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- Further Decoding the SBIR Grant Process
- WHMA Spring Conference Coverage
- Choosing the Right Cutting & Stripping Machine



## Galaxy Wire & Cable

### “Light-years beyond the competition”

By Fred Noer

Powerful is the slogan of Galaxy Wire & Cable: “Light-years beyond the competition.” It could be complemented by an equally compelling motto: “Service that is out of this world.”

To company owner Kathy Stussy, staying ahead of her competitors means having stellar service. She built Galaxy Wire & Cable (GWC) primarily on relationships with people in all aspects of her business – staff members, customers, suppliers and any others who interact with her business.

As it has been since Stussy founded it in June 1995, GWC is located in Horscham, Pa., a city of 15,000 people 30 miles north of Philadelphia. The company, which Stussy expects to do \$7 million in sales this year, has two divisions – supplier of custom and commodity wire

and cable and manufacturer of wiring harnesses and cable assemblies.

“Whether it’s a customer or a vendor, we don’t want an order, we want a relationship,” Stussy, 58, said. “I think our customers know and appreciate that.”

“We are honest and open with everyone because we want to help customers by providing solutions and good products,” Stussy said. “You could say we do business the old-fashioned way because we are not going to lie to somebody and say we can get something to them in six weeks when we know it takes 10 weeks.”

Such a principled approach has provided the foundation for Stussy to grow professionally and to start GWC. She began in the wire and cable supply industry in 1981 and worked in sales and purchasing at four companies in the greater Philadelphia area before opening GWC.

## Further Decoding the SBIR Grant Process

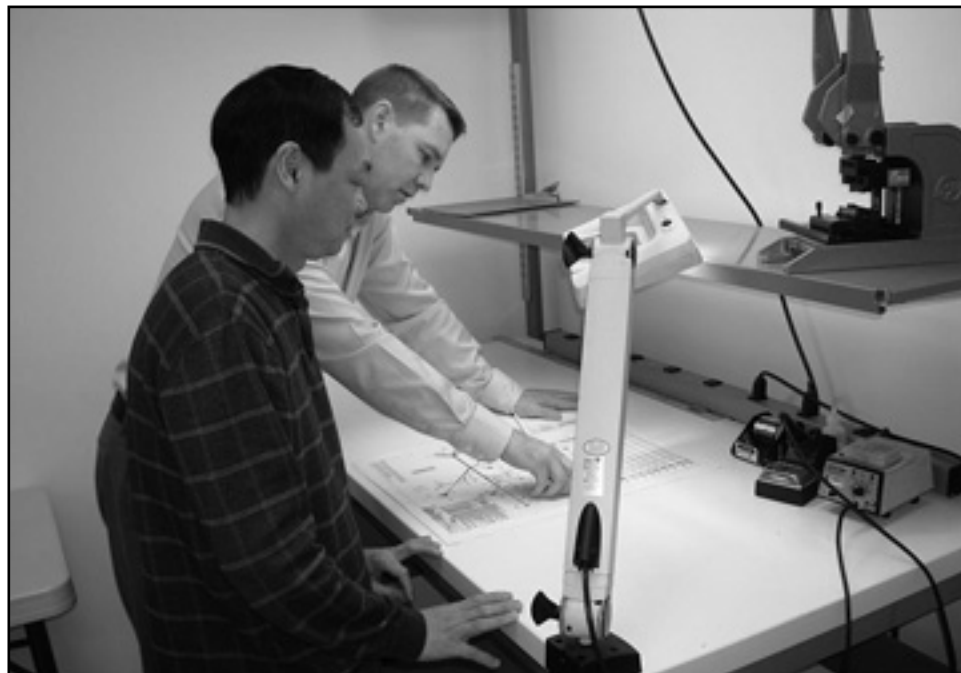
In the last issue of *Wiring Harness News*, we provided a brief schematic for funding your R&D through Government SBIR (Small Business Innovation Research) grants. In that article, we interviewed Chip Laingen, of Minnesota Wire, to get his perspective on navigating the SBIR process. As promised, we sought further input from someone responsible for publishing, administering, selecting, and managing the SBIR process. Brian Vetter is with CIV

NAVAIR. He is the technical point of contact on wiring system SBIRs for the Navy. He is instrumental in writing and administering SBIRs and, it is hoped, this interview will take some of the mystery out of the process.

**WHN:** How do you select topics for potential SBIR proposals?

**Vetter:** When we put out a topic solicitation, we formally or informally

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The Galaxy Wire & Cable Engineering Department works closely with production staff.

Stussy, who serves as president and CEO, founded – and funded – GWC by herself. Her start-up plan “worked seamlessly,” she said. “I never skipped a beat because loyal customers who had followed me through the years switched over.”

Part of Stussy’s success could be attributed to destiny. “I always knew one day I would have my own business,” she said. “That was apparent at a very early age.”

Stussy’s premonition is consistent

with one of her strongest characteristics today. She is obsessed with predicting what the future holds for her business.

“I do not work in today,” Stussy said. “I always work in tomorrow. I’m thinking of the next thing to catapult us around the next bad time. There are a couple of things in the pipeline now for the future. I am very cognizant of what is coming.”

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## WHMA Conference

Unseasonably warm weather greeted WHMA members at the Walt Disney World Swan Resort in Orlando, on February 15 - 17. A record number of members were in attendance at this year’s conference commemorating the 20th year of WHMA. As usual, attendees were treated to presentations from leading industry professionals on cutting edge subjects, as well as the second largest exhibitor count for WHMA conferences.

The Chairman of WHMA, Mark Wood, opened the meeting and presented the annual Bud and Gus Award. This year’s award went to Mike Rizzo of Schleuniger for his years of service and advice to the industry.

Kicking off the list of presentations was Jason Piatt, President of Praestar Technology. Praestar provides consulting and training services to manufacturers, and specializes in market development and manufacturing process improvement. Mr. Piatt instructed value is increased by either decreasing acquisition costs, or by increasing a product’s features and benefits. He noted that customers actually select a balanced value at a balanced price point. They do this based on their willingness to trade off between the lowest price and the highest added value of the final product.

Returning to WHMA was David

Pheteplace of Bishop & Associates, Inc. Bishop & Associates is a market research firm specializing in the global electronic connector market. Mr. Pheteplace reported on the current health of the industry along with his prognosis for the future. He reported 2011 quarterly industry growth at 10.6% for Q1, 9.7% for Q2, and 9.2% for Q3. The only quarter that saw a year-over-year loss was Q4 at -2.3%. Pheteplace was encouraged by these numbers as they indicate an overall 6.6% growth over a very strong 2010. His firm predicts a more modest 3.5% for the 2012 world connector market.

Also returning to WHMA was Brian Hirt, Marketing Director at IEWC, a global distributor of wire, cable, and wire management products. Mr. Hirt joked that his prediction for future copper prices is that they “will go up, then down, hold steady, drop quickly, bounce back, then climb before dropping again.” He said this to portray uncertainty in commodity prices, and advocated pricing strategies based on a long-term view of the market; coupled with some hedging strategies that he outlined in detail.

After lunch, Lyle Fahning outlined the IPC/WHMA-A-620 Standards, including the new A revision covering testing requirements and lead free acceptance

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# WHMA

Wiring Harness Manufacturer's Association

Recently, the Wiring Harness Manufacturer's Association (WHMA) held their Annual Meeting at the Walt Disney Swan Resort in Orlando, Florida. It was a terrific three day session that included general session presentations as well as round-table breakout sessions. In addition, eighteen supplier-members displayed their latest and greatest offerings in a casual tradeshow setting.

We learned some terrific things this year like Jason Piatt of Praestar Technology's presentations on workforce and business development. Dave Phetplace of Bishop and Associates gave us a snapshot of the current state of the interconnect business, which dovetailed very nicely into learning how to develop a commodity strategy from Brian Hirt of I.E.W.C.

Lyle Fahning and I had an opportunity to update the group about the manufacturing standard, A-620, while Dave Bender of Tyco assured the group of job security as he discussed the never-ending list of regulations in our industry. Michael Wurzman of RSJ Technical Consulting followed Dave with a great presentation on conflict minerals, and Martine Hunter of MLT Creative in Atlanta shared with us her experiences with the Business Marketing Association and how the BMA can help WHMA-member companies in their marketing efforts.

WHMA members also took the opportunity for some social activities out in the Florida sun, including our annual golf tournament.

I should also report that at the conclusion of our conference, we held the Annual Meeting of the Board of Directors of the WHMA. At this meeting, I was named Chairman of the Board, replacing the retiring Lyle Fahning. I am confident that the Board and Man-



**Mark Wood**  
WHMA Chairman of the Board

agement will continue the steady and professional course that Lyle has set for our organization, and on behalf of the Board, I want to thank him for his many years of service. Of course, as the 'new', Immediate Past Chairman, he won't be going far for which I am very grateful.

Of course, now that this meeting is completed, planning has already begun for our next meeting to be held February 20-22, 2013, at the Renaissance Las Vegas Hotel in Las Vegas, Nevada. Once again, this meeting will focus on current trends and issues of importance to our members, but we will also have a chance to celebrate the launch of IPC/WHMA-A-620 Rev (B), which is scheduled for sometime in the summer of 2012.

