces such as glass and crystal, and for light surface etching on granite. The repositionable capability is ideal for alignment, realignment, and flexibility. For curved surfaces, remove the clear liner and then apply the photomask stencil.

Glass application steps:

1. Clean the surface.
2. Apply a self-stick photomask.
3. With pressure, squeegee the mask and remove the clear liner.
4. Roll a wire wheel brush over the film to release trapped air.
5. Tape off exposed areas.
6. Sandcarve to the desired depth.
7. Optional color fill.
8. Remove the mask and clean.





Stone

For natural, unpolished stone surfaces, use a photoresist film combined with brush-on or spray-on adhesive. Thicker mil films, such as 6mil or 9mil, are recommended for blasting hard substrates and higher pressure. On porous surfaces like concrete or bricks, add additional layers of adhesive for an aggressive bond. Add a color fill to create a contrast of the design.

Using a 6mil or 9mil photoresist film or a monument laser mask allows you to blast at higher pressure. Stone density varies; some etch very quickly while others are dense and take time to gain depth. In this case, increase the blasting pressure as you feel





comfortable to etch faster.

Important tips for stone etching:

- Heat the stone with a mini torch or heat gun before applying the stencil. Natural stone contains moisture, and blasting will draw the moisture to the surface. Heating helps remove this moisture for a better bond. Applying heat is a must for etching stone. Heat until the stone is hot to the touch.
- Use a stone brush (nylon and brass bristles) to press the mask into dips or ridges. This prevents air from lifting the mask during blasting.
- Always blast at a 90-degree angle to maintain consistent pressure.
- The blasting pressure range is from 40 to 65psi for 6mil and 45-70psi for 9mil.

Wood

Wood surfaces reveal beautiful grain patterns when sandcarved and are ideal for color fill. Use nonadhesive film with adhesive in 5mil for fine details or 6mil for bold designs. Sandcarving wood lends to either one color or multiple color fills for a creative appearance.

Wood application steps:

1. Clean the surface.
2. Apply nonadhesive photoresist film with adhesive.
3. Squeegee and remove the clear liner.
4. Sandcarve at 40 psi for 5mil or 40–50 psi for 6mil.
5. Apply color fill for contrast.
6. Once dry, remove the mask.

Metal

Metal can be sandcarved, but no depth can be achieved by only removing the polish or powder coating surface. Use nonadhesive film with adhesive to avoid residue left by self-stick films. Self-stick films will leave a residue on metal surfaces. For coated metal tumblers, use 5mil or 6mil film to allow for higher blasting pressure, helping to speed up etching. A double etch technique can also be used on coated metals to create a unique design. Decorate metal surfaces with one or more colors of paint.

Closing thoughts

Photoresist film is used all over the world to create beautiful designs. It is easy to etch a “Congratulations” for a new couple in a champagne bottle or a “Happy Birthday” in a wine glass, and even a pet memorial with photoresist film. Whether you are creative or keeping it simple, it can all be done with sandcarving and photoresist film. Happy engraving! **GP**



Liz Haas has been a teacher, trainer, and show coordinator for Rayzist Photomask for the past 15 years. For the past 10 years, she has actively taught workshops on the photoresist and the sand-carving process.



Image courtesy of JDS Industries

How to engrave drinkware

What you need to know when engraving powder-coated stainless steel, anodized aluminum & ceramic drinkware

By John Morman



Image courtesy of JDS Industries

Drinkware includes all sorts of products made from all sorts of materials using several processes. To even cover everything that can be done on a laser would take up several pages, so for this piece, I'm going to discuss three drinkware products: powder-coated stainless steel, anodized aluminum, and ceramics.

Powder-coated stainless steel

In a previous life as a manufacturing engineer, I worked with powder coating extensively. There are two main finishes used: "smooth" and "hammered." Please note that "smooth" is not exactly smooth. The application of the powder,



Images courtesy of John Morman



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Daniel Mondragon
Director of Operations
Radian Laser

Daniel Mondragon is the Director of Operations at Radian Laser, where he oversees day-to-day operations across engineering, production, service, and customer support. With a strong technical background, Daniel plays a critical role in system development, resolving complex service issues, and ensuring that both internal teams and clients are aligned for success. His leadership has been essential to Radian's growth and continued innovation.

Craig Trivelpiece
Lead Architect - API Platform
Radian Laser

Craig Trivelpiece is the lead architect of Radian's Laser API platform. He has built the system from the ground up, focusing on flexibility, scalability, and seamless integration with client workflows. Craig's work has been instrumental in enabling automation, improving throughput, and ensuring that the API adapts to the evolving needs of high-volume production environments.

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which for a "smooth" finish uses a fairly fine powder, does result in a very finely textured finish. A "hammered" finish is the result of a coarser powder, which results in a "pebbled" finish. This is only important because your engraving settings may need to be adjusted to achieve the best results. Don't be afraid to run multiple passes — just be careful because the powder coat can burn.

So, preparation: I always wipe the piece down with alcohol — ensuring your piece is clean never hurts! Create your template as you would for any other material, and make sure the piece is secured very firmly in the rotary adaptor, assuming, of course, you are working with a travel mug or any other cylindrical piece. Focus the laser head as usual.

A quick note about your graphic: If it includes very fine details, it's probably best to advise your customer to use a smooth finish as opposed to hammered. The nature of powder coat does mean that a hammered finish can make it hard to achieve fine details and might even come out looking a little "smudged." Different powder coaters may use different spray rates because of their equipment. Don't be afraid to adjust settings.

If you want to try powder coating yourself, you can buy powder. I believe the best use of this is to stick to numbering or lettering. If you're working with a flat surface, you can work with graphics, but be careful with how you place the powder. On large pieces or cylindrical pieces, the powder is applied electrostatically. Off-the-shelf powder is applied manually, so consistency is crucial.



Anodized aluminum

Here are some reasons why anodized aluminum is an ideal metal to engrave:

1. Anodized aluminum doesn't rust and resists abrasion, making engraving anodized aluminum one of the best materials for laser projects.
2. The anodized layer has already reacted with oxygen, protecting the metal from further oxidation. Further, the anodized veneer is extremely tough and resists scratches much better than bare aluminum.
3. It's great for engraving because it comes in many colors, as well as its accessibility — even diode lasers can engrave anodized aluminum and create high-contrast engravings, though you'll still get the best results from more powerful lasers.





Image courtesy of John Morman

Anodizing can be offered in two different ways: simple anodizing and hard anodizing. Hard anodizing "grows" a thicker, harder surface. Many products are hard anodized because they are going to be used in more rugged applications that need a more wear-resistant surface. As far as we are concerned, as engravers, we will not know whether we are working with hard anodized products or not. I always assume I'm working with hard anodizing to give myself the best chance of getting a clean finish.

The preparation and setup are going to be like any other product. Again, clean the workpiece and secure or place the piece as you would. As I said, I always assume I'm dealing with a hard anodize. I increase the power and/or decrease the speed. Anodizing takes place at the molecular level, so it may not be possible to completely remove the anodizing on your laser, depending on the power and type of laser.

A couple of tips:

- **Tip No. 1:** Use your laser's highest speed that can engrave or mark the material at full power. For CO_2 lasers above 30 watts, it's usually the laser's highest speed. But you may have to use lower speeds for diode lasers.
- **Tip No. 2:** Lower your laser's output power until the laser starts to etch instead of engraving.

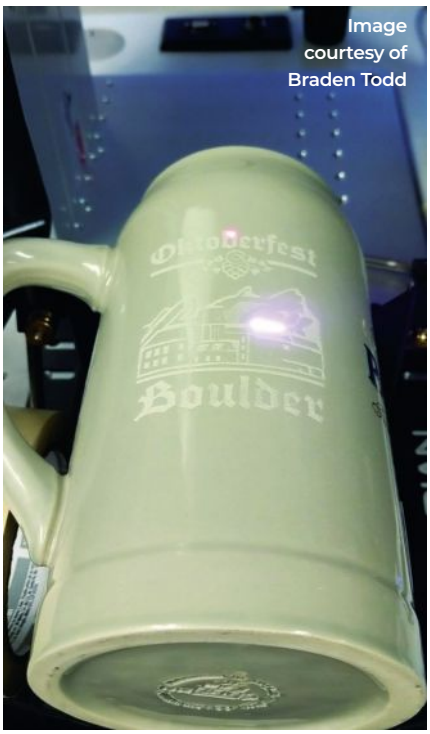


Image courtesy of Braden Todd

The difference between etching and engraving anodized material is that you can't scratch off engraving, but any abrasive treatment can wipe off the etched marks. (Of course, this may damage the anodized finish as well.)

Ceramics

There are several ways to work with ceramics, and there are several products available.

Tiles, cups, and travel mugs, for example, are all capable of being engraved or marked with a laser. Depending on the product, there are certain products that are pre-coated with a material that allows you to engrave your graphic directly without doing anything else special. There are marking compounds available as aerosol, tape, or brush-on. These work very well with ceramics and require little in the way of preparation.

Clean the piece and apply the compound. Try not to use more than you need, primarily because if an application is too thick, you may not achieve consistent marking. Secondly, these materials are not cheap, and you don't want to waste money.

- **Disclaimer No. 1:** I have tried tape, but the results were not good.
- **Disclaimer No. 2:** I have tried the brush-on solution but found it difficult to get consistent results.

To be fair, I opted not to spend a lot of time practicing with either application. I found it easier and less expensive to use spray-on compounds and have carried that practice on.

Simple engraving, such as you would use with glass, can also achieve good results. The engraving process will cut through any surface colorant, revealing the base ceramic underneath. Of course, if the ceramic piece is self-colored, you will get a result, but it may be hard to make out. The marking may also be unsanitary, allowing dirt or airborne contaminants access to the base material. To avoid that, ceramic engraving can be color-filled or sealed. Be careful to wipe off any color fill or sealant before it dries. **GP**



John Morman is the owner of Celtic Tides in Lexington, Virginia. He and his wife, Mary Jo, have been running the shop since 2005. He started laser engraving in 2003.





What's next for DTG?

The evolution of direct-to-garment printing technology

By Stefanie Galeano-Zalutko

Images courtesy of Brother International Corporation

With an insatiable appetite for custom goods and personalization, consumers continue to shape the printing industry at large. Business owners have countless opportunities to drive revenue, but few turn a profit like direct-to-garment (DTG) printing.

Using DTG, decorators combine hallmark qualities like magnificent color, complex designs, and superior prints with the convenience of a print-on-demand, no-minimum-order-quantity business model sold at a premium. Recent innovation within the segment makes it easier than ever for small businesses to capitalize on this big opportunity.

"The reality is we are living in an Amazon world. 'I want one. I want it custom. I want it now,'" said Terry Combs, sales and training at Equipment Zone. "DTG is an excellent primary business, or a perfect addition to an existing decorating business."



Back to basics

Unlike other textile printing methods, DTG combines a proven pretreatment solution and, typically, a water-based ink process to achieve a remarkably durable print on various garments, from T-shirts, hoodies, and sweatshirts to hats, tote bags, and beyond.

"Pretreatment is a liquid solution applied to fabric before DTG printing, especially on dark garments, to improve ink adhesion and print quality. It acts as a primer, preventing white ink from soaking into the fabric and ensuring vibrant, long-lasting prints," explained Mark Bagley, director of marketing at Brother International Corporation.

