



Banner Finishing Roundtable 2016



New finishing solutions are creating more automated options for sign shops

The final stage in a banner's construction is the finishing process, which really determines how and where it will be displayed. That's where many finishing solution choices come in to play. Banner finishing comes in many forms, from sewing, taping and grommeting. In the past, sewing was one of the primary choices for finishing printed images. The industry is now seeing popular options such as pressure sensitive tabs, heat-sealing and welding as the solutions that meet many of their client's concerns related to speed, strength, weather, durability and overall aesthetic appeal.

How a finished banner looks when it is hanging is key to the final product's overall success. Even if a sign offers the perfect print but has wrinkles throughout the seams, then the entire product is flawed. Finishing is a key element to the overall banner project and should not be overlooked.

In order to check out the latest trends, products and solutions for the banner finishing market for 2016, we polled a panel of industry experts. The roundtable

panel included: Jordi Carbonyl, CEO, MATIC, S.A.*; Rick Hatton, President, E. L. Hatton Sales Co.*; Jeannette Hendrickson, Marketing Manager, Miller Weldmaster Corp.*; Ken Huber, Product Specialist, Technical Textiles and Industrial Fabrics, Leister Technologies, LLC*; Christopher Treptow, Sales and Marketing Director, HIKER USA, INC.*

What are some of the trends you are seeing in banner finishing for 2016?

Hendrickson: There are two trends we are seeing particularly within the banner finishing industry. The first is SEG or Silicone Edge Graphics, which appear to be popping up everywhere. These banners are printed on a digital textile material and require the SEG to be sewn on all four sides allowing it to easily slide within a track. Common placements for these banners include tradeshow graphics and retail displays.

We have also watched several small banner shops grow their business and are now looking for a way to automate



By Bill Schiffner, Industry Author



Ares-Plus-SLE machine from MATIC S.A. (Images courtesy of MATIC S.A.)

their production. By automating banner finishing, sign shops are able to increase production with lower operating costs.

Treptow: We see an increasing trend for companies to automate the grommeting step in the finishing process. In the past it used to be that mainly the larger companies would get the faster, electric grommeting machines, but more and more, smaller companies are automating this part of the production cycle when their volume alone may not justify the capital expense. A faster grommeting machine allows companies more accelerated production times, which gets the product to the customer faster and decreases cost by requiring fewer labor hours.

Huber: Every year we see a greater number of people moving away from sewing. If the shop does a large enough volume of banners, we are seeing a number of shops switching to welding.

Carbonell: Textiles are replacing PVC coated or laminated media on many projects. This means we must also need to change the way we finish these products as well. Textiles are a softer, lighter media than PVC banner and in some cases with its dimensional distortion, they require machines with more technical features to compensate fabric displacement, wrinkles or changing its characteristics during sewing or welding process.

The trend is moving towards the use of wider rolls up to 5 meters now. This will also have an affect on storing, handling and cutting it as well.

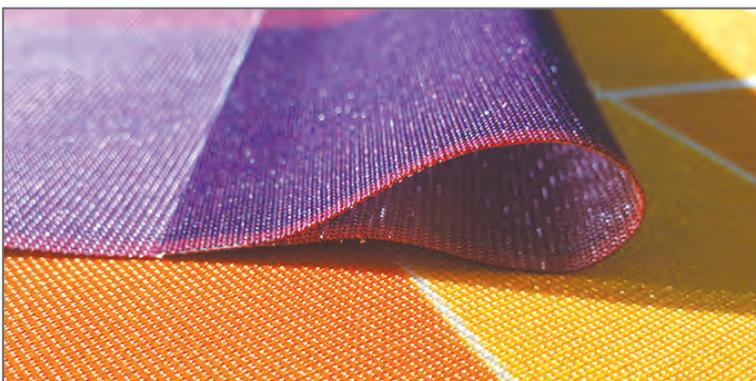
Hatton: Printers are continuing to trend away from sewing because it requires a (sometimes finicky) sewing machine, a skilled operator and maintenance person. Double-sided banner tape and grommets are an option for the small to moderate size printer, but not for the big guys. Our Banner Ups method of pressure sensitive tabs and PowerTape single sided hem reinforcing tape has grown greatly in market share because it is faster, easy and requires no equipment. Much stronger too, according to wind tunnel testing we have done.

No question welding of all kinds continues to grow and the greatest innovations are at the low and high end. We recently introduced our BravoBanner Automated Banner finishing system that provides a full automation solution.