This upcoming meeting will also mark the twentieth anniversary of the WHMA and we are excited about continuing our Promise Statement which says, "The WHMA connects you to resources that make you an industry leader." Please join us if you can. For further information about the conference as well as information about A-620 or WHMA in general, please visit our website: [www.whma.org](http://www.whma.org)

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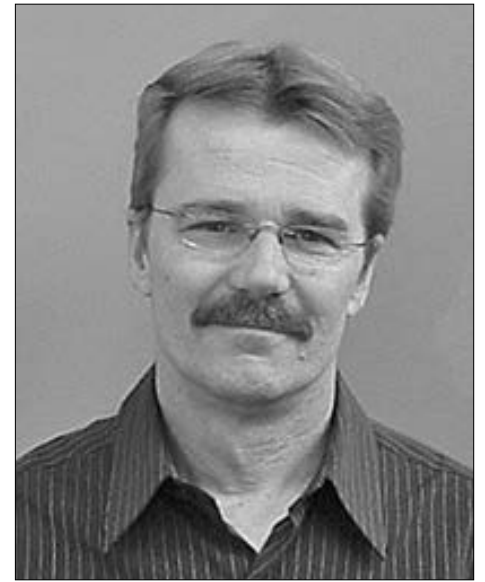
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# Golf Lessons

Paul Hogendoorn



Paul Hogendoorn

I'm not a person that will often spend a Sunday afternoon watching golf on TV, but I must admit that every spring, I look forward to watching the last round of the Masters. Golf is a sport that rewards practice, consistency, strategy and courage, and the Masters is the event that illustrates this best. It attracts the best golfers in the world, and sets a stage that motivates them to the limits of their game, often resulting in tremendous drama. The 2012 tournament was no different.

Even though it's a sporting event, there is much that we as manufacturers and company leaders could learn from it. Business after all, is a competition, just like a golf tournament. The players are all competitors, in business and in sports; they all strive to be the best overall, and to try to win the day.

Bubba Watson won the event on this day, in very dramatic fashion. Many people are going to point to his shot out of the trees on the first playoff hole as the reason he won, and indeed, it was a difference maker. The reason he could make that shot is where the lessons lay.

In his interview after the game, he described the thoughts leading up to that shot saying that he "saw the shot in his mind and then just hit it", completely confident that he could bend it 40

yards left to right, around the trees, and land it on the green.

Many years ago, Billie Jean King, one of the greatest women tennis players of all time, said "you have to see it to be it". This quote could be accurately applied to any one of the thousands of precision game winning shots she made over the course of her career, but also to achieving and defending her position as the dominant tennis player in the world in her time. She saw it clearly in her mind.

But simply "seeing it" doesn't tell the whole story - in fact, it doesn't even tell half the story. These athletes can only make these incredible shots that they

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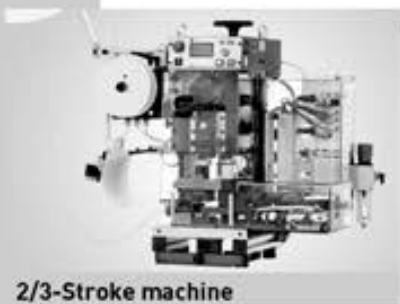
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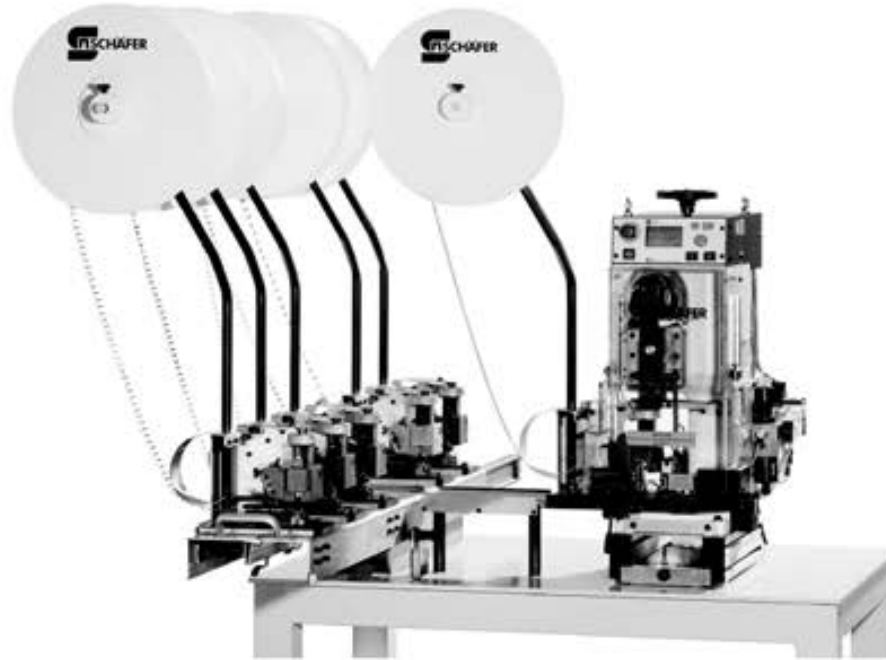
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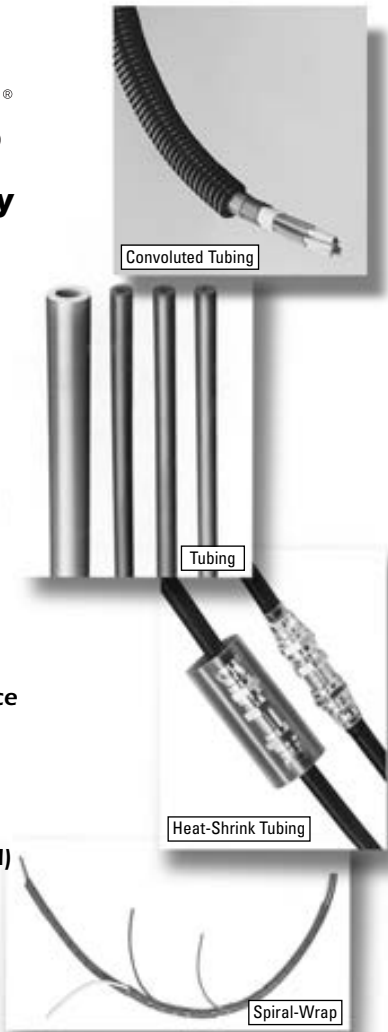
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# Golf Lessons

*Continued from page 4*

see in their minds because they practiced relentlessly, just to be ready for that particular time. Every shot that they may need to make in the course of a tournament has been practiced repeatedly and regularly. Tee shots, fairway shots, approach shots, sand shots, and yes, even 40 yard benders out of the trees.

Earlier in the day, Louis Oosthuizen hit his own perfect shot when he double-eagled the second hole - the first ever on the second hole and only the fourth in Masters history, setting up the drama for the finish. And before that, Bo Van Pelt hit a perfect shot when he aced the par three 16th hole. But as incredible as some of these shots were, individual shots don't win the day - when you only win by a single shot, making every other shot is equally as important to the outcome. The difference for many of the top competitors that day was not the shots they made, but the shots they failed to make.

As riveting as the final holes and playoffs were, I found the interviews with the new champion equally compelling. Bubba Watson plays the game a little different than anyone else, choosing to rely on his own approach to the game, and indeed each shot, never having taken a lesson to learn

someone else's techniques. Does he think everyone else is doing it wrong? No, not all - he just understands that it's not right for him. He knows his own game, and he plays the game that he knows - in other words, he is playing to his strengths.

In the interview, Bubba shared his thoughts about his family. He had thought about withdrawing midway thought a previous tournament to be with his wife and newly adopted son, but after talking about it with his wife, he decided to finish before heading home. He ended up earning a nice pay check, finishing fourth, but the big takeaway for the rest of us to learn from was that he had his life priorities in order. This year, he has the title of "Master's Champion", but it's second to his lifelong title of "husband", and now "father" too.

There are many life and business lessons that can be learned from sports, and the 2012 Masters tournament was no exception.

It's June now, perfect golfing weather - time to get in a few rounds. Just think of it as working on your business while you are working on your game.

Paul Hogendoorn is founder of "TPI Associates", an organization dedicated to helping entrepreneurs and business leaders define and achieve their vision. He can be reached at [bogendoorn.paul@gmail.com](mailto:bogendoorn.paul@gmail.com).