Once the pretreatment is properly cured, ink is applied directly to the fabric using DTG equipment. While the ink is wet initially, the heat from the second curing process — typically applied using a heat press or a conveyor dryer — causes the water in the ink to evaporate. Eventually, the heat facilitates a chemical reaction that leads to a strong and lasting bond.

Instead of the ink resting on top of a garment like a layer, it physically penetrates the fibers. As a result, industry professionals say DTG offers greater softness and



Image courtesy of Equipment Zone

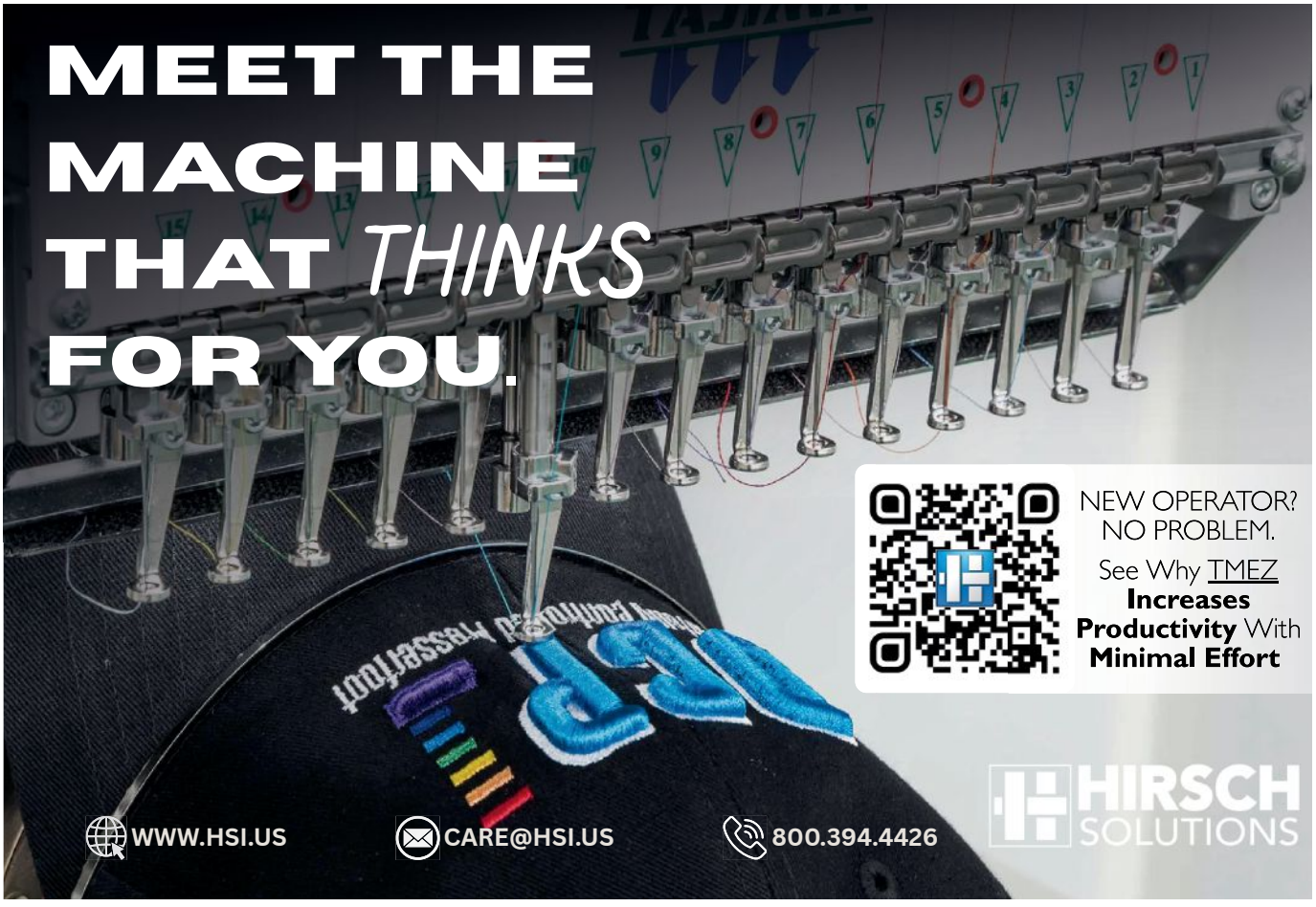
breathability compared to heat transfer vinyl (HTV) or direct-to-film (DTF) printing.

"DTG allows for high-resolution, detailed artwork with fades and gradients to be easily printed. Since it does not make contact with the garment, DTG also offers a faster solution for printing over seams, zippers, and pockets," Bagley added.

The veteran printing method, which is revered for its CMYK full-color capabilities and short-run production with quick turnaround, is an ideal option for natural fibers like linen, hemp, bamboo, and, above all, 100% cotton or cotton-blend fabrics — specifically ring-spun cotton.

According to Combs, the material is manufactured with thinner threads compared to regular cotton, translating to a smoother and easier-to-decorate surface.

While some DTG decorators push





Images courtesy of Brother International Corporation

the boundaries by printing on polyester and 50/50 blends via special techniques and processes, these synthetic fabrics can bleed into a print and cause unintended discoloration or color shifts in the design.

"We're addressing two pain points of DTG printing, which are inconsistent manual pretreatment by hand (or a costly separate pretreatment machine) and printing to only cotton. One of our printers had a built-in pretreatment system that pretreats the print area only, not the whole surface. It also prints on 100% polyester and blends, in addition to 100% cotton for flexibility," said Ayden Tran, digital marketing manager at RICOH DTG.

With the advent of hybrid-format DTG printers, decorators also have the option to use integrated DTF functionality to print on a polyester garment, said Karl Tipre, executive manager at DTG Connection. He credits the technology for expanding the range of printable materials, including 100% dark polyester sans pretreatment.

"This increased versatility is a competitive advantage, as DTG printers are considered 'better DTF printers than most dedicated DTF printers' due to their stability and ease-of-use stemming from over a decade of technological advancements."

Thanks to significant advancements in DTG technology, owners are now able to quickly adapt to consumer demand and scale their businesses accordingly, often by combining multiple printing methods.

For example, a decorator may choose to screenprint an image on the front left pocket, but use DTG technology to highlight 12 full-color sponsorship logos on the back. The printing method also pairs well with embroidery, bringing full-frontal images to life with small but value-added needlework over the print.

"Your primary business doesn't have to be garments [to benefit]," Combs said, presenting a car wrap business, for example. "An add-on sale of T-shirts [featuring] the same wrap graphic is a natural way to boost sales to your existing customers."

Evolve or dissolve

Industry professionals expressed excitement for ongoing improvements within the DTG printing segment, pointing to a bright future filled with creativity and innovation.

"Over the years, we've seen



Image courtesy of Equipment Zone



Image courtesy of DTG Connection

advancements in print head technology, leading to faster print speeds and higher resolutions (up to 1200 X 1200 dpi)," said Tran.

He praised the equipment's quick setup, intuitive software, and lower labor costs in comparison to screen printing.

DTG technology also continues to evolve leaps and bounds in pretreatment and ink chemistry, from improving the suspension of the titanium dioxide in white ink and increasing the color gamut to incorporating more environmentally-friendly options and increasing overall washability and softness.

"White inks, in particular, have improved night and day over the past two decades," Combs said. "No more separating in the bottle overnight. The pigments for white and colors are well suspended in the ink now and only require a slight shake at the beginning of each production day."

"Likewise, pretreats have become much thinner and lightweight on the fabric," he continued.

Bagley pointed to advancements in specialized features which effectively keep white ink in "a ready state," including built-in white ink circulation to ensure it is properly suspended, wet capping systems to reduce print head clogging, as well as an integrated humidifier to help control environmental conditions.

In addition, how pretreatment is applied and cured is an area Bagley sees many shops trying to optimize. From entry-level all the way up to high-end production systems, modern barcode technology allows the defined volume and spray area to be pre-determined. As a result, operators can quickly switch between garments and print sizes.

Tipre said another option is to skip the pretreatment step altogether, as many garment manufacturers now offer a pretreated option for a minimal added cost. In some cases, the convenience eliminates the need to purchase additional pretreating equipment.

"Some print better than others, so test," Combs added, telling decorators not to automatically assume it is a user error if a particular style or color does not print well.

Time-saving options are enticing but can vary in quality. As such, he advises users to test the same image on other garments — perhaps one that was personally pretreated versus another prepurchased pretreatment brand.

Advancements in pretreatment include storage periods as well. Image Armor set out to debunk misinformation associated with diminished garment quality over time by pretreating 12 shirts and printing the same image each month for a year.

"Every shirt looked exactly the same," Combs said. "There may be a limit to how long you can store that pretreated shirt, but [thanks to advancements in pretreatment and ink chemistry], it's certainly not as short of a window as some dealers and manufacturers may tell you."



Image courtesy of RICOH DTG



Images courtesy of Brother International Corporation

Considerations before purchase

Business owners are encouraged to consider numerous factors when customizing their DTG setup, from overall print quality and resolution to speed and versatility. By making the right investment up front, decorators ensure their customer bases are satisfied for years to come.

Mapping out the physical parameters is the first step in laying the groundwork, according to leading DTG suppliers. Since the equipment should not be placed directly next to a heat press, the consensus is a minimum of 6' X 6' space, with 10' X 10' and 10' X 15' cited as preferred.

"DTG printers vary in size. Consider the physical footprint of the printer itself, plus space needed for pretreatment (if external), heat press/dryer, garment loading/unloading, and ink/supply storage," Tran explained.

In addition, proper ventilation and humidity levels are critical due to ink and pretreatment fumes. DTG printers, for example, require an operating environment with 45% or greater humidity to ensure peak performance. Decorators may experience poor ink flow if the printer is in a dry atmosphere or located under an AC unit, so humidifier needs must be taken into account.

Also consider target customers, market demand, and anticipated print volume. Tran said entry-level machines are a sweet spot for hobbyists and low-volume producers working from basements, climate-controlled garages, and even dining rooms, while industrial machines possess the capabilities and bandwidth to handle significant production.

He suggested prioritizing a user-friendly interface, with advanced features that enhance efficiency, such as quick-change platens, automated maintenance, and intuitive software.

"A built-in pretreatment system, for example, revolutionizes workflow by integrating pretreatment directly into the printer. This ensures precise, consistent application only to the print area, eliminating messy external machines, reducing waste, and preventing stains," Tran added.

Aside from key operational features and functionality, the DTG suppliers agree that initial training and ongoing support must be part of the equation.

"Even though these machines are easier than ever to use, there will inevitably be a learning curve," Tipre said. "A good equipment dealer will





have a strong support department that can answer questions about operation, graphics, and equipment maintenance."

In addition, owners should be hyper-aware of unfavorable company or product reviews, substandard technical support, as well as a poor track record in available parts. Other red flags include disappointing white ink performance, an overly complicated, messy, or inconsistent pretreatment process, and unrealistic speed claims.

"White ink is the most challenging," Tran stated. "If demos show inconsistent white ink or frequent clogging, it's a red flag. Have your graphics sent to the manufacturers to see if the results are comparable to what you would like to achieve."

While many DTG printers use proprietary inks for performance and warranty, he said users should be wary of excessively high consumable costs or if third-party inks are explicitly stated to void the warranty without clear legal backing.