Another new trend that is really going to dramatically impact finishing in the



The Atlas-V vertical warehouse for rolled goods with optional material handling. (Images courtesy of MATIC S.A.)



A sample of welding on printed textile and fixmatic tape that was produced with the Ares machine. (Images courtesy of MATIC S.A.)

next 5 years and that is the advent of page-wide printers. That increase in production speeds is going to create pressure and demand for faster finishing techniques that can keep up.

Until now, slower methods (like sewing and slower forms of welding) could keep up with the printers, but that is changing. The increased print speeds will ultimately develop demand for finishing automation that can keep up.

What are some of the new techniques being used in this area?

Hatton: Pressure sensitive adhesives have advanced greatly in the last five years and some are now so aggressive that they can rival and even exceed the strength of sewing or welding on banners. Because adhesives stick instantly to almost all media, there is virtually no limit as to how fast or to what materials they can be applied. By contrast, welding only works with limited thermoplastic polymers, like PVC and polyethylene. Also, welding is very sensitive to speeds and temperatures. Too hot or too slow - and you melt the material; too cool or too fast, and the weld bond is weak.

Our BravoBanner Automated Banner Finishing system can finish a banner in 20-30 seconds using only our adhesive tabs and tape. That's about 1000 banners per day with a single operator. No grommets or welding needed. It is very low power and space requirements - it's about the size of a large office desk. Also can create a fully recyclable banner with no grommets to remove.

Both our system and the other major automation alternatives are using a system of reinforcement along the top and bottom (or long) edges of the banner only. This is where the majority of the stress is absorbed. If it is done right, it not only improves the durability of the banner but it dramatically speeds up the automated banner finishing because all the finishing is done along a single axis. Much faster than sewing all sides of a banner as was done in the old days. That process is very slow and impossible to automate at an economical cost.

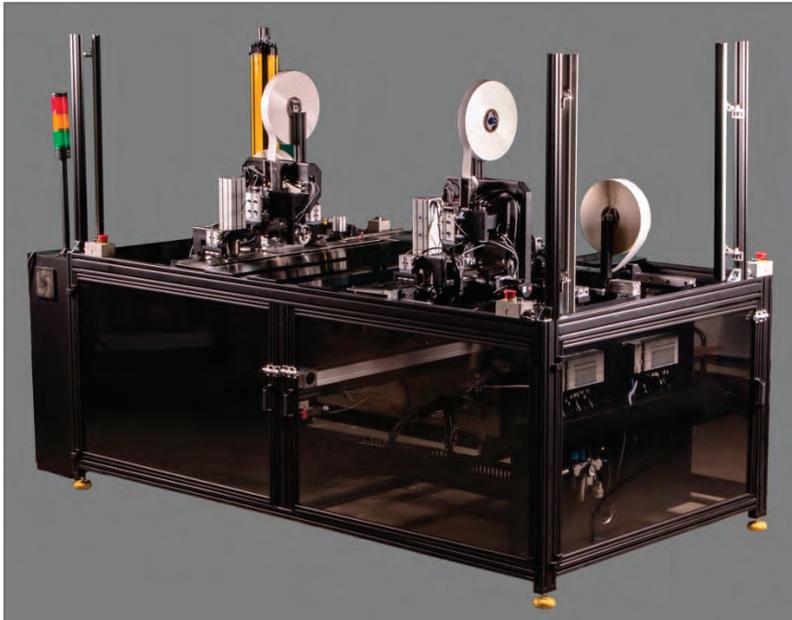
Carbonell: Welding with impulse welding technology (top and bottom heated elements) are being utilized more and more today. This user-friendly technology doesn't create fumes, and because of vertical movement of top and bottom bars during welding, avoids displacement of top and bottom layers compared to other finishing techniques.



The digital technology of Leister's SEAMTEK 36 welding machine is said to ensure perfectly welded, long lasting seams. (Images courtesy of Leister Technologies.)



The VARIANT T1 machine offers a top speed of up to 18 m/min. (Images courtesy of Leister Technologies.)