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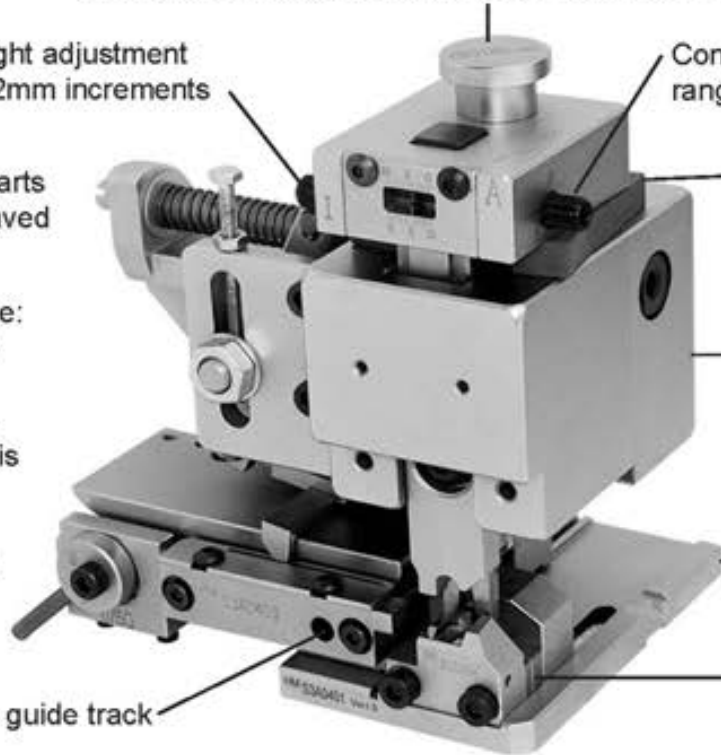
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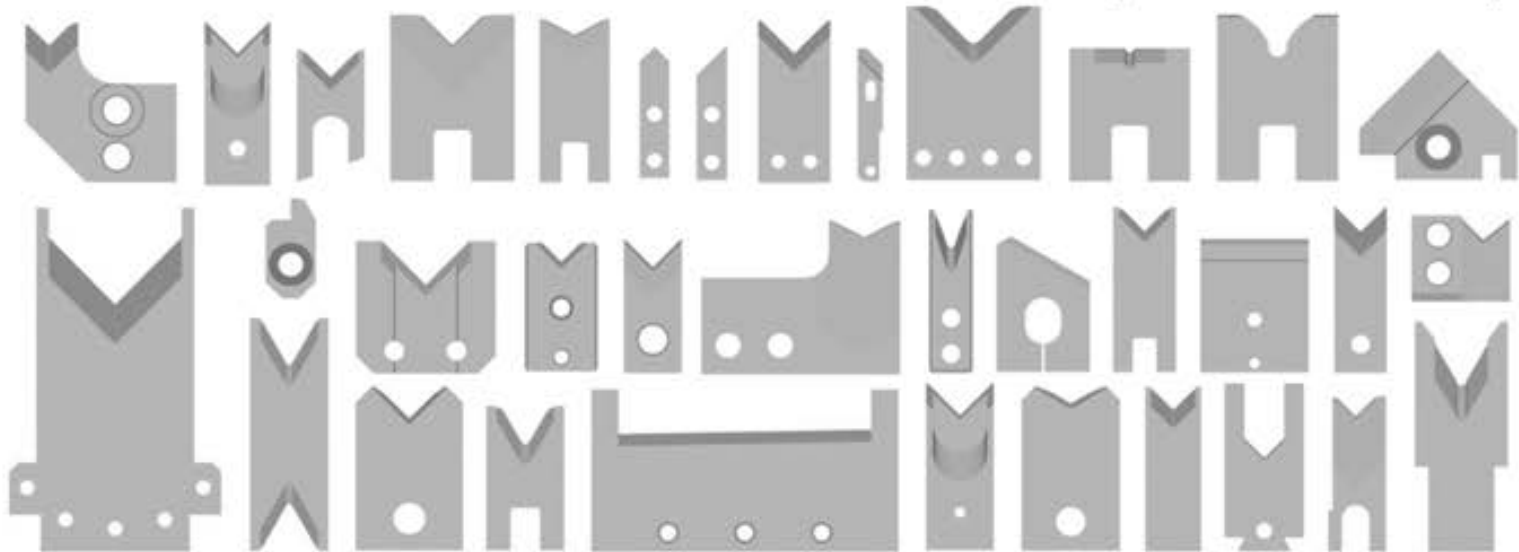
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# WHMA Conference

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criteria. The A-620A Standards are the only industry-consensus standards for requirements and acceptance of cable and harness assemblies. Full details on the standard can be viewed at [www.whma.org](http://www.whma.org).

Next up was Dave Bender, Director of Product Compliance for TE Connectivity. Mr. Bender's presentation centered on proper navigation of REACH, RoHS, and other regulations. The regulations he noted as most significant harness manufacturers in 2012 are China RoHS, WEEE, The EU Battery Directive, EU Energy Related Products (ErP), and other emerging customer specific requirements. One of the most astonishing slides of the day was Bender's depiction of the dramatic increase in global regulations since 2003.

Continuing the theme on regulation, Michael Wurzman, president and founder of RSJ Technical Consulting was up next. Mr. Wurzman is a leading expert in environmental compliance for manufactured products and outlined the emerging rules from the new Conflict Minerals legislation. *Wiring Harness News* did an in-depth interview with Mr. Wurzman on this legislation in the November/December 2011 issue. As was the case with this author, those in attendance seemed somewhat blindsided by this legislation and it's possible ramifications on the industry. It was no surprise that the Q & A portion of his presentation was quite spirited.

Rounding out the program highlights was a presentation by Martinez Hunter, who is

president and marketing co-director for the Atlanta Chapter of the Business Marketing Association. Hunter is also the Creative Director of Inbound Marketing at MLT Creative, an award winning B2B marketing agency. She extolled the virtues of peer-to-peer networking and learning through membership in the Business Marketing Association. The BMA is the world's premier community devoted exclusively to advancing the B2B marketing profession, and has local chapters in many states.

In addition to the educational sessions, attendees also enjoyed a golf outing at Champions gate on Wednesday, and a reception dinner sponsored by Cirris Systems and Schleuniger. Thursday's breakfast was sponsored by Anixiter and Daniels Manufacturing. A relaxing Lawn Party following the Thursday sessions was sponsored by IEWC and Southwire. Friday's Member/Exhibitor Breakfast was sponsored by YRC Worldwide, and was followed by the Best Practices Roundtables and the Board of Directors meeting.

Next year the WHMA Conference will be February 20-22, 2013, at the Renaissance Las Vegas Hotel. Please keep checking the WHMA site and *Wiring Harness News* for further details.

WHMA has agreed to make the presentations available to our readers. Go to [WHMA.org](http://WHMA.org) and click the 'About Us' tab. Leave a message on the 'Contact Us' tab, and they will provide you with a link.

~WHN~

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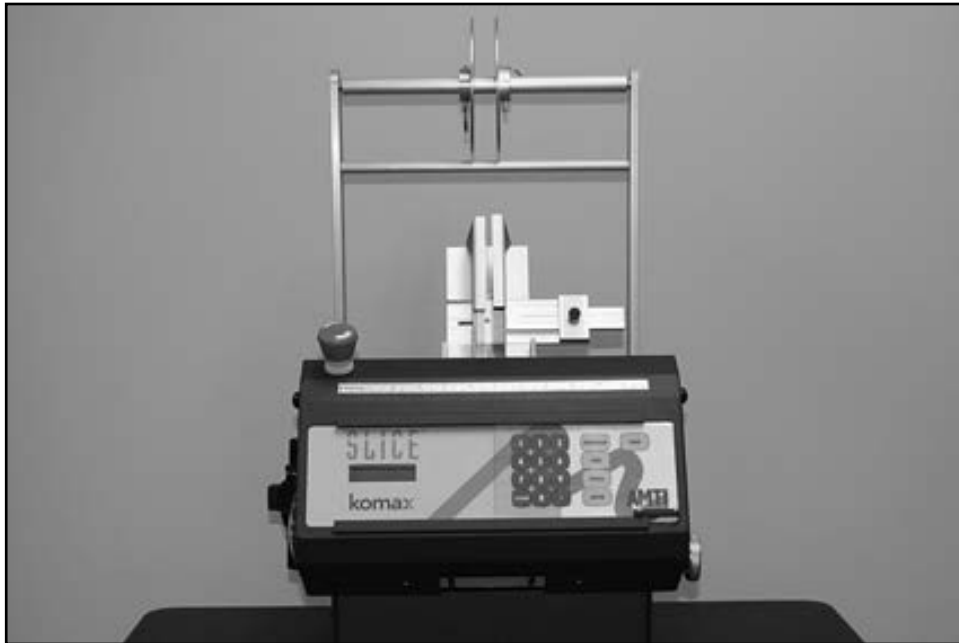


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# AMTI® and KOMAX WIRE Announce Marketing Agreement



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American Manufacturing Technologies, Inc. (AMTI®), a leading manufacturer of the “SLICE” precision cutting machines and the “SHRINK” conveyor oven, today announces a sales and marketing agreement with Komax Wire, North America.

The agreement covers the sales, marketing, distribution and servicing of AMTI® benchtop cutting machines in the United States and Canada. AMTI® equipment is universally used across industries to cut heat shrink tubing, con-

volved tubing, insulation materials, hose, wire as well as multi-conductor and flat ribbon cable.

“This is an ideal addition to the Komax line of multi-station and benchtop wire processing solutions,” according to Tim MacAlpine, President of Komax Wire, North America. “We expect our customers will be pleased by our ability to support these additional lines throughout the entire continent.”

*Continued on page 10*

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# AMTI® and KOMAX WIRE

Continued from page 9

As a longstanding representative and reseller of both Komax and AMTI machines, Bucky Mueller of Tri-Tech Machines Sales in New Berlin Wisconsin, states: "We could not be happier with this news. Komax and AMTI are industry leaders that complement each other extremely well".