"Also, always ask for real-world print times for typical designs on both light and dark garments," he continued.

Making the investment

Once the facts are gathered, it is time to crunch numbers. Aspiring decorators can step into the game with a minimal investment, but there are drawbacks to machines at the entry-level price point, including a smaller print area and slower production.

Tipre said many small businesses fall into a price trap. Owners are lured into purchasing an inexpensive printer, which leads to more frequent operational setbacks like consistent clogging and maintenance challenges.

As such, he encourages entrepreneurs to think more broadly when weighing equipment options, including immediate needs, plus the next layer of growth. Expect a $15,000-$20,000 investment for a DTG/DTF hybrid printer with a large print area and production capabilities that users can grow into over time.

"That's a pretty inexpensive garment production business — and can [conveniently] be set up in a spare room in your home," Combs added.

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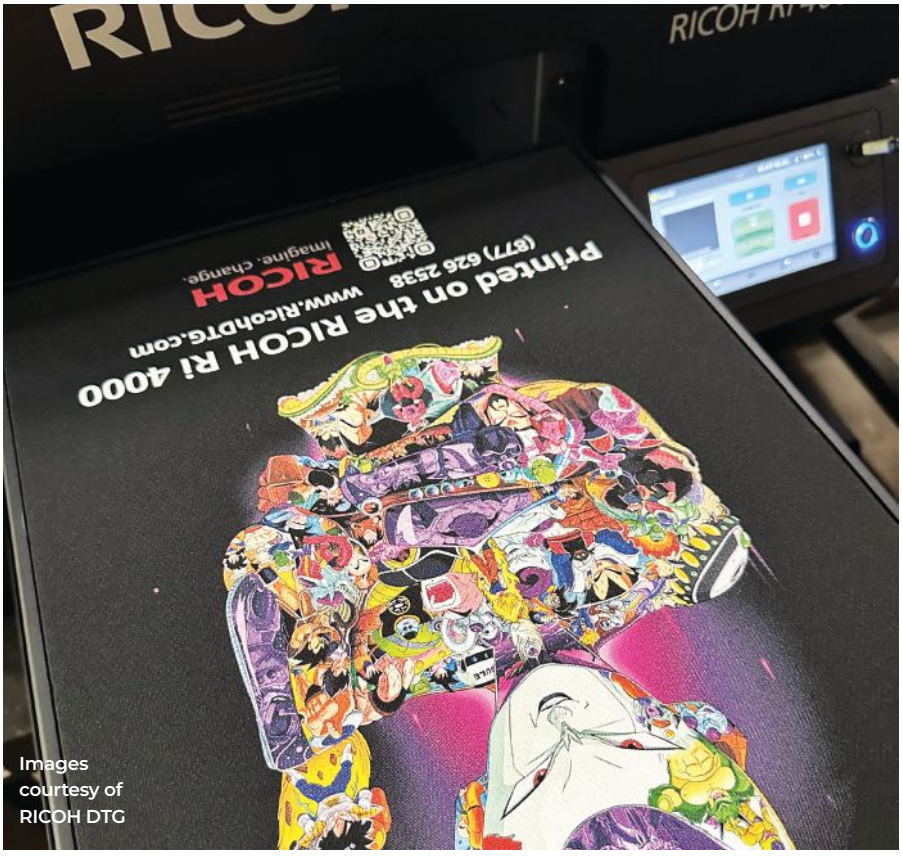
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Images courtesy of RICOH DTG

Regardless of brand and price point, DTG equipment requires general upkeep and routine maintenance like any other technological investment. While every machine varies, expect to clean print heads, wiper blades, and other components, check white ink agitation and flush lines regularly to optimize efficiency and performance.

In addition, deep cleaning and filter replacement should be evaluated on a monthly to quarterly basis, depending on overall usage. The company representatives agree that automated maintenance features significantly reduce manual labor, gifting decorators more time to drive the business forward.

There is a correlation between how well equipment is maintained and its overall lifespan, with the average time frame hovering at 5-10 years. In fact, data shows most fail to hit a decade due to neglect or repair and replacement issues.

"Think of it like a car. You need to replace the maintenance station occasionally and fan filters. Also, the print head carriage life is rated for 20,000 prints," Tipre explained. "Like vehicle tires and brakes, items need to be replaced."

"Plus, new technologies are generally released on the same 5-year cycle," Combs added, giving users a chance to consistently align their capabilities with the industry standard.

Even though a robust DTG setup can morph into a substantial investment, especially for industrial-grade purchases, the return on investment is an attractive business proposition.

"Owners can cater to a wide range of customer needs without large inventory commitments, while yielding high-profit margins on custom, on-demand apparel," Tran said.

Fast-forward

Looking ahead, DTG printing is expected to thrive as a go-to method for high-quality, soft-hand apparel decoration.

"While UV printing is a rising star, it serves a different niche, primarily rigid and non-textile substrates. DTG's direct-to-fabric application and unique hand feel give it a distinct advantage in the garment decoration space," Tran said. "We expect DTG to continue innovating, potentially incorporating more automation and even broader substrate compatibility — solidifying its position in the custom apparel market." **GP**



Stefanie Galeano-Zalutko is the president/CEO of Zalutko Business Services, Inc., a marketing agency based in Central Florida. She can be reached at szalutko@zalutkobusiness.com.



BELLA+CANVAS Washed Collection

The Washed Collection from BELLA+CANVAS is a vintage-inspired line of garment-dyed essentials. Crafted from 100% ring-spun cotton (18 singles, 6.5 oz), these short-sleeve and long-sleeve tees are designed to offer a broken-in feel. With a nostalgic color palette spanning 28 washed hues, no two garments are exactly alike. Designed for creators, retailers, and consumers alike, the Washed Collection is print-ready and designed for screen printers and fashion brands. Available in Unisex Heavyweight Garment Dye Tee (Style 4810GD) and Unisex Heavyweight Garment Dye Long Sleeve Tee (Style 4851GD). **bellacanvas.com**

Roland DG VersaSTUDIO BY-20



Roland DGA has announced new ink and functionality enhancements for the Roland DG VersaSTUDIO BY-20 desktop DTF (direct-to-film) printer, developed to create additional capabilities and potential for users. Engineered exclusively for DTF applications, S-PG2 inks, which replace Roland DG's original S-PG inks, are said to deliver higher image quality, better durability, and greater stability throughout the print process, while new maintenance and software upgrades increase reliability, ease of use, and convenience. The BY-20's new S-PG2 inks offer increased white ink density and improved ink laydown, designed for increased vibrancy and higher opacity with fewer passes. **rolanddga.com**



Helix ONE updates from Inkcups

Inkcups has introduced a number of updates to the Helix ONE entry-level benchtop cylindrical UV direct-to-object printer. The updates, designed to boost efficiency and expand application possibilities, include: Auto File and barcode scanning designed to streamline file management; a new jettable primer developed specifically for the Helix ONE; smaller diameter capability, expanding the overall diameter range from 33mm to 116mm, enabling greater application versatility, with the Helix ONE now compatible with products such as shot glasses, spice jars, and cosmetic bottles in addition to drinkware, candle holders, and plastic bottles. **inkcups.com**



Vantage Apparel patches

Vantage Apparel has introduced the addition of four new patch decoration options to its collection of in-stock headwear. Vantage's new patch decoration styles are designed to give distributors a fresh way to add texture, detail, and bold impact to every cap, available with a 48-piece minimum. New options include woven patches, faux leather, sublimated, and classic embroidered patches. Each patch is heat-applied and finished with either a clean laser-cut edge or a classic merrowed stitch border. The patches are designed to fit on any non-mesh cap, from 5-panel to 6-panel. Patches can be custom-designed in a wide range of intricate shapes and sizes, with a maximum imprint area of 2.5" X 3". **vantageapparel.com**



Supa Neon from Supacolor

Supacolor has announced the launch of SupaNeon, a new hybrid-printed neon heat transfer designed to bring electric vibrancy to custom apparel design. The new product line features four neon colors and, according to the company, represents a significant advancement in water-based ink technology for the custom heat transfer market. SupaNeon features four neon colors — green, yellow, orange, and pink — each formulated to deliver maximum vibrancy while maintaining the high durability and hand feel standards. The water-based ink system is engineered to ensure compatibility with a wide range of garment types. **supacolor.com**



Images courtesy of Lon Winters

Hybrid harmony

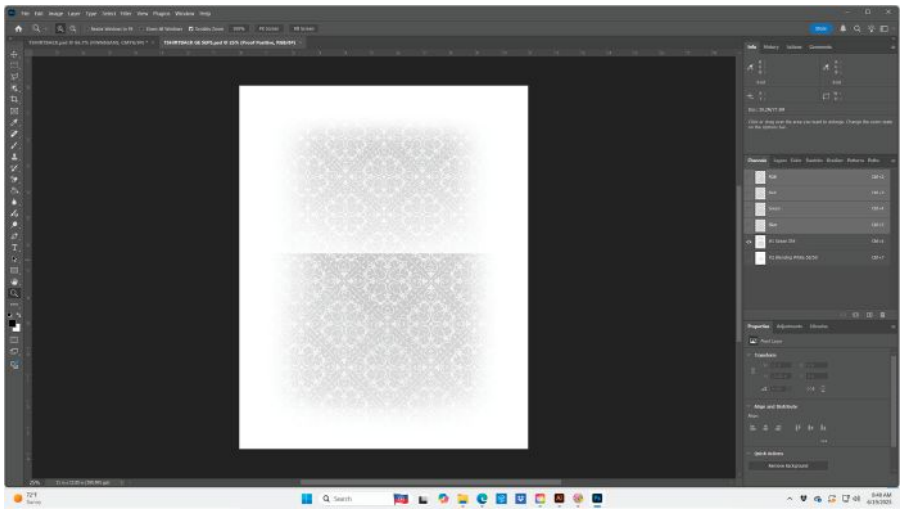
Pairing screen printing and DTF

By Lon Winters

Finnegan's Beer is a Minneapolis-based, small batch brewery with a mission as refreshing as its brews. Founded on the idea of what they call "turning beer into food," Finnegan's donates profits to feeding the hungry. Beyond its social impact, the brewery has built a reputation for crafting delicious beers that reflect the character and creativity of the Midwest. From crisp lagers to bold ales, every Finnegan's pint carries the spirit of giving back, making their brand not only beloved among beer enthusiasts but also respected in the world of philanthropy. Their commitment to community and quality made them an ideal partner for a project of decorated apparel celebrating a quarter century.