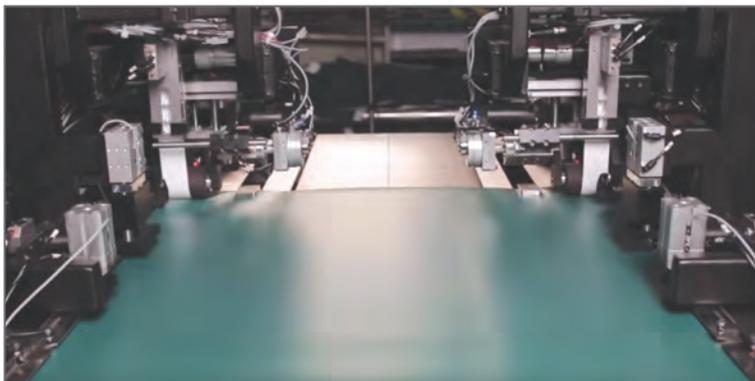


Banner Ups BravoBanner System is a fully automated banner finishing system that utilizes pressure sensitive adhesive tabs and tapes, which allow banner producers to make high-strength reinforced banners quickly in-house without sewing, welding, or grommeting. (Images courtesy of E. L Hatton Sales Co.)

What are some of the advantages of heat-sealing?

Hatton: If done correctly heat-sealing can produce a nice looking finished edge that can give good strength. Also, there are no consumables, such as tape. The negatives are that it requires an upfront equipment investment and a skilled person to operate and maintain the machine. Then of course there are energy costs and space requirements.

There are two main types of heat sealing. One is a hot bar sealing, where, as the name implies, a hot bar presses down and irons the folded hem melting it from the outside. As a result, this method is limited to thinner materials because the thick ones will burn on the outside before the inside is melted. Also, only about a three foot section can be typically welded at a time so it is slow. On a positive note, the equipment is relatively low cost at around \$1500. This is a good option for the shop that needs welding on a limited range of PVC media, on a regular but not daily basis.



The BravoBanner system automatically applies Banner Ups BravoTabs and BravoTape with a few keystrokes. (Images courtesy of E. L Hatton Sales Co.)

What are some of the advantages of welding?

Hendrickson: Finishing comes in many forms from sewing and taping to heat seaming. However, the industry gravitates towards heat seaming and welded seams as the go to option as it meets many concerns related to speed, strength, durability and overall aesthetic appeal. There are many advantages when welding your banners. They include: low to no consumable costs depending upon how much they currently sew or use tape within their product lines, there is no thread matching required, a welded seam will last as long as the material itself and will be stronger than the material and welded seams create a nice, clean seam for finished edges of nearly all vinyl banners.

Using welding/heat-seaming, print shops have full versatility of welding many different fabrics during their operation. These include vinyl (PVC), vinyl films, polyethylene (PE), rigid extruded products, weldable webbing and digital textiles.

Huber: Leister Technologies manufactures hot air welders for the sign and banner industry. Welding is the strongest way to finish a banner. The process of welding creates a true molecular bond.

Hatton: Well, that depends. One type is a stationary welding machine with drive rollers, which, with the help of a human operator, feeds a banner through the machine's hot air jet, not unlike a sewing machine. This tends to be faster and more precisely controlled, and is fine for typical sized banners, but not good for great big ones. In hot air welders, the heat is being jetted right into the inside of the hem, which usually results in a more reliable bond in a wider range of media weights.

Another type of welding is RF welding, but that is relatively rare in the banner industry. Radio frequency waves are used to generate heat and melt the plastic, not unlike a microwave machine. Then a bar weld is produced. This type of equipment is fast and produced reliable welds but it is relatively expensive and takes up a fair amount of space. This is best for people doing large fabrications that are very repetitive so they can set up their finishing area for high throughput to make the most of the RF machine.

Carbonell: Using the appropriate welding machine (vertical movement of top and bottom bars during welding process) users will get a smooth and flat (non-wrinkled) seam. After the welding process users can apply cooling time thus keeping both layers of fabric under pressure.

Which signage applications are better for welding?

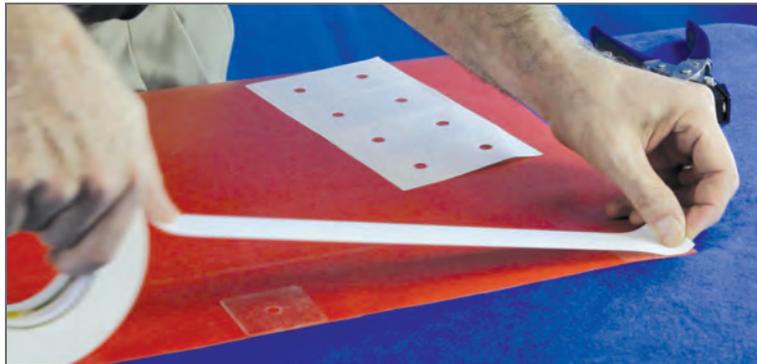
Hendrickson: Welded seams create a clean, neat finished edge for almost all vinyl banners. Those banners that are used for outdoor applications have advantages of being welded. Specifically there is no threat rot or threat to exposure to the sun when banners are welded instead of sewn.