Established in 1990, and now part of 7Mile Solutions Companies, AMTI® designs, manufactures and supports these products from their vertically integrated manufacturing facility in Niles, Illinois. Their facility houses a fully-equipped machine shop, electronics lab, and utilizes AMTI's newly released LEAN MACHINE™ production cell workstation

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Both Komax and AMTI® exhibited at the Wire Processing Technology Expo at the Frontier Airlines Center, Milwaukee Wisconsin.

AMTI's products are sold in 28 countries throughout Europe, Latin America, Asia, and Africa as well as the United States. The "SLICE" benchtop product line of precision cutting machines and the "SHRINK" conveyor oven are continually evolving to meet the growing needs of the assembly marketplace.

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Continued from page 1 \_\_\_\_\_

survey the fleet, and query the program offices to identify where we have gaps between requirements, and what is currently available. There are also instances where we simply do a market survey to see what emerging technologies are available, and determine if there's a viable insertion (of these technologies) in the navy operational concept.

**WHN:** How do you begin to formulate the actual SBIR?

**Vetter:** Once we select the topic, we go ahead and refine the requirements and put out what we think is a pretty good statement of what we are looking for. Unfortu-

nately, we are space limited as to how much description we can provide, so any refinement of the topic will take place after the Phase I award.

**WHN:** What happens once the solicitation goes out?

**Vetter:** When we put the solicitation out, there are two periods of feedback. One is an open period where someone can call me on the phone and ask a question. I can informally answer them, and any discussion simply takes place between me and that company. The second is the closed period, and this is where it draws closer to the proposal submission date. At that point, they actually have to submit a question in writing, and my

response would actually go out to all potential companies. So if they're trying to protect something proprietary, they may not want to wait until the closed period because my response will go out as public record.

**WHN:** What are the basic things you look for when you evaluate submissions?

**Vetter:** As we begin to receive solicitations, we really look at three areas. First we determine if there is technical merit to the proposal. We then determine if the researcher (proposing company) has the right business qualifications and is otherwise qualified. Lastly, we determine if there is good commercialization potential.

### Technical Merit

For technical merit we look at whether the proposed concept is technically feasible. Can it actually be produced in the physical realm, and is it something that we can actually evaluate to demonstrate a result?

Next, the concept has to be novel. It can't just be a minor evolution of something that already exists. It really has to be a new concept. Also, does the topic actually address what is listed in the solicitation? A lot of times we will have someone propose what is essentially a partial solution. And for those, if we don't see it as being a benefit for the majority of what we are asking, we are hesitant to pick it up.

The last thing is, will it work in the navy environment? Some small businesses lack the relevant experience with aviation, or navy aviation specifically. They may be unfamiliar with our maintenance concepts or the operational environment the aircraft flies in. We are not operating in a temperature



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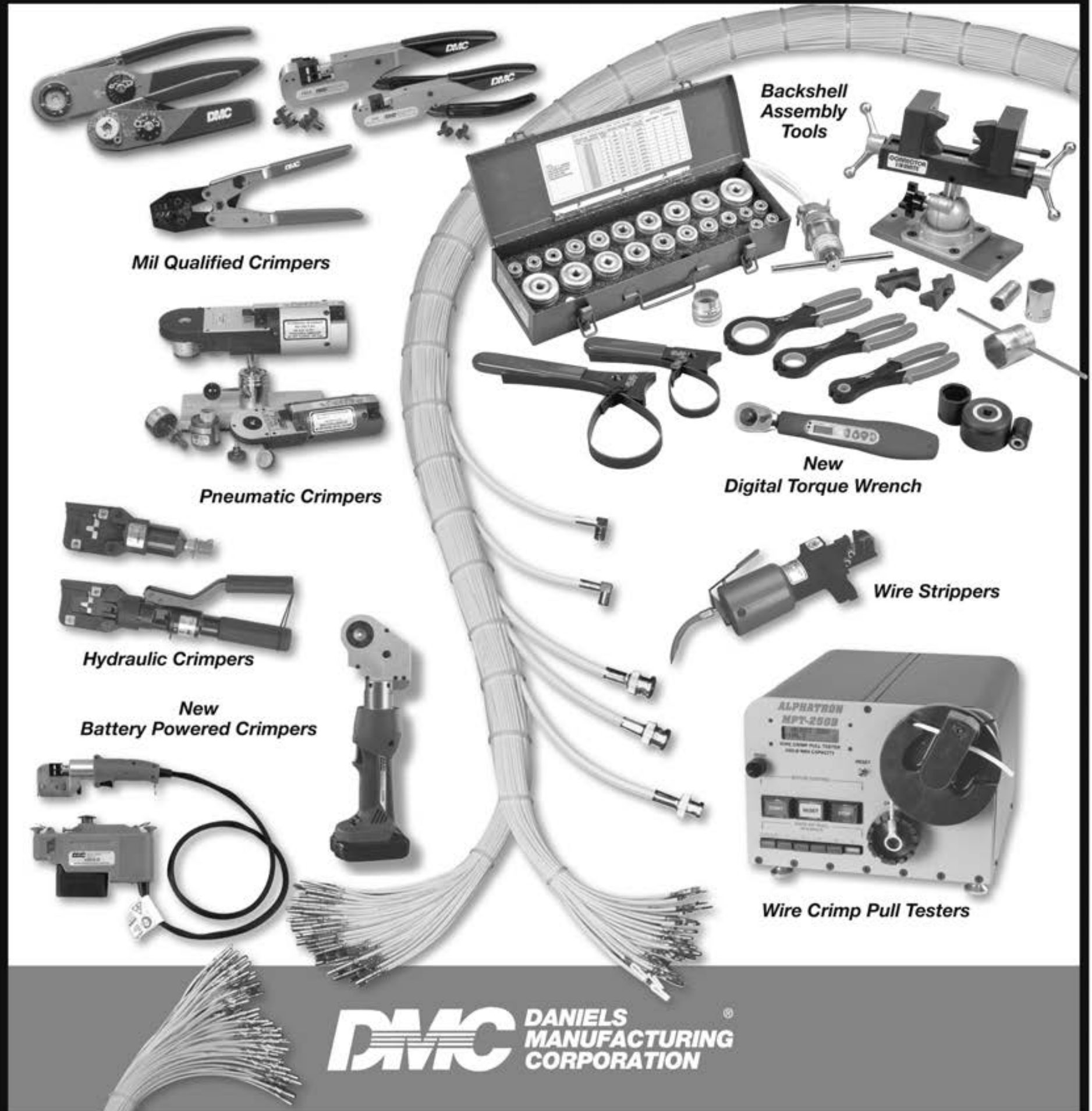


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# Further Decoding the SBIR Grant Process

Continued from page 12 \_\_\_\_\_

controlled clean room. It's hot, its cold, its dirty, its noisy, and it has EMI constraints. We try to get those listed in the solicitation up front but when (there is) doubt, it's something we definitely could clarify after the solicitation goes out.

## Business Qualifications

For personnel qualifications, we don't need PhDs in subject or anything like that. We are really looking to make sure that, either by the attached resume or prior project experience, they have a familiarity with the concept they are

proposing, and the right labor mix to actually execute. If we are looking for some new material product, having just an electrical guy working on it probably is not the best fit. So we try to be aware of the expertise they bring to the table as a small business.

Beyond that, if they can produce in house...great. If not (they) just need to outline the production plan. If (the company) has an endorsement with either a prototype or larger scale manufacturer, that's fine, but it needs to be put in the plan as an endorsement letter. There really is no funding requirement for part-

ners. They don't have to be kicking in matching funds or anything like that for the phase one period.

## Commercialization Potential

The last thing we look for is the commercialization potential, and it's a bigger deal than I guess most companies think when they write proposals. It can be the greatest technical proposal ever, but if it there's no way to actually get it procurable (on a commercial basis), then it's not helping us much. So what we really look for is a road map where the company would actually see a return on investment from the commercial sector

beyond SBIR funding. It's very hard for us to justify 100% of R & D funding unless there is a specific Navy ROI and we can really benefit from. Certainly dual use technology is encouraged, unless it's ITAR restricted. For wiring, we haven't hit that yet. It's all general series wiring and most of our stuff works in conjunction with (the) SAE aerospace committee; so pretty much everything we do would also be applicable to commercial aviation. We are basically looking to make sure companies have a plan to get it out as a viable product; versus using this purely as a research.

**WHN:** What are some of the common mistakes you see in proposal submission?

**Vetter:** One of biggest is an incomplete technical proposal. We see (instances) where they are not really addressing all the major aspects of what we are looking for. You have to read the solicitation! Another common mistake is that the solution is not feasible due to cost limitations. It can be a great technical solution, but if it is cost prohibitive, we kick it out. The only exception would be if there is a justifiable ROI. If (the solution) is going to double my cost but quadruple my reliability, it might end up being cheaper for the Navy.