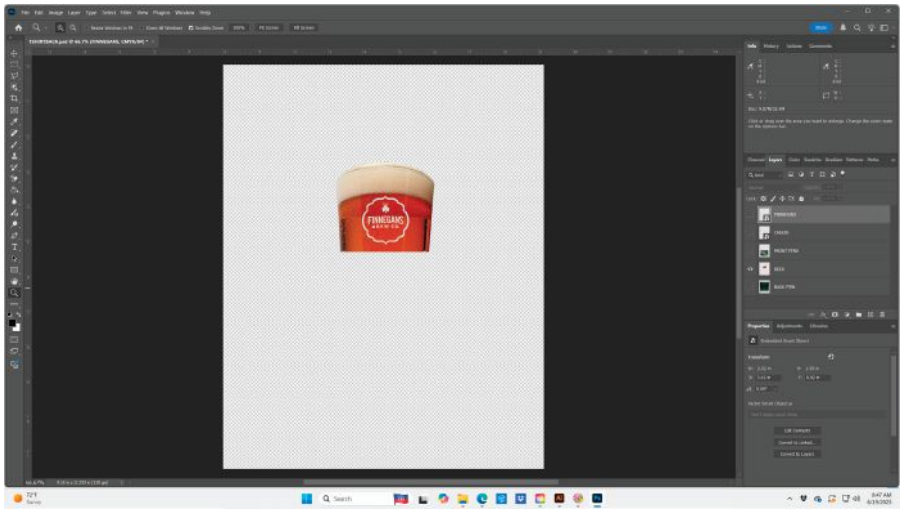
Sometimes the simple jobs often turn out to be the most complicated. Small quantity orders seem like a easy request with today's DTG and DTF technologies. This seemingly straightforward design would require some finesse, however. In reality, this was a bit of a technical challenge that called for some tricks and creativity. Finnegan's wanted to feature a photographic image, a pic of a perfectly poured pint, light refracting off the glass, tiny bubbles chasing their way to the surface in a rich, delicious amber beer. The photograph was somewhat complex, full of transitions and subtle tones. The kind of image that we would normally screen print using a simulated process method. Not this time. The run was under 50 pieces, which meant too many screens and just not practical. The job also had another twist: the background was not part of the photo itself. It was a soft, fading gradient, almost more of a mood than an image along with the brewery's logos and type. This background element needed to blend seamlessly into the shirt fabric itself. Part of the design needed to have the hand, texture, and feel of traditional water-based screen print while the photo could use the precision and clarity of digital output. One image, two processes, it would seem.

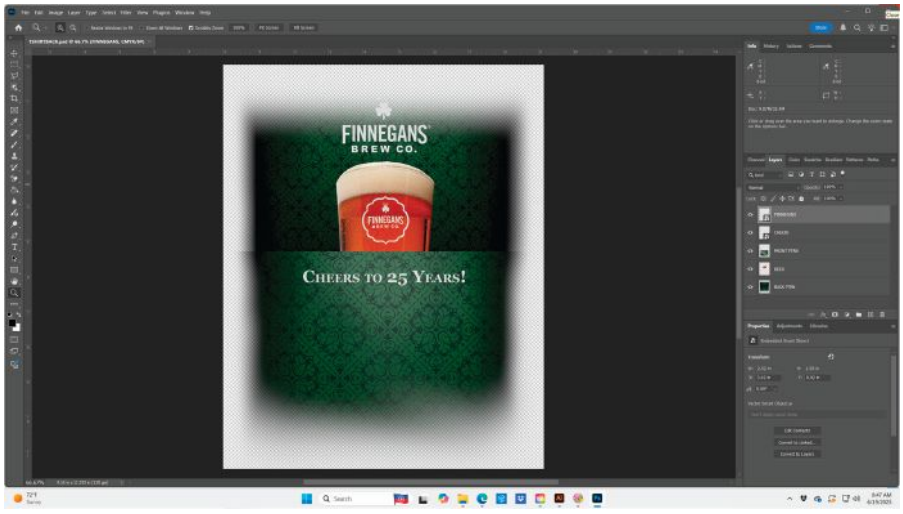
By screen-printing the gradient background first, we could manipulate the ink, opacity, and hand feel, creating the illusion that these elements were dyed into the shirt itself. The hybrid digital transfer of the photographic image would be dropped in later, locking the photo in place without disturbing the subtle feel and flow of the screen print beneath. But doing











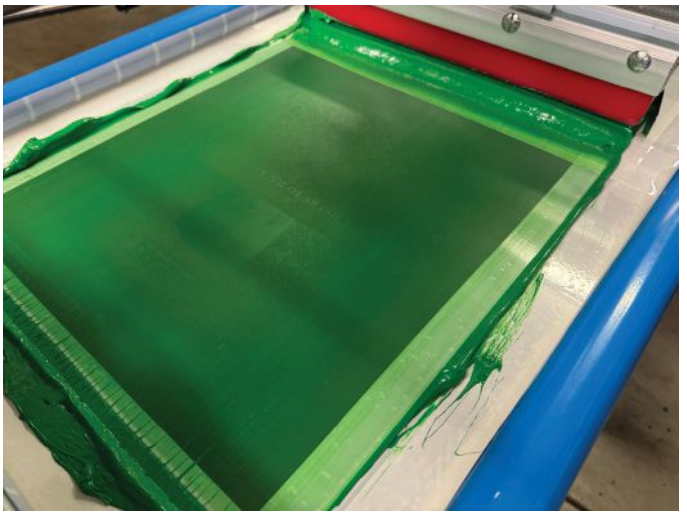
it this way comes with challenges, specifically, registration of the transfer to the screen print.

First, we separated the design into the two distinct components. The screen print layer of the soft background gradient, logos, and supporting type. These would all be printed using water-based inks to ensure a soft hand and subtle blend into the shirt. These elements formed the visual foundation and platform for the photographic transfer. The hybrid digital transfer of a glass with all its crisp imagery, highlights, shadows, full color, and fine detail would be applied via heat press. We knocked out the area in the screen print, allowing the transfer to adhere directly to the garment without interference. The screen-printed background had to seamlessly fit to the photo. Since we were running low solids transparent water-based inks, we spread the screen print portion a couple points under the transfer. We tested this first to make sure the transfer would still stick in these areas.

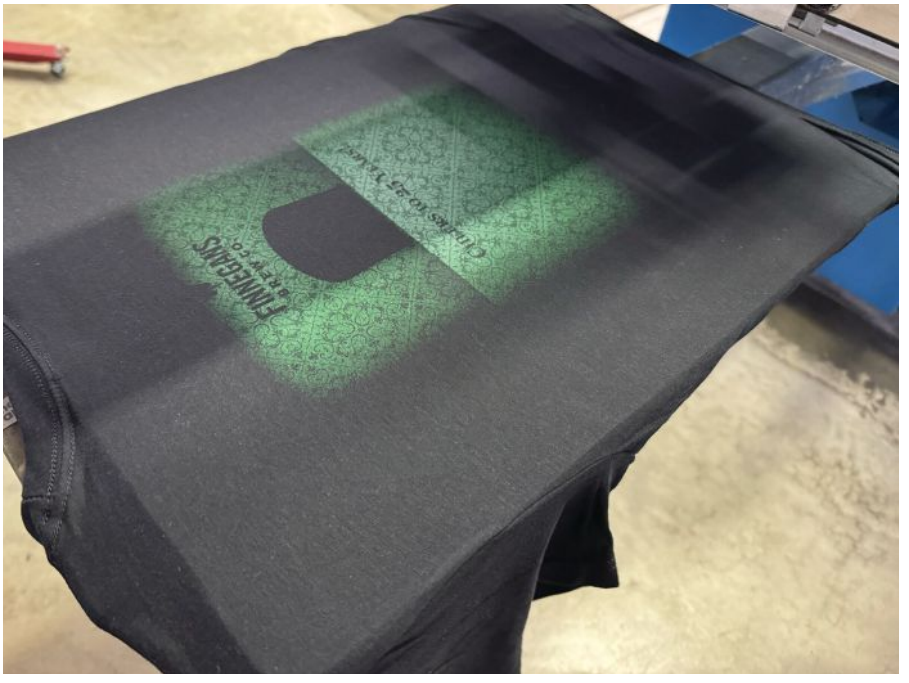
The low solids water-based ink gave us the soft, vintage feel Finnegan's wanted. A high solid acrylic, high-opacity white water base was used for the logos and type. The gradient itself was built using halftones ranging from 5% to 85% and output at 55 LPI on CTS. This frequency was enough to hold detail in the transitions but open enough for the ink to clear cleanly through the mesh. We used 230 tpi mesh screens at 35 N/cm^2 for the gradients and 156 for the white at the same tension minimizing off contact distance.

Because the hybrid digital transfer would arrive as a finished element and unalterable, the screen print beneath had to be precisely registered to accept that transfer without shift. Any distortion would be a problem. Before printing, we projected laser crosshairs onto the pallet to establish the exact location relative to where the transfer would later fall.

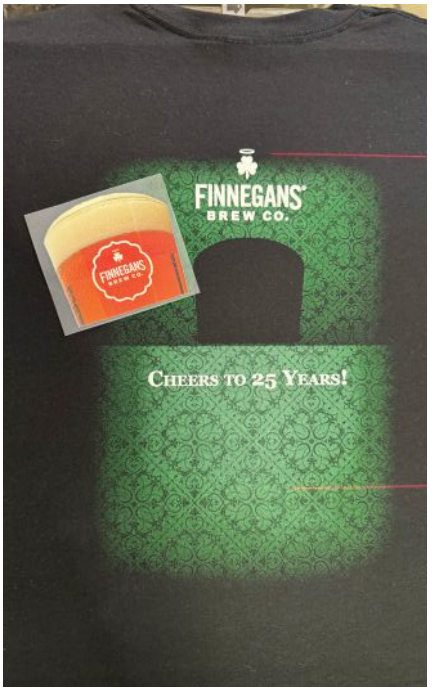
For the hybrid digital transfer application, on a transfer machine we set the heat to 295 degrees and pressed

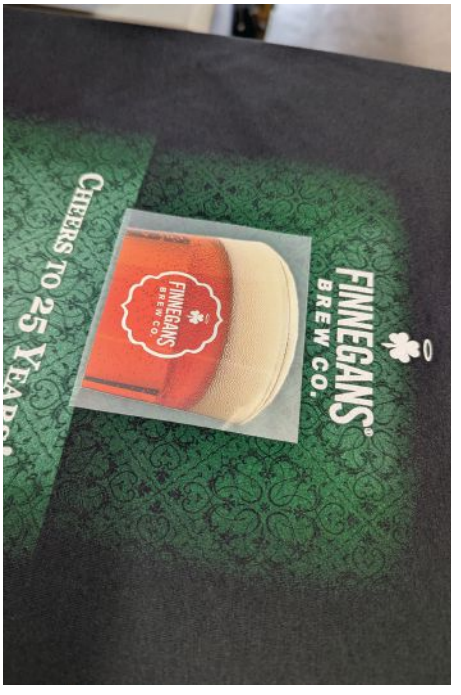






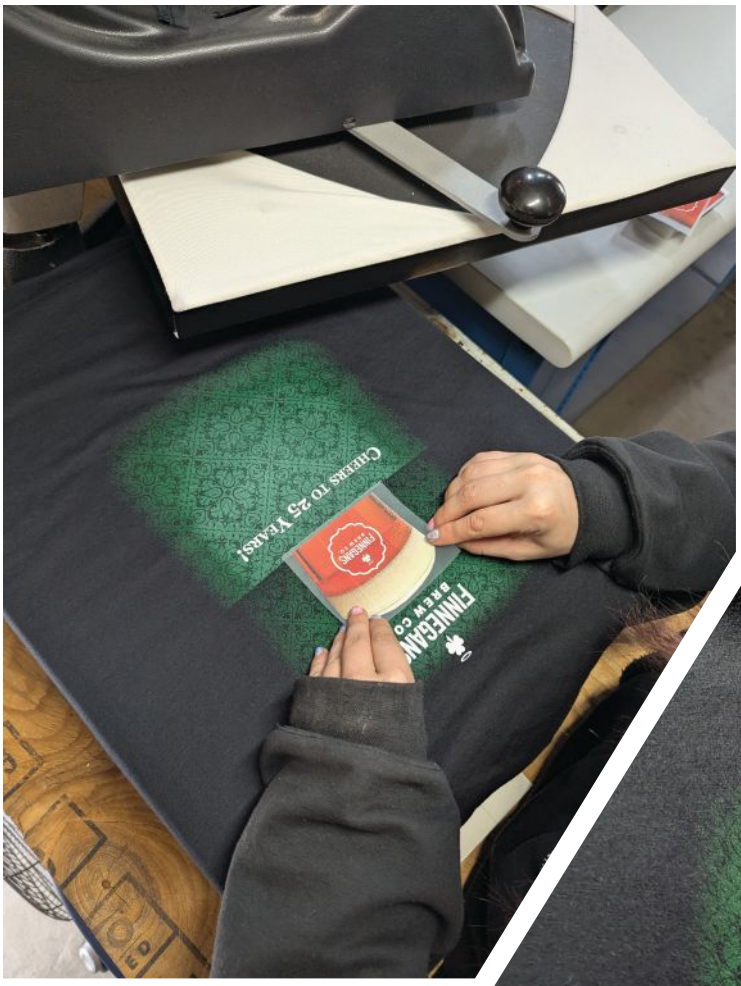






for eleven seconds with 40 pounds of medium pressure. Careful placement of the transfer was the order of the day. The photo dropped perfectly into the negative space left by the screen print, with no gaps. The gradient background wrapped around the edges of the photo like fog behind glass and the brewery logos floated just where they belonged.