Huber: Welding has several applications in the industry including: hemming, pole pockets, billboard paneling, and inflatables.

Carbonell: Just about every application is better to weld unless following applications which requires sewing such as hemming on flags, binding on flags or tents, applying Velcro or magic tape and SEG for fabric frames.

What are some important things to consider when purchasing a welder?

Hendrickson: To pick the proper welder/heat-seaming methods, you must first understand the choices and how



Hatton reports that their Banner Ups method of pressure sensitive tabs and PowerTape single sided hem reinforcing tape has grown greatly in market share because it is faster, easy and requires no equipment. (Images courtesy of E. L Hatton Sales Co.)



Hatton says for small to medium size shops their Banner Ups Adhesive Grommet Tabs and PowerTape system provide a fast simple and extremely strong finishing solution. (Images courtesy of E. L Hatton Sales Co.)



The T300 Extreme Edge is a banner-welding machine that combines versatility with precision adjustments. The T300 Extreme Edge comes equipped for finishing high-speed hems, pockets, rope-in-hems for banners, signs and printed media. (Images courtesy of Miller Weldmaster Corp.)



Hendrickson says their 112 Extreme is built to take a shop's production and efficiency to the next level. (Images courtesy of Miller Weldmaster Corp.)

they fit into your production processes. Different print shops have different needs from product types and production amount to the business size and scale of prints produced.

Print shops that primarily print images within the size of their large-format printer and needs to finish the edges have a few options. For high-production needs, a stationary, rotary-wedge welder is the primary options. However, there are others depending upon speed required, budget and production needs including; impulse welder, floor welders, ultrasonic welder or RF welders.

A print shop that prints on a grand-format printer and need to tile images together with long, straightedge seams also has options. A vacuum positioned hot air welding system is a great option. Other options depending upon the need are RF welder or floor welders.

To determine the size of welder that is needed, you must ask yourself what are the average size banners being produced? About 80 percent of the seam sizes you are creating or plan to create should be within the welder size you purchase.

Huber: Some important things to consider when considering purchasing a welder includes: volume of work, floor space available, which applications are going to be welded, as well as cost.

Carbonell: Things to look for include: temperature control, which includes getting constancy and repeatability welding results through all the welds. The possibility to save different programs for different types of fabrics that require different welding parameters is a good option for the unit to have. Machine length is also important. Five meters or longer and in any case machine should have an opening left and right side to offer larger welding than machine size.

Hatton: Up front cost is only one of the considerations. Another consideration is what will the cost of operation be? Such as electricity, floor space, labor cost, how much training will be needed, repair and maintenance cost. How fast is the throughput of the machine? What throughput do you need per day? What media are you using now and how flexible will the equipment be to accommodate new types of media? Will you be welding banners that are small, medium, large, or billboard sized?

An important and often overlooked



The AES1900 is designed with the capability to weld and grommet single panels or produce product off roll. It can weld and grommet 3 x 5 banners every 30 seconds. (Images courtesy of Miller Weldmaster Corp.)



The Digitran System is an all-in-one sewing and welding solution designed specifically for SEG graphics systems. (Images courtesy of Miller Weldmaster Corp.)

consideration is not only how it will affect your current cost, but does it bring any completely new capabilities that may open new doors for your business? Allow you to get business you would have had to turn away in the past? Give you a competitive advantage in turnaround time in the highly time sensitive banner business? These are considerations for the business that is investing for growth.

Is it worth it to purchase a welding or heat-sealing system or subcontract needed welding services?

Carbonell: This will always depend on your volume of welded products that you produce. You should not subcontract just because you think you need high knowledge to get perfect result. Speed, quality and flexibility are a given due to machines that use this technology and are not due to operator skills.

Huber: This question really depends on the volume of work being sent out. If your ROI time is short enough, it would make sense to purchase a welding system.

Hatton: Pretty simple on this. At the low volume end, there are several manual methods that can give users a pretty good throughput at low or no machine cost and little training. Our Banner Ups are one method and manual grommet installation is another. On the other hand, if shops need finishing every day in their business, they should consider some kind of equipment to help speed the job. At high use levels it will certainly be cheaper than sending all the work out, but even at moderate volume levels, it will give the flexibility and response time needed to keep existing customers happy and win new ones. We are proud of that, thanks to our Banner Ups products and equipment, welding is not the only option anymore.