The other big thing we often see is the company really doesn't understand the navy environment. They will propose something on an aircraft that uses banned materials or something flammable or toxic. This really relates more to wiring as we have a set of requirements that are pass/fail. It's not a situation where you can increase a level of performance. It must meet (our standards) or we can't fly it because it's not safe. Also, if it's something like a tool, it has to be easy for the maintainer to use. We look for ergonomics and simplicity. And these things don't have to all be worked out in Phase I. We don't expect a full blown product. We just want a road map to get something that will meet all the environmental requirements.

The other common mistake is not defining the work that is actually going to be performed. We want to see it broken down into



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a manageable task structure. The rule-of-thumb is basically 30 days or less per task. If you just have one big block that says 'I'm going to build the entire thing in six months,' it's very difficult to manage and monitor. And we're not even looking for something as fancy as Gantt chart; we're happy with a simple paragraph defining each task. We need to have a sense that you have a handle on how you're going to manage the work to make it achievable. This will greatly impact our decision for picking you up for Phase II.

**WHN:** Do you ever award more than one company to an SBIR?

**Vetter:** We have had more than one company picked up for Phase II. It really depends on the quality of the Phase I work, and the need for the process improvement. If I have a high performer that is high risk, and an 80% performer that is low risk, the program office would have the power to endorse a second source. This is not the rule, but it has happened.

**WHN:** What training is available to help companies navigate the SBIR Process?

**Vetter:** There is no formal training program at NAVAIR for Phase I. There is a website (Navy SBIR.com) where companies can go. It walks you through the solicitation and submission process, and it is also where you would actually upload your proposal. We list all the selected Phase I awards there as well.

Once you reach Phase II, within the first year the company is invited to participate in the Navy TAP (Transitional Assistance Program.) There is a contractor agency called Dawnbreaker (www.dawnbreaker.com.) They review business strategy with Phase II companies. They also host an annual conference that showcases select SBIR companies. Basically it's a forum for the company and the program sponsor to get together along with other potentially interested parties. They do a brief on their topic and can schedule meeting time with potential sponsors. There is also booth space available to highlight the overall company.

**WHN:** Any final thoughts as companies begin to navigate the SBIR process?

**Vetter:** I know I discussed defining realistic labor estimates, but I don't want to scare a single person or small team from submitting their best solution. As long as you identify your limitations and give us a detailed plan for addressing them; you should be good to go. We're not going to penalize someone for having a small team.

Lastly, and I cannot stress this enough, if you have a question during a solicitation, call us during the open period. It's the number one mistake we see as we do reviews with companies we don't select. During that conversation we typically hear 'oh, if only I knew this I would have proposed something else.'

~WHN~

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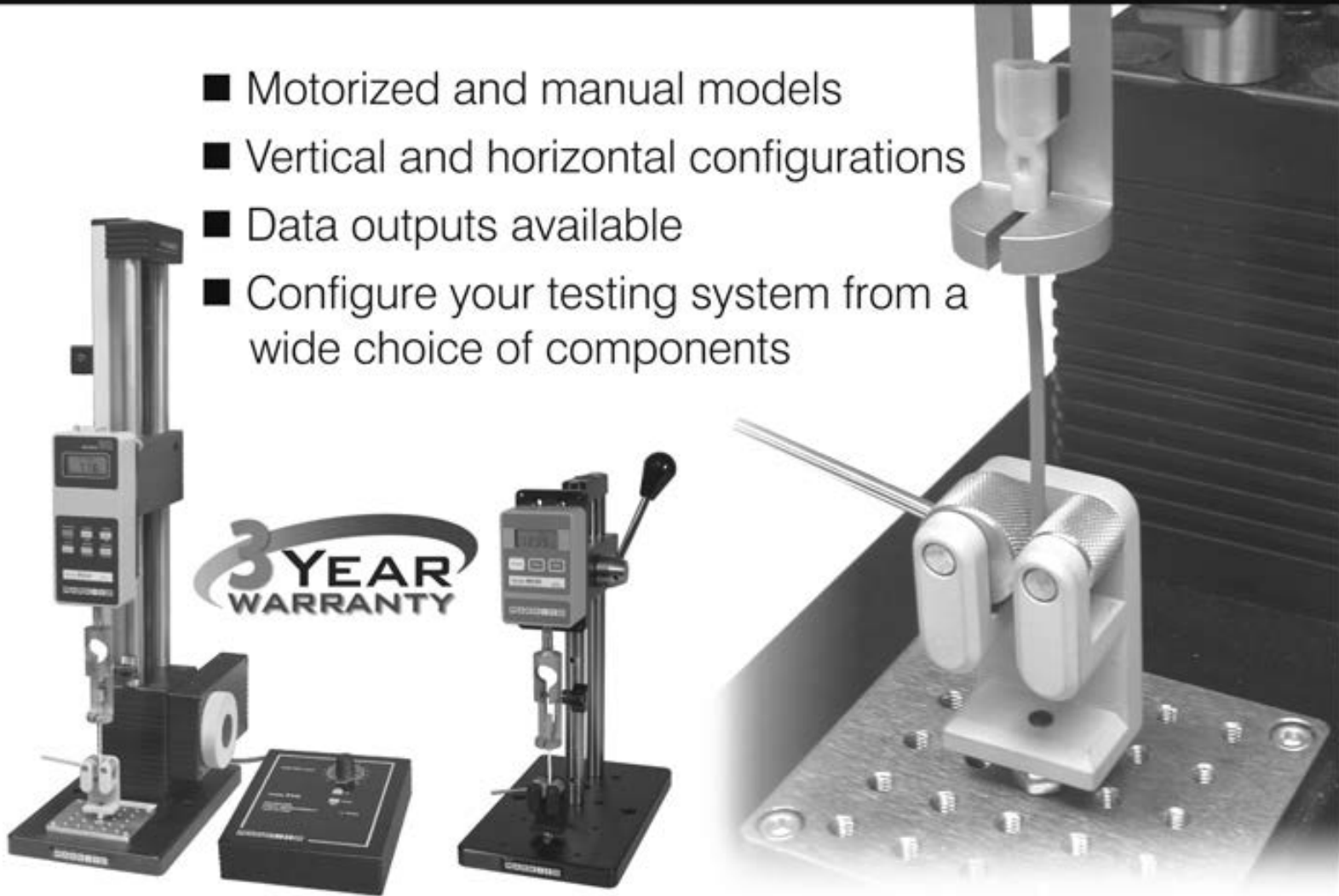
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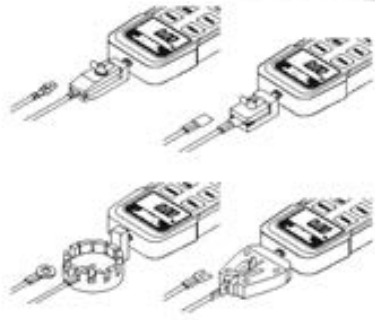
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# Galaxy Wire & Cable

Continued from page 1

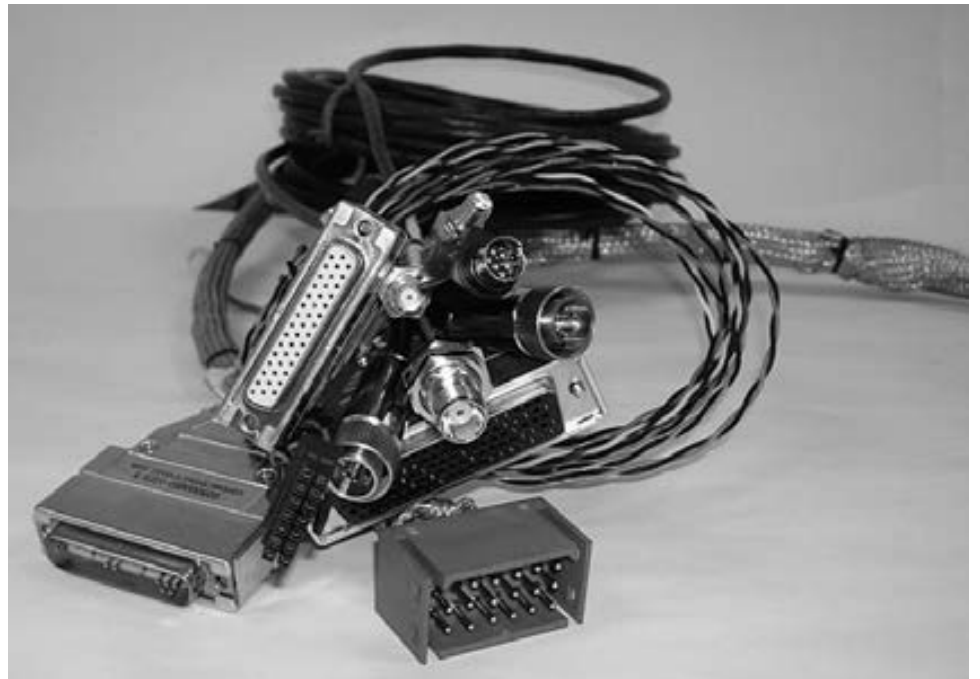
Although Stussy did not elaborate about her plans, she is so keen on analyzing trends because she kept GWC going after the economic downturn after Sept. 11, 2001, and the early years (2008-09) of the last economic downturn. "I looked around the curve prior to that and grew the production department to get us through that really rocky time," she said.