When Finnegan's received the final shirts, they were blown away. The depth of the photo was clean, rich and dimensional while contrasting beautifully with the soft background and logo elements. Even after all these years, jobs like this remind us of why the software to substrate journey is still the heart of this craft. Transfer technology is a tool that can work in harmony with traditional techniques, not replace them. We might call this a multimedia application and, when done right, it elevated the product far beyond what screen or digital alone could do. It demanded a bit of discipline, planning, and a willingness to break the rules. We love breaking rules!







For Finnegan's, this small project proved we could deliver a complex solution at low volume without sacrificing hand, detail, or durability. For me, it's another reminder that pushing boundaries, digital and/or analog, is what keeps this industry exciting. Every print from 10 pieces or 10,000 is a balance of technology and creativity. Math and art, baby. When they meet just right, you can taste the result. Like an ice-cold beer on a summer day. **GP**



Lon Winters is founder and president of Colorado-based Graphic Elephants, an apparel decorating studio and international consulting firm. He was inducted into the Academy of Screen and Digital Printing Technologies in 2013 and is widely recognized for his contribution to the graphic printing industry. Learn more at graphicelephants.com.

FAN GEAR FIRST

Why the local market matters

By Adam McCauley



Images courtesy of Sandlot Sports

Friday night. The lights are beaming, and the bleachers are packed. But before the whistle begins the game, there's already a win nearby, not on the field yet, but in the stands. A ruckus community fanbase with matching tees, custom hoodies, glittery eye black, and a sea of school colors louder than the pep band. Honestly, it's a vibe, and it's far more important and meaningful than you may think.

Every good coach will tell you that before you build a championship team, you need to build a championship culture. That starts with fan gear. Not just uniforms or coaches' polos, but stuff made for the fans. Made for the stands. Made for the little brothers and sisters who are indoctrinated into the culture of the older siblings' sports, teams, and clubs.

You can see it from across the parking lot. The waves of school spirit crashing on the front gates of the ticket window. The surrounding restaurants simmer with spirit just before game time. Parents in matching windbreakers lugging seat cushions. Seniors in custom-decorated hoodies with their graduation year or number across the back. A middle schooler rocking a beanie that's three sizes too big but grinning like he's already on varsity.

At the soccer pitch on Saturday morning, it's the same energy. Moms in soft tri-blend pullovers with glitter-flecked team names. Dads clapping in embroidered hats as their kid goes in for a corner kick. Siblings wearing shrunken-down tees from three seasons ago, tugging on sleeves and yelling names they can barely pronounce. It's not just a game, it's an identity, it's the local culture.

Even at the robotics competition across town, it hits. The buzz of machines, the slap of high-fives. A row of parents in coordinated STEM club shirts, one with "Bot Mom" in vinyl glitter and another in a bomber jacket stitched with the team's circuit-board logo. Someone's grandpa wearing a





patched-up team cap from a rookie year when the robot barely moved. Now, the stands are filled, not just with family, but fans, supporters, and culture.

Because the real flex isn't just what happens on the field, or the court, or behind the joystick. It's the feeling of looking around and realizing you're part of something bigger. That the people cheering with you match you. That you're seen. And that it started with something as simple and small as a T-shirt.

Why fan gear actually matters

It might just look like a cool hoodie or a throwback mascot tee, but merch is way more than that. It's how people say, "I belong here." It's how the freshman feels confident walking into a gym or weight room full of upperclassmen. It's how grandma and grandpa cheer at the top of their lungs with their alumni sweatshirt that reminds them of being 16 again and back on the field.

This is what good decorators already know. Every time someone puts on a custom T-shirt, they become a walking, talking member of that brand. Whether it's school apparel or a local credit union, you become the billboard. In schools, that brand is pride, it's belonging, it's acceptance. It's "We before me."

A really great tee isn't just a souvenir, it's a unifier. It's a badge of honor to show the community you support their cause, schools, ideas, and culture. Booster clubs start selling spirit gear in August and begin raising money before fall sports even begin. That money helps fund team meals, band transportation, and new equipment. The answer is less GoFundMe link and more spirit gear. Don't just send money — buy into the culture.

Don't make buying apparel all about cash; it's about the connection. When students, teachers, families, and alumni are all repping the same gear, something starts to shift. The hallways feel different. The energy on game day hits sooner. You start seeing shirts at grocery stores, at the gas station, even on social media. It becomes a badge. A signal. A reason to nod at someone in passing because, even if you don't know them, you know you're both on the same side.

It's also an invitation. Think about the student who's not on a team, not in band, not part of any big group. When they pick out a shirt with a bold school









logo and their favorite color combo? That's their jersey moment. They're choosing to join in. And the best part? No tryouts needed. Decorated fan gear doesn't just fill the stands, it fills the hearts of your community. It gives people a reason to show up, cheer loudly, and post photos with captions like "Home team forever." When decorated merch is done right, it becomes part of the culture. Part of the tradition and part of the story that the school gets to tell for years to come.



One year, we created a "Future Hawks" T-shirt and gave one to every kindergartner in the school district. Their families were invited to a varsity home football game, where the kids, wearing their matching shirts, got to run across the field at halftime. The game sold out. Hundreds of families filled the bleachers, many attending their very first game. The moment was so special, so full of energy and pride, that it became something bigger than just a halftime event.

It sparked a mindset that went beyond sports. It became a celebration of the community. Think about how those families felt. What did those young students think about their new school after a night like that? How did the district make them feel welcomed, included, and proud to be part of something bigger? That night, the school didn't just hand out shirts. They handed out a memory.

Design tips that actually work

If you want to create fan gear that sells faster than concessions at halftime, there are a few key things to keep in mind. First, go big and bold with your design. If your student section is 30 rows deep, the artwork needs to stand out. You'll need to see them across the football field. You want the visiting team to see the design. Think large prints across the front or back that are easy to see from anywhere in the stands. Keep the layout simple and limit the number of print locations to one or two, like a bold chest print and maybe a sleeve detail. This keeps costs down and the design looking clean.

While school colors are the obvious choice for most school-branded apparel, consider mixing in trendy color tones like neon, mint, or glow-in-the-dark for limited-edition drops. They create hype and stand out above the norm. Adding embroidered patches or leather appliques is another easy way to boost the look and value of the gear without breaking the budget. Don't forget about your custom online stores. Most decorators now have a platform to create amazing online stores. Easily create stores that call to the public and are easily shareable online through social media.





From bleachers to Main Street

Here's where it really gets fun: when fan gear goes beyond the field. Parents start wearing that same hoodie to the grocery store, and alumni are still rocking their "Undefeated 2018" tees at the gym. That's when you know it's working. The community starts to feel more connected, and suddenly local businesses are asking how they can sponsor the next run or get involved with the booster club.

Merch tables at games turn into social spots. People hang around, catch up, swap stories, and relive school memories while picking out shirts. You'll hear someone say, "Remember when we beat Freeland by one? Corner three, packed gym, crowd went nuts."

But the best part? It brings everyone together. Schools and towns feel more united. Booster clubs get stronger. Donations pick up. And, most importantly, kids start to feel like their school really matters.

Fan gear first. Always.

If you're a decorator reading this (shoutout to the real MVPs), don't underestimate the power of a well-placed hoodie or a killer tee design. You're not just making merch, you're helping schools build identity, spirit, and connection. When you get to the table, pitch a "fan gear first" plan to your next school client. Don't wait for the team to start winning. Help the community look like winners first.

That's how the culture starts. It spreads from a sixth grader in an oversized crewneck to a grandparent in the front row, from an e-sports gamer in a neon patch hoodie to a robotics mom clapping in a vinyl tee. That's how kids feel accepted and seen. That's how teachers feel proud and committed. That's how donors lean in and support the community.

You're going to make sales. However, you will do more than that, you'll make moments. Moments that turn into momentum. Momentum that builds programs, fills bleachers, funds travel, and makes kids believe they're part of something real. Because when the stands are loud, the scoreboard usually follows.

There's no better flex than looking out at a packed gym, a buzzing sideline, or a student section jumping, chanting, screaming, and vibing, knowing that you helped design that feeling. That's not just a print. That's a legacy. **GP**



Adam McCauley is the co-owner of Sandlot Sports, a custom screen printing, embroidery, and promotional company that specializes in spiritwear, team uniforms, corporate workwear, and event T-shirts.



nordroden – stock.adobe.com

Ready to add embroidery equipment to your shop?

12 things to know

By Jennifer Cox

Let's walk through a full breakdown of how to know when, and if, you are ready to expand your embroidery business by adding more equipment. Once you make the decision to add equipment, there are key concerns to consider as you choose what to add. And then, just to be on safe side, there are signs to watch for that might mean you should wait just a bit longer before expanding.



Photos courtesy of Jennifer Cox

1 **Sales volume:** Are you running behind on your orders often? Do you think you can run your equipment more efficiently to get more production, or do you think you are operating at your full capacity? If you are turning away orders or working overly long hours to keep up, it may be time to grow. If you have slow periods or seasonal dips, it may be in your best interest to stabilize your sales volume before you add equipment.

2 **Deadlines:** Do you have a growing list of orders that are running past their deadlines, assuming you are setting reasonable deadlines? This can be a signal that you are maxed out with the equipment you have.

3 **Repeat customers:** Do you have consistently returning customers? If a percentage of your business is predictable, this steady income from repeat business is a good indicator of your long-term success. It may be a good time to invest in more equipment



4 **Pricing strategy:** Are you making a decent profit with your pricing strategy? If you are confident in your pricing and profits, determining how much of a machine payment you can afford is pretty straightforward. If you do not know your numbers (profit levels in particular) and believe that adding equipment is going to increase your profits, you would be much better served by developing a thorough understanding of your financials before considering adding a machine payment. Otherwise, if you are in a financial hole, you could be digging it deeper rather than filling it in!