Hendrickson: Best thing to do here when considering bringing banner finishing in-house or outsourcing is to prepare a cost analysis of what you spend or would spend subcontracting. Then use a simple calculation to find the ROI for a welder. This comparison should make the decision to invest in welding/heat-seaming easier.

How are your products helping shops with their projects?

Treptow: We offer numerous types and sizes of eyelets and grommets (specializing



"The HIKER H-308 is our most popular electric, dual feed grommeting machine that many customers are moving up to," says Treptow. (Images courtesy of HIKER USA, INC.)

in self-piercing), eyelet/grommet inserting hand presses, kick presses, semi-automatic presses, fully automatic presses, tooling (die), and microcomputer controlled web-cutting machines. Faster grommeting machines such as ours provides companies with much faster production and turn around times, which gets the product to the customers faster and decreases cost by requiring fewer hours of labor.

Hendrickson: We believe sign industry professionals deserve the most innovative machines that meet all their finishing needs. Therefore, we take great pride in working with our customers to ensure our heat-seaming welders meet their every production demand. From stationary hot wedge welders to traveling, hot air welders, and now integrated welding and sewing systems we are eager to see our customers grow their businesses and produce the best

looking seams. For those that are ready, our fully automated banner finishing systems is a great way to finish banners even faster while reducing your costs.

For example, our 112 Extreme is our fastest most precise welder for welding long straight seams with a large range of welding capabilities built to fit any company size or sign application. Our T300 Extreme Edge is best for all high speed finishing needs with the ability to finish a 4 x 6 banner in less than 1 minute! The T300 Extreme Edge combines versatility with precision adjustments and is equipped for high-speed hems, pockets, rope-and-hems and more. The Digitran System is an all-in-one sewing and welding solution designed specifically for SEG graphics systems. Now finish all PVC banners and signs or sew digital textiles with SEG. If your ready for automated finishing, our AES1900 will quickly

and efficiently finish products reducing your finishing bottlenecks. It is designed to weld and grommet single panels or produce product off roll. It will weld and grommet 3 x 5 banners every 30 seconds. We strive to listen to our customers, stay ahead of the industry trends and provide the easiest, most reliable welders.

Carbonell: Our products are providing shops with speed, quality, flexibility and ease of use.

Huber: The biggest benefit to welding is the speed of production and the removal of consumables such as tape.

Hatton: For the small to medium size shops, our Banner Ups Adhesive Grommet Tabs and PowerTape system provide a fast simple and extremely strong finishing solution. We now also have a product called

TexTape, which sticks to textile banner media so shops can hem textile banners easily with no sewing machine equipment or labor cost. Finally for the high volume folks, we have Our BravoBanner fully automated finishing system that can produce 1000 banners per day with a single operator. We believe automation is the future of banner finishing.

***SGIA members, in order of mention:**
 MATIC, S.A., member since 2013
 E.L. Hatton Sales Co, member since 2011
 Miller Weldmaster Corp., member since 1999
 Leister Technologies, member since 2003
 HIKER USA INC, member since 2004

Bill Schiffner has covered the imaging industry for more than 20 years. He has reported on the many new digital technologies that have reshaped the imaging marketplace.

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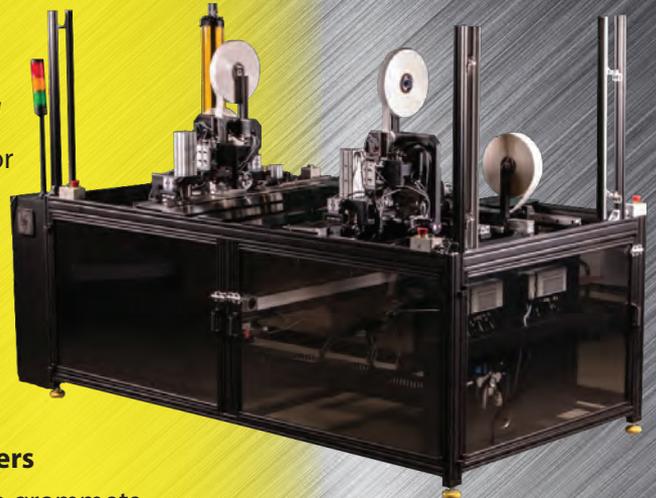
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