"What we can embrace is that if we stay stagnant we will not be here because things change so quickly," Stussy

said. "We have to be able to change, and we have to constantly be aware of change. I know that Galaxy will always be here, but I don't know exactly what we will be in five or 10 years."

By that time most likely Stussy's involvement will be limited or even non-existent as she anticipates retirement. Her daughter Nicole Lutz and son-in-law Eric Lutz are following in Stussy's footsteps, and eventually the couple will own GWC.

Nicole, 32, began at the firm 10 years ago and is its vice president of sales and operations. Eric, 39, joined GWC seven



Galaxy Wire & Cable consists of 70 percent custom cables and wires and distribution and 30 percent harnesses and assemblies.

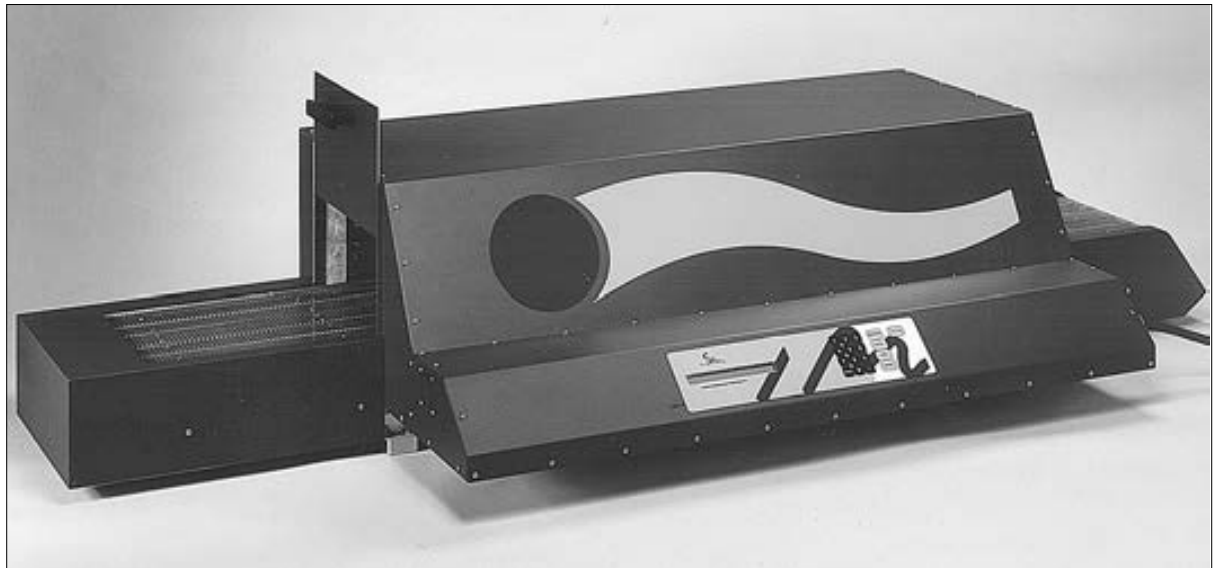
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years ago and is VP of the harness and cable production division, which was started eight years ago.

Before 2004 Stussy concentrated solely on selling custom wires and cables because they were her career specialty. "Custom cable was our bread and butter," she said. "That's the way it was and still is." However, producing harnesses and cable assemblies enables GWC customers to do "one-stop shopping that cuts out the middlemen," she said. "Who knows wire harnesses and cable assemblies better than wire and cable specialists?"

GWC consists of 70 percent custom cables and wires and distribution and 30 percent harnesses and assemblies. Stussy said her company has several hundred regional and national customers, and some have been with her since she entered the industry and since starting GWC.

"We like working at the engineering level because we can make suggestions

and substitutions that are valuable to customers on lots of assembly and harness jobs," Stussy said. "We have lots of options to suggest to engineers because we know wire and cable. That's where the fun is, and we learn something new every day.

"If something goes awry, we damn near kill ourselves to make it work," Stussy said. "When we sit down as a management team and think about it, we are awesome. It's an amazing process to watch. We make something from nothing and weather a storm. It's nice to see things click like that."

Key managers are Ted Borowski in accounting, Bernie Leikums in quality control and John Zangara in production. The administrative staff numbers 7-8 and production 13-14. The total has been as high as 30, depending on customer contracts.

*Continued on page 18*

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# Galaxy Wire & Cable

Continued from page 17 \_\_\_\_\_

Two salespeople are complemented by manufacturers reps in New England, Maryland, Virginia, New Jersey, Pennsylvania, Delaware, New York and Colorado. Up to two salespeople will be added this year. Accounts also are handled by Stussy and Nicole and Eric Lutz.

Stussy described the GWC working environment as "very laid back. I run a tight but easy ship," she said. "Do your job, and

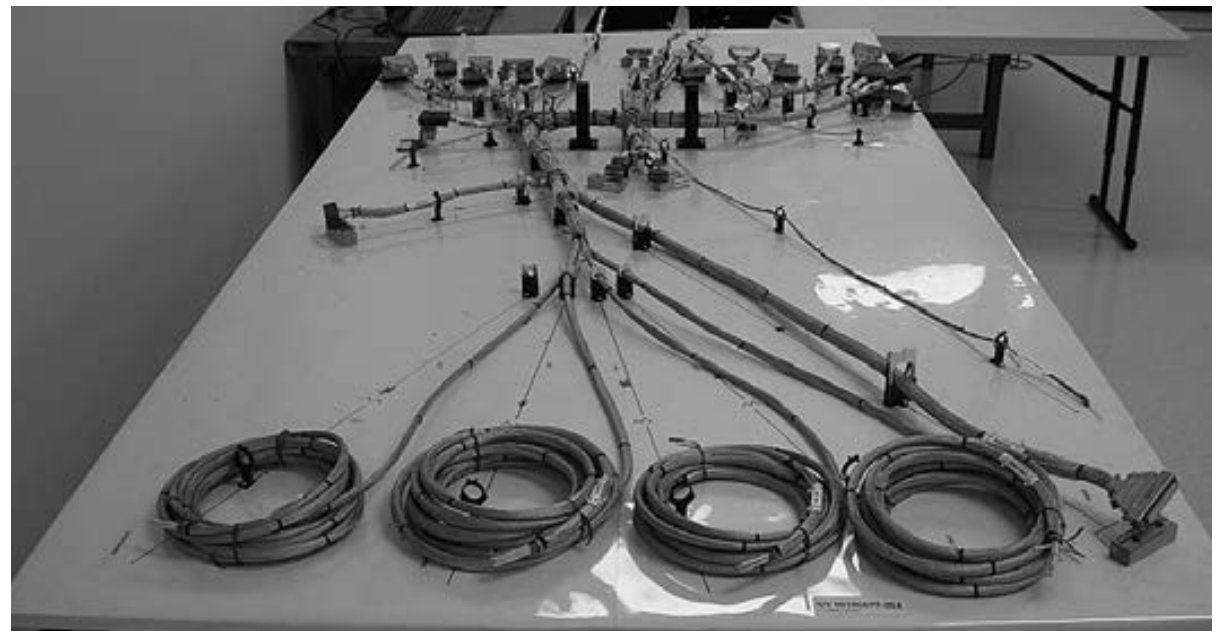
do it right. That's all I ask. I am not a micromanager."

Employees, all on one shift, receive a standard compensation package that includes most of their health insurance paid, a 401(k) match and pay for holidays, vacations and sick days. Bonuses are based on company and employee performance, with emphasis on the latter.

"I take that I have employees very seriously," Stussy said. "We have to be kind and courteous and take care of each other. This

isn't just a job. We live with each other, so we have to do things the right way. Of everything, I'm most proud of my daughter and son-in-law and the fact we're still here after 17 years, which is due to good people."

Products are made for such industries as robotics, homeland security, military, law enforcement, lighting, sound, aviation, telecommunications and computer. No one sector makes up more than 10-15 percent of GWC's total business.

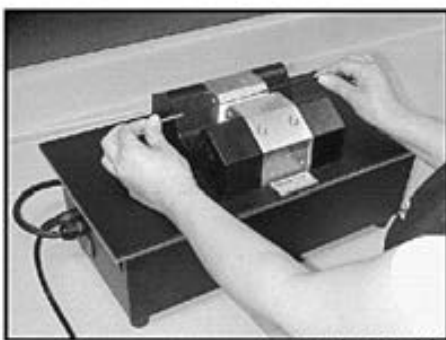


FAA approved harness built in multiple configurations.

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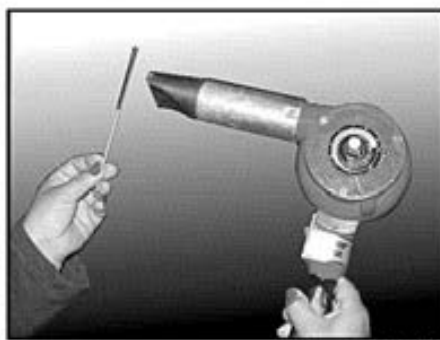
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- Long Life / Rugged Design

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**Focus-Lite™**  
Heat Shrink Processing Machines



Quality surpasses 99 percent and is maintained by adhering to IPC/WHMA A-620 standards and Federal Aviation Administration and military specs as appropriate.