5 **Budget & cash flow:** Do you have funds set aside for business growth, or access to affordable financing? Draining your savings or emergency funds may not be the best use of that money. If you have more month left at the end of every month than you have money, that indicates that you are stretching every dollar or relying on debt to cover essentials. An equipment purchase could put your business at risk.

6 **Space:** Do you have space available, or can you carve out the space so that you can add equipment without it crowding so much that it creates inefficiencies? Cramming another machine into an already tight space can create more frustration than additional production capacity.

7 **Production:** Do you have the time to operate and maintain additional equipment? While adding a machine does not double the time to run jobs, it does increase the pace and the workflow. If your equipment is actually sewing less than 25% of the hours you work, adding equipment may overwhelm you. Highly efficient operations run their equipment 50%-60% of every working hour. If you are already feeling overwhelmed running the equipment you have now, adding a machine will not solve the core issue.

8 **Labor:** Are you confident in your ability to operate multiple machines — or do you have someone who can help? If you are a home-based business, will you want to add staff who will then be working in your home? If you are in a retail location, do you have access to people who want to work?

9 **Marketing:** Do you have a marketing plan that brings in new opportunities consistently? If you never know where the next orders are coming from, and are not doing anything to bring them in, it may not be time to add equipment, as that machine could just sit there expensive and idle.

10 **Expanding product mix:** Are you adding equipment to increase your product mix, such as adding a machine that can embroider finished caps, or has a larger sewing field? If you have customers wanting these options, adding the right equipment will increase your sales rapidly. If you do not have a clear business plan or niche, more equipment could lead to overwhelm instead of growth.





11 **Workflow & information management:** Do you have systems in place to keep orders organized? If a customer says, "Just do it again," is that a nightmare for you? Or, is it no big deal because you can access all the necessary details easily? When you scale your business by adding equipment, having systems in place to keep the workflow smooth is essential.

12 **Business vision:** Does scaling your business now align with your business goals, and your personal goals? Growth is hard, and it will have an impact on your entire life. Make sure you are ready to evolve without paying too high a price, such as your mental health, your sleep, and your relationships.

Once you decide that you are ready to add equipment, the next step is to determine what equipment to add. Here are key factors as you consider your options:

Production needs: Do you need speed, size, or specific capabilities, such as a commercial machine, a cap system, or a larger sewing field? Match your equipment selection to the jobs and customers you want to say "yes" to.

Budget: How much of a payment can you afford and what are the hidden costs, such as maintenance, parts, hoops, new software, and thread.

Consistency: If you like the equipment you have, and if they offer machines that will meet your needs, that may be the way to go as the hoops may be interchangeable, the software will be the same so that you can avoid a learning curve, and the support will be the same. On the other hand, if you are not really sold on what





you have currently, you might as well look at all the available options.

☑ **Brand reputation:** Look for brands with a good reputation in the industry. There are user groups for just about every brand of machine online, and there are online communities for embroidery and apparel decoration business owners. These folks are more than happy to tell you if they love their equipment or not. Buying a machine is the beginning of a long-term relationship. Make sure you pick a company that resonates with you and is not just offering the cheapest deal.

☑ **New or used:** If you are buying equipment from a brand that you already own, a used machine may be a good option for you. Be sure to do your due diligence so that you know exactly what you are buying. Consider having your own service technician service and evaluate the machine before you finalize the purchase. If you are buying a brand that is new to you, getting a new machine establishes a relationship with that company so that you have access to their training, support, warranty, and other customer benefits.

☑ **Parts, service & tech support:** Does the company have a good parts supply, tech support or training available online, as well as service techs that will maintain the equipment, or teach you how to do maintenance? Better and faster support keeps your downtime to a minimum.

☑ **Software & updates:** Does the machine come with embroidery design software? Is it software you already know and use? It is upgradeable, is there training available for it, will it operate all your equipment, or only the newest one?

☑ **Resale or upgrade options:** If your business continues to grow, can you sell or trade up the machine to help finance new equipment?

☑ **How many needles?** One of the questions I hear the most frequently is, "How many needles?" Here is the thing — most company logos have less than six colors in them, so even basic multi-needle machines have enough needles to run the majority of your customers' designs without changing out threads. If you plan to create embroidery designs that are more intricate such as animals, florals, and scenes, then a multi-needle machine with as many needles as possible may be more beneficial.

No matter what you decide, keep on keeping on, as the saying goes. You are thinking strategically about your business and making sure that you are running it to the best of your ability. Whether you are hitting your stride and going into a growth phase or staying on track with what you have now, it is an exciting time to be an embroidery and apparel decoration entrepreneur! **GP**



Jennifer Cox is a co-founder and president of the National Network of Embroidery Professionals (NNEP), an organization that supports embroidery and apparel decoration professionals with programs and services designed to increase profitability and production.



Focal length

Blurring & sharpening effects in Photoshop

By Stephen Romaniello

Ocean – stock.adobe.com

Determining what is sharp and what is blurred in a picture can control the visual emphasis of its content. There are several tried-and-true techniques, and a few new ones, that dramatically affect the clarity of an image. It's important to become familiar with these effects because they can enhance your picture's impact and help it tell a better story. In this article, we'll look at techniques that heighten impact by fine-tuning focal elements.

Depth of field

The term depth of field (DOF) refers to the range of distance in a photograph or scene that appears acceptably sharp and in focus. It is a fundamental concept in photography, cinematography, or any printed or projected image. DOF is derived from the phenomenon of the gradual blurring of visual elements as they recede in space. The areas of focus in the front of the scene are crisp but the surrounding areas that are further from the camera gradually blur as they recede in the picture plane. Adjusting the DOF can emphasize the important regions of an image and make them dominant by blurring surrounding areas that compete for the viewer's attention.

In a camera, shallow DOF is achieved by increasing the size of the lens aperture when the exposure is made. The wider the aperture, the shorter the DOF. With shallow DOF, only a small part of the image, usually the subject is in sharp focus. Backgrounds appear blurred. Shallow DOF is common in portraits to emphasize the subject.

With deep DOF, most of the scene, from foreground to background, is in focus. It's frequently seen in landscapes and architectural photography. Deep DOF is achieved with a narrow aperture, for example, f/11, f/16 or f/22, a shorter focal length, or when the subject is farther away.

Filters

Similar DOF effects can be achieved in digital editing software like Corel PaintshopPro or Adobe Photoshop. Digital manipulation offers far more control after the exposure is made by using filters that mimic the DOF. These filters blur or sharpen regions within the picture plane. Blurring and sharpening have opposite effects on an image's clarity, and each serves different purposes in image processing. I suggest that when using the Blur, Blur Gallery, or the Sharpen filters, that you convert the targeted layer to a Smart Object and apply the filter as a Smart Filter so that it can be applied non-destructively and later adjusted at any time in the workflow.

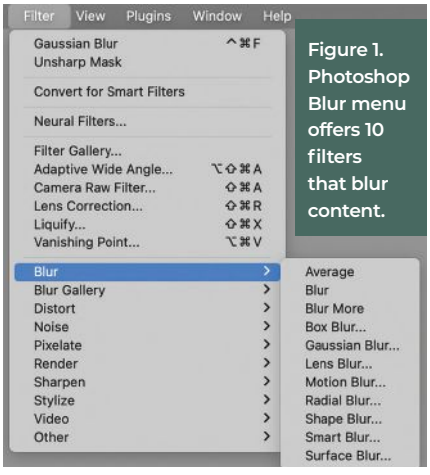


Figure 1. Photoshop Blur menu offers 10 filters that blur content.

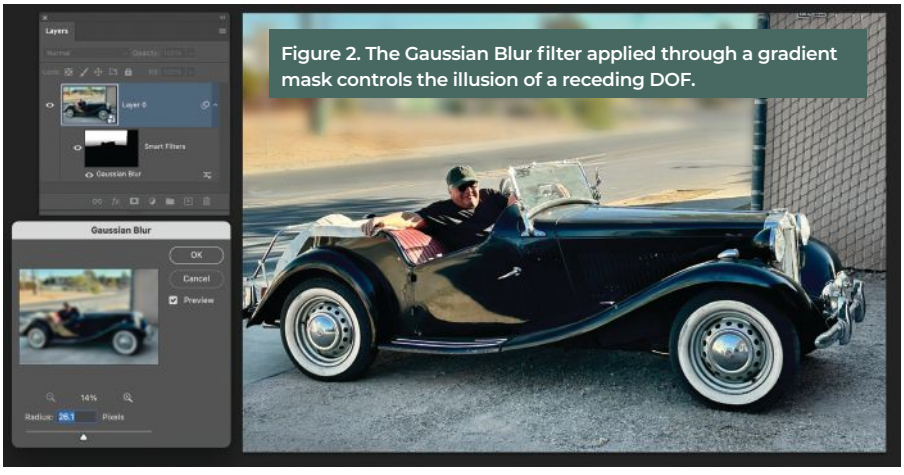


Figure 2. The Gaussian Blur filter applied through a gradient mask controls the illusion of a receding DOF.

Note: Bear in mind that I have exaggerated the blurring or sharpening effects in the illustrations to better illustrate their potential.

Blur filters

Blurring an image reduces clarity by softening edges and details. Blurring averages nearby pixel values and smooths transitions. Aside from controlling DOF, it's often used to reduce visual noise.

Photoshop offers 10 filters in the *Blur* menu. **(Fig. 1)** Each one has controls that affect pixels by altering their numerical values that degrades contrast over a specific distance to produce a blurring effect. A filter often used to control DOF is the *Gaussian Blur* filter applied through a gradient mask. The mask controls the strength of the filter over a distance. It's more weakly applied at front of its range and stronger at the back. This technique produces the illusion of a gradually receding DOF. **(Fig. 2)**

Blur Gallery

Photoshop's *Blur* Gallery is a complete interface that has five different blur filters that simulate traditional camera settings. There are several choices including Field, Iris, Tilt/Shift, Path, and Spin blurs and some of these filters can be used in to simulate or enhance DOF. Here are descriptions of the best filters in the Blur Gallery that are useful for manipulating DOF:

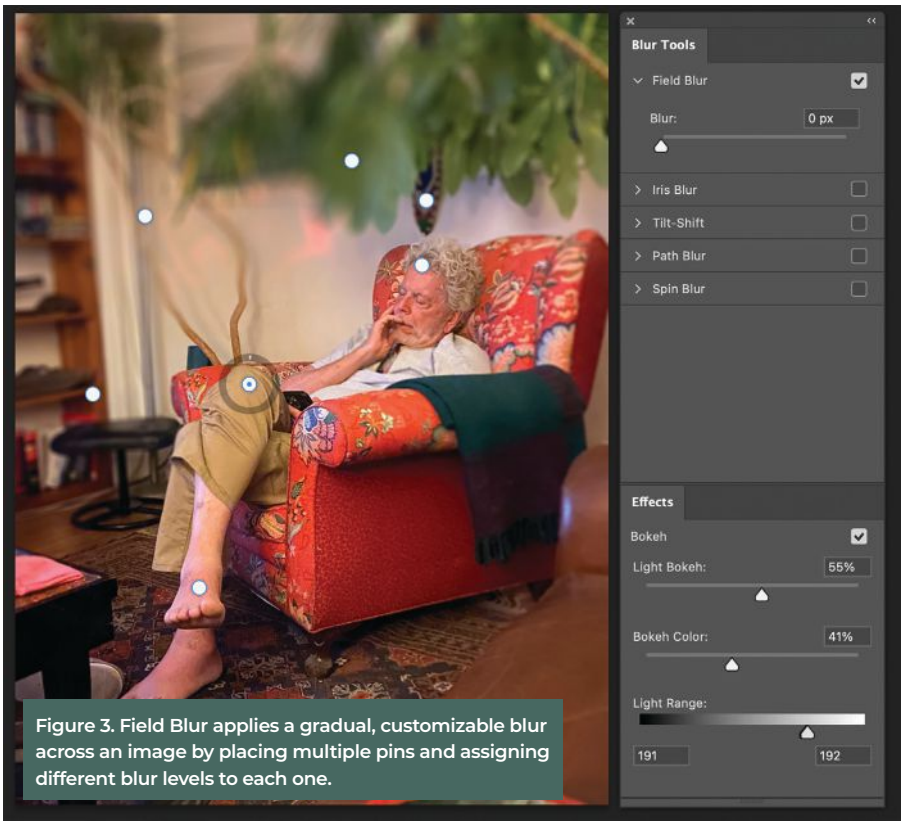


Figure 3. Field Blur applies a gradual, customizable blur across an image by placing multiple pins and assigning different blur levels to each one.

- **Field Blur** applies a gradual, customizable blur across an image, horizontally, vertically, or diagonally by placing multiple pins and assigning different blur levels to each one. **(Fig. 3)** Photoshop then blends the blur smoothly between the pins. Field Blur is ideal for creating DOF effects or selectively softening parts of an image.
- **Iris Blur** mimics the shallow depth of field effect created by wide aperture lenses. An area is defined with an elliptical or circular marquee that remains sharp. The blur increases toward the edges of the marquee. Drag the Fade handles (the little white circles) to adjust how quickly



Figure 4. Iris Blur is useful for portrait-style focus or emphasizing a central subject.

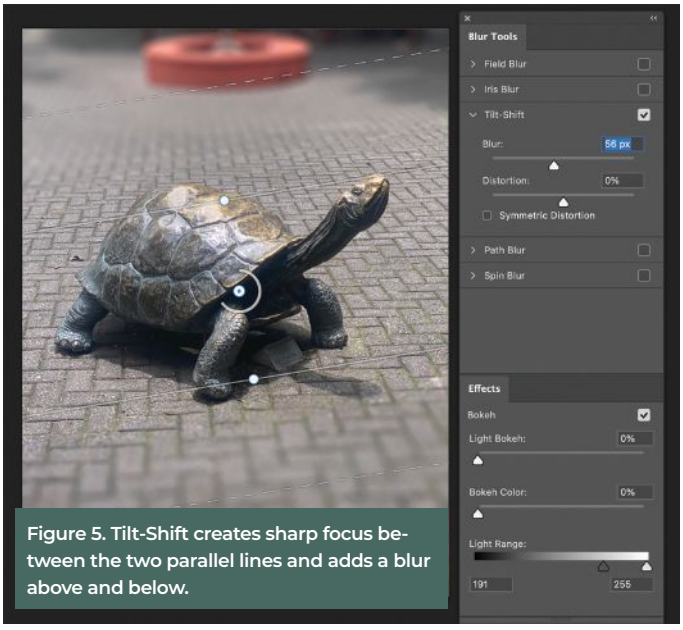


Figure 5. Tilt-Shift creates sharp focus between the two parallel lines and adds a blur above and below.



Figure 6. When the Unsharp Mask filter is applied, light pixels become lighter and dark pixels become darker enhancing the edges producing the appearance of a sharper image.

the blur transitions. Iris Blur is useful for portrait-style focus or emphasizing a central subject. **(Fig. 4)**

- **Tilt-Shift** simulates the effect of a tilt-shift lens that was used in old large-format cameras. This filter creates sharp focus between the two parallel lines and adds a blur above and below. **(Fig. 5)** The blur field can be rotated and repositioned and distortion can be adjusted. It's great for architectural shots or creative effects like making real-life scenes look like miniatures.
- The two additional filters, in the Blur Gallery, **Path Blur**, applies a blur along a designated path, and **Spin Blur** apply motion blurs to a defined area. They aren't recommended for managing DOF.
- **Bokeh Controls** is the effect created when the camera lens renders out-of-focus points of light. When the Bokeh box is checked, the light range, highlights, and color can be fine-tuned.

Sharpening

Let's look at the blurring's opposite sibling-*sharpening*! Where blurring obscures clarity, sharpening enhances it by emphasizing edges and fine details to make the image appear crisp and more defined. Sharpening increases contrast between neighboring pixels, especially around the edges of content. It's frequently used to improve the perception of focus and highlight details in textures, text, or patterns.

Unsharp Mask

Two of Photoshop's filters are worth considering when manipulating the in-focus areas of DOF. Most commonly, the *Unsharp Mask* filter is used. The Unsharp Mask filter is a sharpening tool used to enhance the perceived sharpness of an image by increasing the contrast along edges of content. Despite the confusing name, Unsharp Mask actually sharpens an image. The name comes from a traditional darkroom technique.

The Unsharp Mask filter detects edges by looking for pixels that differ from their neighbors by a threshold that you set. It then increases the contrast of those edge pixels. Light pixels become lighter and dark pixels become darker enhancing the edges produces the appearance of a sharper image. **(Fig. 6)**

The Unsharp Mask filter *(Filter > Sharpen > Unsharp Mask),* has three controls:

- **Amount** controls how much to increase the contrast of pixels. Low values (like 50%) create subtle sharpening. High values (150% or more) produce a more dramatic effect.
- **Radius** determines the quantity of pixels surrounding the edge pixels that are affected. Small radius (0.5–1.5 pixels) is good for fine details like hair or texture. Large radius (2–5+ pixels) produce broader sharpening.
- **Threshold** sets how diverse the sharpened pixels must be from the surrounding area before being affected. Low threshold (0–3) sharpens everything, including noise. Higher threshold (10–20) limits sharpening to more distinct edges, reducing noise amplification.

It's best to apply the Unsharp Mask filter after the image has been resized or the resolution has been changed. For high-resolution images, use higher Radius amounts. As usual, it's advisable to duplicate the layer and apply sharpening non-destructively or convert the image to a *Smart Object* and apply the filter as a *Smart Filter.* Use layer or filter masks to selectively sharpen specific areas.

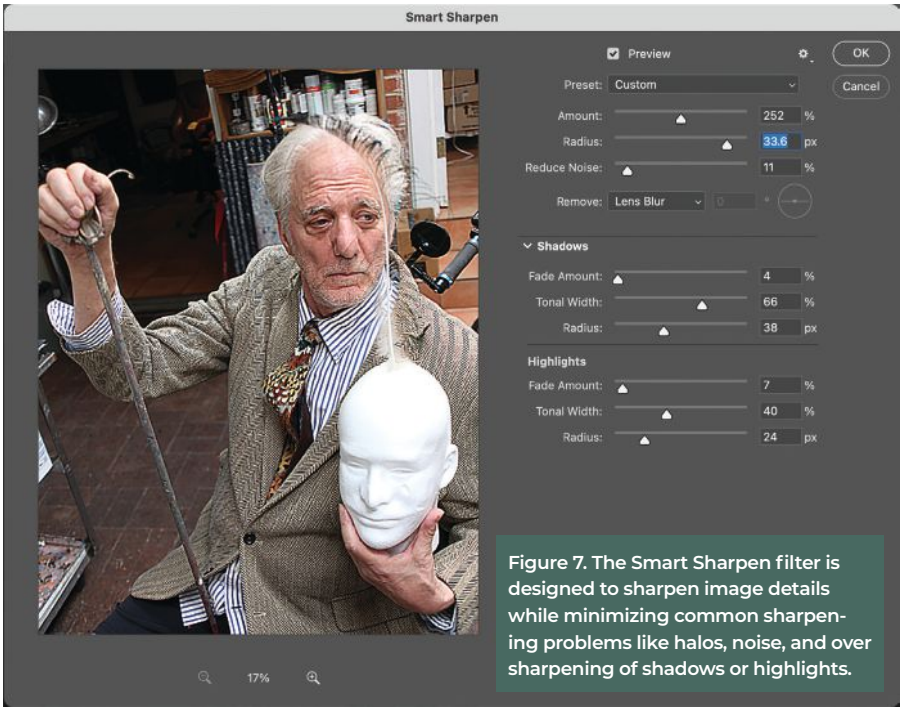


Figure 7. The Smart Sharpen filter is designed to sharpen image details while minimizing common sharpening problems like halos, noise, and over sharpening of shadows or highlights.

Smart Sharpen

The Smart Sharpen filter **(Fig. 7)** is an advanced sharpening tool that offers a bit more control and precision than Unsharp Mask. It's designed to sharpen image details while minimizing common sharpening problems like halos, noise, and over sharpening of shadows or highlights. It can be found in the Filter menu *(Filter > Sharpen > Smart Sharpen)*.

It has several controls:

- **Amount** controls the intensity of sharpening (similar to Unsharp Mask). Higher values increase contrast along edges.
- **Radius** determines how many pixels around the edge are affected. Smaller values preserve fine details; larger values affect broader areas.
- **Reduce noise** A slider that helps suppress noise while sharpening. Which is useful for low-light or high-ISO images.
- **Remove** corrects various types of blur effects. Choose the type of blur to correct: *Gaussian Blur*; a general obscuring of regions of the image. *Lens Blur*; accurate sharpening for natural image blur caused by lenses. *Motion Blur* attempts to reduce linear blur caused by camera movement.
- **Shadow and Highlight tabs** fade the sharpening in dark or bright areas. It's useful for preventing halo effects and blown-out highlights or noisy shadows.

Smart Sharpen has a few advantages over Unsharp Mask. First, it has more intelligent edge detection. Second, it sharpens with noise reduction and provides better shadow and highlight control. Third, it can reduce specific types of blurring.

When using Smart Sharpen, its best to preview and zoom to 100% to judge the effect. As with Unsharp mask and other blur or sharpen filters, apply it to a Smart Object layer for nondestructive editing and use filter or layer masks to sharpen selectively.

Neural DOF

The Blur and Sharpen filters are certainly handy but there is one more option that controls DOF that is AI driven that is found in the Neural filter interface. It's called *Depth Blur* and is currently in Beta awaiting your opinion of it. **(Fig. 8)**

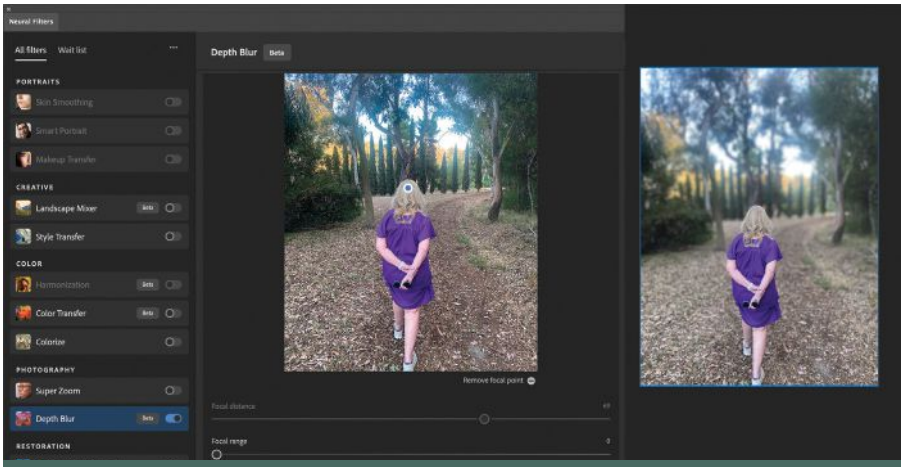


Figure 8. Depth Blur is an AI-driven Neural filter designed to manipulate DOF.