"We will make one piece up to as many as we can handle," Stussy said. "A nice order would be 5,000 spread out over a year or 600-1,000 a month."

The simplest product is a wire 3-12 inches long (up to 20 feet) that has been cut, stripped, tinned and/or terminated. The most complex is a harness for an aircraft that has 1,200 points and requires 65-70 hours to build. "The more complex, the better we are," Stussy said. "Our employees have lots of experience, and they're very skilled."

A Schleuniger Crimp Center 67 was purchased last year. "It's made us competitive in areas we weren't competitive before," Stussy said. "We automate whenever we can."

Value-added services are adding a bar

code, braiding, dyeing, kitting, labeling, printing, striping and twisting. They are done in a leased facility covering 9,000 square feet in an industrial park where GWC always has been. For more space, an additional suite is available, which may be necessary because Stussy foresees starting an engineering department.

The production floor has a 42-inch screen that displays the same information as computer desktops so orders may be checked at any stage. Additionally, production meetings are held frequently, particularly to address fluctuations in processes and products.

"We monitor every item on a daily basis for process control and improvement," Stussy said. "It's amazing how

processes improve when you watch them." She added that extensive procedures are in place for documentation, control and testing for every phase of an order at GWC.

Quality, which surpasses 99 percent, is maintained by adhering to IPC/WHMA A-620 standards and Federal Aviation Administration and military specs as appropriate. Each piece, which has traceability down to every component, receives first-article approval, a visual inspection and a continuity test. GWC is starting the ISO certification

process in the second half of this year.

Flexibility is necessary to accommodate customers' varying lead and delivery times. "There's no rhyme or reason to any customer or any day here," Stussy said. "Every order is unique, and every new customer is unique. In today's world nothing is fast enough for anybody. We treat everyone equally, though."

Based on the last few years, GWC is a shining star in the wiring harness and cable assembly universe. In 2010 the

*Continued on page 20*

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# Galaxy Wire & Cable



The recent purchase of a Schleuniger Crimpcenter 67 significantly cut down on time and increased quality.

Continued from page 19

company grew 25 percent and last year 30 percent, going from \$3 million to an estimated \$7 million at the close of 2012.

Stussy predicts \$10-12 million by the end of 2013 due to larger orders from core customers, up-selling others and more efficient production. She added that some customers are outsourcing previous in-house processes.

"The considerable growth we've been going through has been a monumental undertaking in terms of logistics and personnel," Stussy said. "We had a couple of stumbling points on some things, and we put a lot of money in

infrastructure. So, going from \$7 million to \$10 million should not be as difficult because we already have the infrastructure in place without making major changes."

Stussy will oversee the company as it grows, but Nicole and Eric Lutz are handling more of the management. Already Stussy takes care of her two grandchildren two days a week, and she plans to be fully retired in 5-6 years or sooner.

For more information, call 215-957-8714, fax 215-957-8717, e-mail [eric.lutz@galaxywire.com](mailto:eric.lutz@galaxywire.com), visit [www.galaxywire.com](http://www.galaxywire.com) or write to Galaxy Wire & Cable, 903 Sheehy Dr., Suite E, Horsham, PA 19044.

~WHN~



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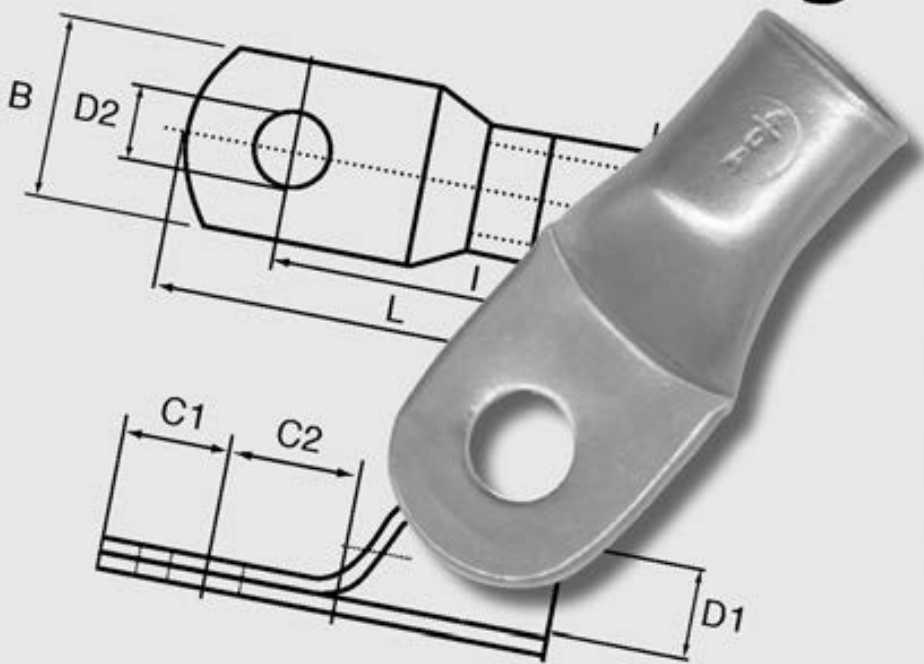
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These connectors use one-piece shells which eliminate the need for a backshell, thereby providing a number of benefits; including an improved EMI/RFI performance, lighter weight of the resulting components and a shorter overall length of the connector.

These integrated backshell connectors are available with RoHS Compliant finishes, and are available in the following connector series:

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- MIL-DTL-26482 Series 1 & 2
- MIL-DTL-38999 Series I, II & III
- Reverse Bayonet (VG95234)

For more information, go to [www.spacecraft.com/intbackshell](http://www.spacecraft.com/intbackshell)

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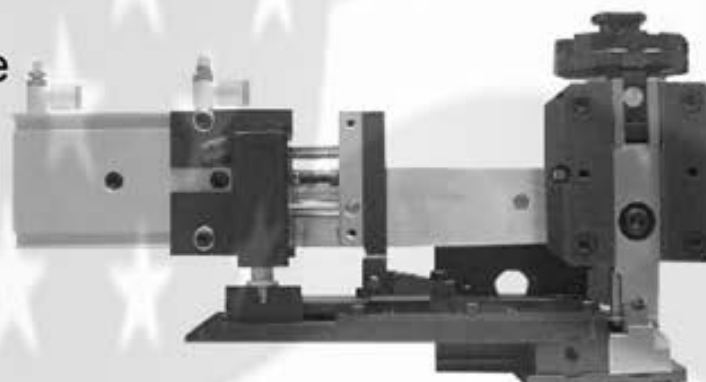


Model 1700



Model 2000

Pneumatic feed mini-style applicators can accommodate terminals with center to center distances up to 2 inches.

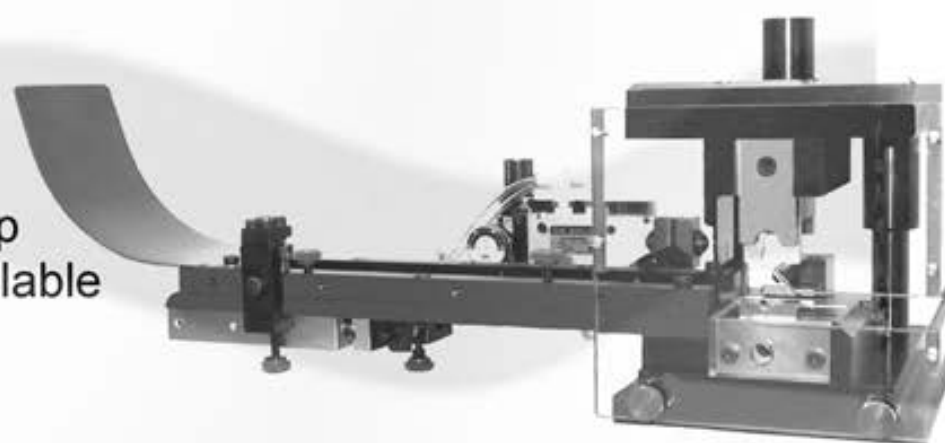


Model 1500



Model 2100

DSA applicators are designed for large terminals manufactured from heavy gage material with center to center distances up to 3 inches and widths to 3.5 inches. Available in left to right, right to left and rear feed configurations.



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**NEWS PLUGS**

**Electronic Connector Corporation Remains in Chicago**

Eclipse Embedded Technologies has completed the acquisition of Electronic Connector Corporation (ECCO) from ARRIS Group, Inc. This acquisition, as a portfolio investment for Eclipse Embedded Technologies, allows ECCO to continue to operate in its Chicago headquarters and support a vast customer base throughout North America and Europe. ECCO will benefit from Eclipse's design and sales organization in addition to the talent of its executive leadership.

"This is a great opportunity for our customers and suppliers and will bring additional new skills in demand creation, marketing, and value added capabilities to our team," said Chief Operating Officer Chuck Engvall. Along with Engvall's 30 plus years of leadership experience, ECCO will benefit from the distribution experience of Eclipse founder, Bernard Gizzi. "The financial stability and industry tenure of ECCO is impressive," stated Gizzi. "Going forward, I will be working with Chuck to support the further growth of the company as we meet the ever increasing needs of our customers and suppliers for new product design, innovation, and business expansion."