It specifically designed to control DOF using Adobe's Sensei AI to estimate depth, even without real depth map data. Its controls automatically select the subject and mask it from a blur effect. It produces realistic background blur to an image and mimics the shallow DOF effect produced by wide-aperture lenses, helping direct viewer focus and create a more professional, cinematic look even if the original photo was taken with a deep depth of field.

It has seven controls:

- **Blur Strength** controls the intensity of the blur applied to out-of-focus areas. Higher values have a stronger background blur.
- **Focal Distance** determines where the image stays in focus, like focusing a camera. Drag the slider to shift the focus forward or backward in the image or click directly on the image to set the focal point.
- **Focal Range** adjusts how much of the image, from foreground to background, stays in focus. A narrow focal range blurs everything except the focal point.
- **Blur Quality:** Choose from options like Low, Medium, or High for better edge handling and more realistic bokeh.
- **Bokeh Settings** controls the appearance and brightness of blurred highlights.
- **Temperature, Tint, Saturation,** and **Brightness** help you subtly match the blurred areas with the in-focus subject for a more cohesive look.
- **Output Options:** Output to New Layer, Smart Filter, or Duplicate Layer allowing for nondestructive edits.

Blur or Sharpen?

DOF is a powerful compositional tool. Whether you're blurring out a cluttered background or capturing every detail in a scene, it helps you control focus, guide the viewer's eye, and strengthen your image's message. Furthermore, it creates mood, for example, a blurry background can create a dreamy or artistic look, or sharp content across the scene can impart a crisp, realistic appearance. Well-considered DOF controls visual storytelling and helps emphasize important elements while hiding distractions.

Whether blurring or sharpening, the filters and techniques presented in this article provide a serious edge to total control over your picture's depth of field. I encourage you to experiment with these extraordinary tools. They will empower you! Find the technique that works best for your particular image and go for it. **GP**



Stephen Romaniello is an artist and educator who has seen the evolution of digital graphics since the beginning of the digital revolution in the 1980s. He is CEO of GlobalEye Systems, a graphics software and creative imaging consultancy, and founder of Gorilla Geeks, a creative consulting firm.



Holiday success blueprint

Prepare for your best Q4 yet

By Aaron Montgomery

The holiday season is the busiest and most exciting time for many small businesses, especially those in the garment and personalized products industries. But with the influx of orders comes the challenge of balancing inventory, shipping, customer policies, and marketing. If you're not prepared, what could be your best quarter can quickly become a nightmare of missed deadlines, stressed-out customers, staff, and owners, and lost opportunities.

The good news is that with careful planning and strategy, you can avoid holiday chaos and turn the fourth quarter of the year into your most profitable and successful time with a little looking ahead. I've developed this holiday success blueprint through years of experience and working with others who deal with a huge demand increase in the last three months of the year.

Inventory planning: Stay ahead of demand

The first key to a successful holiday season is having the right products available when your customers want them. Too often, businesses either run out of popular items or overstock products that end up sitting in inventory until next year. The sweet spot lies in accurate forecasting based on historical data and current market trends.

And that is just a fancy way of saying to stop and review what sold last holiday season. What were your bestsellers? Were there any trends in customer preferences? And are you hearing or seeing new trends for this year? Use this information to anticipate what will be in demand this year.

I believe consumers will make different purchasing decisions this year due to inflation, the economy, and the political climate. According to recent data, middle-priced items like jackets and practical gifts will account for a significant portion of holiday sales, while high-end items may not be as popular. Pay attention to these trends and adjust your inventory accordingly.

Foster strong vendor relationships

Vendors aren't just people who sell you products; they're partners in your success. Building strong relationships with your vendors means you'll have an easier time when you need a favor or a rush order. Treating them with respect and open communication is critical.

Check in with your vendors now about their stock availability and any potential supply chain issues. Ask them what challenges they're seeing for the upcoming holiday season and be upfront about your needs. If your vendor feels like a true partner, they're much more likely to go the extra mile when things get busy.

Adapt to supply chain challenges: Supply chain issues are real, and they're not going away anytime soon. That's why you need a backup plan. For your core products, consider ordering a little extra now, especially if those items will be in demand throughout the year. This way, you'll have a buffer in case of shortages.

Additionally, don't be afraid to find alternative suppliers. Sure, your primary vendor might be your go-to, but what happens if they run out of stock? Having a plan B, C, and even D can save you during peak times. And if you do find yourself in a bind, it's okay to source items from retail stores if necessary and price accordingly.

Shipping strategies: Ensuring timely deliveries

Key dates & deadlines: Shipping can make or break your holiday season, especially when you're trying to meet Christmas delivery expectations. Here in the U.S., the shipping challenges can be real with three major carriers all with their own challenges when



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the fourth quarter comes around. The key here is to be proactive. Know your shipping carriers' deadlines well in advance and plan your production accordingly. Then communicating very clearly, early, and often. Good customer service doesn't mean bending over backwards all the time; it means setting clear expectations and then delivering (or overdelivering) on those expectations.

For example, if you're shipping by ground, consider making your internal shipping deadline around Dec. 16 or 17 to give packages the best chance of arriving on time. Also, even if you typically rely on one carrier, offering multiple shipping options can benefit both you and your customers. USPS, UPS, and FedEx all have their strengths. Some might be better for smaller packages, while others are ideal for expedited shipping.

Also, consider offering in-store or curbside pickup as an option for your local customers. Not only does this provide flexibility for your customers, but it also saves you time and money on shipping costs.

Free shipping considerations: Customers love free shipping. Nearly half of all holiday shoppers say free shipping will influence where they choose to buy gifts. While "free" shipping isn't truly free for your business, there are ways to make it work. You can build the average shipping cost into your product pricing, or you can offer free shipping on orders over a certain amount to encourage higher-value purchases. Free shipping also allows you to control the shipping method, so you can choose slower, more cost-effective options while still keeping customers happy. Just remember to set cutoff dates well in advance of even your ground date so you have time to ensure holiday delivery for the free shipping option.

Crafting detailed customer policies: Transparency is key during the holidays. Customers need to know exactly what to expect when it comes to your stock availability, shipping times, and returns. Having clear and detailed customer policies in place can protect your business and set expectations from the start. So use this calm before the storm to think through as many possible scenarios. What happens if an item is out of stock? How will you handle late shipments? What's your policy on rush orders? Go to the extreme with your policies so you can protect your business, but at the same time, explain the policies in a way that they understand what the benefit to them is for that policy. For example, having a holiday order deadline in mid-December will protect you to ensure you deliver, but it is also a benefit for them as they get rest easy knowing their special gift will arrive on time.

Marketing preparation: Set yourself apart

Understand your customers' needs: This time right before the holiday season is the perfect time to reconnect with your customers. Find out what they're looking for this year, whether that's through social media, direct conversations, or customer feedback. Don't hesitate to ask your best customers what they're hoping to see during Q4.

For example, the middle price point is expected to dominate holiday sales this year. Consumers are looking for practical gifts that are useful but not extravagant. By understanding these shifts in consumer behavior, you can tailor your marketing to meet those needs. Being clear as to what the middle price point is and what they expect to get for their money will help you reach more like-minded customer.

Engage customers with a solid plan: Your marketing efforts during the holiday season need to be on point. This isn't the time to wing it. Start early by creating a calendar of promotions, social media posts, and email campaigns. Build anticipation with sneak peeks of your holiday products, offer early-bird discounts, and make sure your messaging resonates with your ideal customer. Cyber Monday has the highest conversion rate of the holiday shopping season, so plan for a big push leading up to that day.

Here are two of the most important marketing activities I have seen be effective tools to increase fourth quarter sales:

1. Set holiday deadlines early: Be clear with your customers about your holiday deadlines. We talked about this from a shipping perspective, but just letting people know when you will stop accepting regular orders, and another date for rush orders will remind them they need to place their orders and tell their friends. Communicate these deadlines well in advance.

2. Execute a marketing calendar: A successful holiday season doesn't happen by accident and it takes careful planning. Create a comprehensive marketing calendar to keep track of all your promotions, sales, and key dates. I personally like to get a large wall calendar and fill it out, and if you're organized, color code it!

A stress-free & profitable holiday season

The holiday season doesn't have to be a time of stress and exhaustion. I have been on both sides of the situation. I have slept at a production facility as well as had times where we had a huge celebration together on the last day before we shut down for three weeks because of all the success. By planning early, staying organized, and communicating clearly, you can turn your Q4 into a period of increased sales, happy customers, and business growth. And the best part: these strategies don't just apply to the holidays. When we looked at each quarter like this, it improved everything. **GP**





Aaron Montgomery's company, Our Success Group, assists with business plans and pricing strategies, as well as customer service and marketing. He is the author of "The FUNdamentals of Business Success" and the co-founder of a facilitated six-month mastermind collective called Radical Goal-Getters. Montgomery also co-hosts the 2 Regular Guys podcast.

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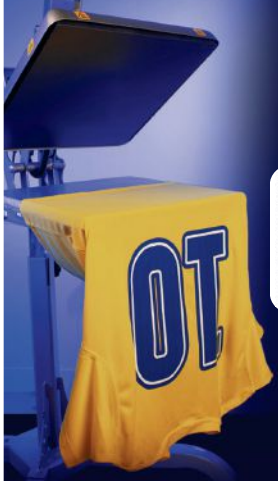






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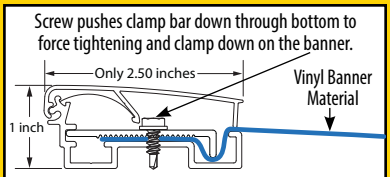
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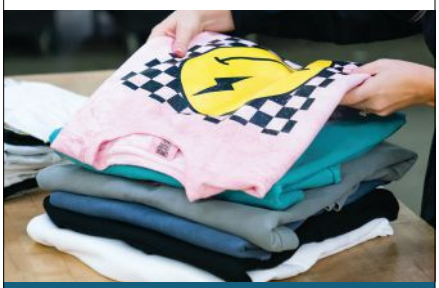
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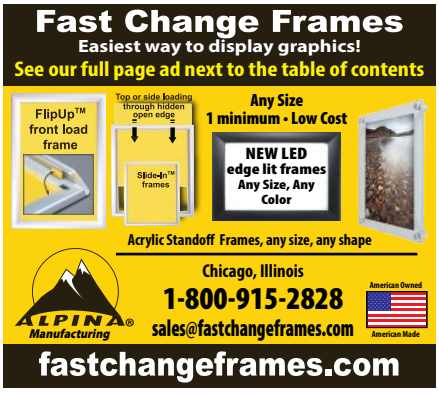
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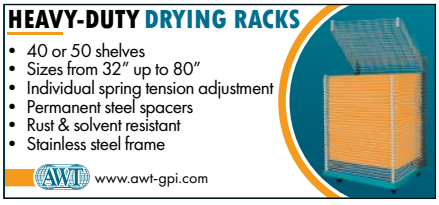
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