The business will continue operating under the ECCO brand and remain committed to quality service



**Eclipse Founder, Bernard Gizzi**

as a connectivity solutions distributor serving customers in the Military/Aerospace, Medical, Industrial, and Transportation industries.

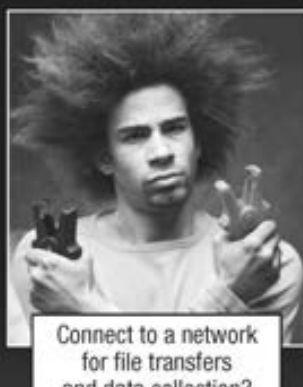
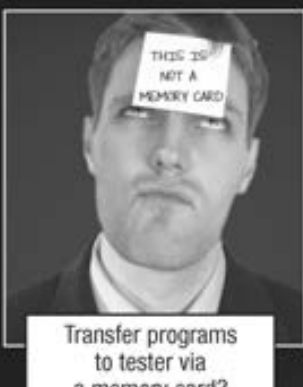
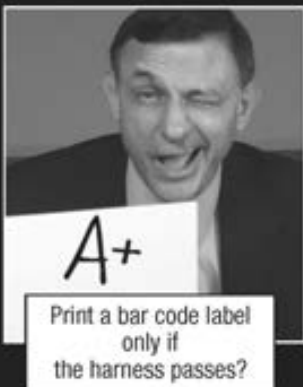
ECCO specializes in connectors of all types and maintains an extensive inventory of connectors, components, contacts, accessories, and tools to meet customers' immediate and scheduled requirements. Please visit us at [www.eccochicago.com](http://www.eccochicago.com).

ARRIS is a global communications technology company specializing in the design, engineering and supply of communications and IP technologies that support broadband services for residential and business customers around the world. The company supplies broadband operators with the tools and platforms they need to deliver and monitor advanced video, data and voice subscriber services, including whole home video across multiple screens, ultra high-speed data, personalized advertising and carrier-grade telephony. Headquartered near Atlanta, in Suwanee, Georgia, USA, ARRIS has R&D centers in Beaverton, OR; Chicago, IL; Cork, Ireland; Kirkland, WA; Redwood City, CA; Shenzhen, China; State College, PA; Tel Aviv, Israel; Wallingford, CT and Waltham, MA, and operates support and sales offices throughout the world. Information about ARRIS products and services can be found at [www.arrisi.com](http://www.arrisi.com).

**Pioneering CeeLok Fast-T Connector System Features Field Terminable, Crimp-Snap, 10GB Ethernet Technology**

TE Connectivity's new CeeLok FAS-T connector system is the most rugged, small form factor, 10 Gigabit ETHERNET, field terminable I/O connector in the Aerospace, Defense and Marine

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marketplace. The CeeLok FAS-T connector easily meets today's high speed signal requirements and the expected 10 Gb/s speeds needed in the future. This exciting new connector features crimp-snap contacts that enable easy termination and field repairability. Additionally its unique, integral backshell with 360-degree shielding our single-piece design drives down weight and cost, while significantly improving overall system performance.

"The CeeLok FAS-T connector provides an easy to terminate, high-speed/bandwidth interface that delivers on the demand of Size Weight and Power (SWaP) reduction, without compromising upon ever-increasing performance needs," said Earle Olson, business development manager, Global Aerospace, Defense & Marine, TE Connectivity. "This new small format, field terminable connector empowers a wide cross-section of industry applications from in-flight applications for both commercial and military platforms, as well as ground-based and marine-based needs."

The connector's small form factor (Shell Size 8 - 0.750") utilizes a panel cutout of .698" (diameter) while maintaining outstanding signal integrity thanks to the patented T-shaped pin pattern that provides noise cancellation and decoupling to minimize cross talk. Additionally, the CeeLok FAS-T connector has been designed to easily survive harsh environments in military, commercial aerospace and marine/offshore applications.

The CeeLok FAS-T connector is a true 100 Ohm impedance connector that is compatible with Cat5e, Cat 6a and various other protocols ranging from the traditional 90 Ohm USB 2.0 to the more widely used 110 Ohm IEEE 1394 "fire wire." Available in both cable-applied and printed circuit board varieties, the CeeLok FAS-T connector uniquely provides a means of transmitting high speed signals from the printed circuit board to system peripherals without sacrificing speed, panel space, or environmental performance.

Associated products that complement the new CeeLok FAS-T connectors are available and include band straps, termination devices, molded boots, wire and cable and complete harnessing capabilities.

For more information on TE's CeeLok FAS-T connec-

tors and associated products, contact the Product Information Center at (800) 522-6752 or visit [www.TheFutureUnleashed.com](http://www.TheFutureUnleashed.com).

CeeLok FAS-T, TE Connectivity and the TE connectivity (logo) are trademarks of the TE Connectivity Ltd. family of companies.

**K-Sun Corporation Exhibited in Nation's Largest Wire Processing Event**

Sun Corporation was among more than 100 exhibitors at the Electrical Wire Processing Technology Expo held at Milwaukee's Frontier Airlines Center May 9-10.

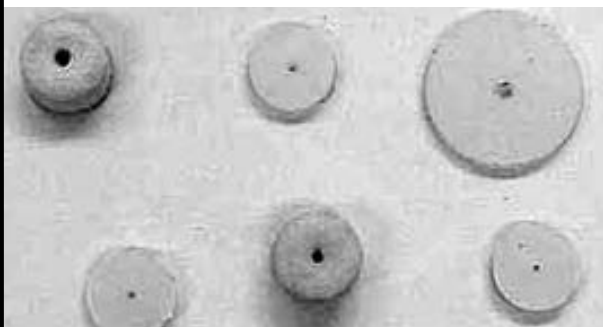
K-Sun showcased its label printers, label makers and labeling machines, including the new GREEN MACHINE®, an eco-friendly and technologically advanced label printer system that has received

numerous accolades in new equipment competitions.

K-Sun will also exhibited new labeling supplies designed specifically for the wire/cable market, including White on Black Heat Shrink Tube, Black on Reflective Yellow, Black on Reflective White, Strong Adhesive in Black on White and Black on Yellow plus new sizes of Black on Photoluminescent and Black on Orange.

Founded in 1978, K-Sun Corp. offers a line of exclusive stand-alone and PC-compatible electronic label printers, software and supplies used in wire/cabling, laboratory, hospital, industrial, manufacturing, research, safety, law enforcement/EMS, engineering, construction, utilities, energy, transportation and other industries plus offices, warehouses and shops across the world.

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## Wire Terminal Pull Testers

### Motorized WTTM-110/220



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#### Two motorized models offer

- **7 selectable pull speeds** from 1 inch per min (25 mm per min) to 10 inches per min (250 mm per min).
- **2 capacities:** 100 lb/50 Kg/500 N for wire sizes AWG 12 to 28 and 220 lb/100Kg/1000N for wire sizes AWG 8 to 28.

### Manual WTT-110

**The WTT-110 is easy to use:** Simply insert the wire into the appropriate slot in the terminal fixture (12 slots accommodate a wide range of sizes). Select the Peak-Hold or Continuous Measurement mode via the keypad. Then rotate the easy-glide lever clockwise, clamping the wire and creating a consistent, repeatable pull force with minimal effort.



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CHECK•LINE'S® WTT Wire Terminal Pull Testers accurately measure the pull-off force on soldered and solderless wire terminals. These all in one solutions don't require additional grips, fixtures or accessories.

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Rotating fixture has slots of different widths to hold various materials.

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For more information, contact Andrew Kaner, Product Manager, at 1-800-645-4330, 1-516-295-4399 (fax)

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## NEWS PLUGS continued



More than 100 colors and sizes of K-Sun LABELShop® tapes are made of a durable polyester base with an industrial-grade acrylic adhesive. Heat shrink tube is made from an industrial-grade polyolefin base material. LABELShop® tapes and shrink tube materials are designed to be printed with the durable resin thermal transfer ribbon process for UV, scratch, fade, chemical and smear resistance. All tapes have been tested to withstand extreme temperatures (0°F - 302° F/150 C), outdoor conditions (10-year life in direct sunlight), abrasion and pressure.

Tapes are flexible for curved surface labeling, and adhesive can adhere to itself for wire tabbing/flagging. The tapes comply with ANSI/TIA/EIA-606A standards and shrink tube materials complies with UL 224, mil-w-23053/5 class 1 and 3 and mil-IR 46846 type V ratings. K-Sun also carries iron-on fabric labels and self-laminating overwrap for wire/cable application. Cartridges are recyclable through K-Sun, and a portion of the cartridge housing is made from recycled plastic.

For more information contact K-Sun at 800.622.6312, visit [www.ksun.com](http://www.ksun.com) or email to [info@ksun.com](mailto:info@ksun.com).

### T&B® Fittings High-/Low-Temperature Liquidtight System Provides Moisture Protection in Extreme Temperatures

The T&B® Fittings High-/Low Temperature Liquidtight System from Thomas &

Betts protects electrical cabling from moisture in extreme temperatures: from minus 60 to 150 degrees Celsius (minus 76 to 302 degrees Fahrenheit). The System combines high-temperature rated thermoplastic Liquidtight fittings and ATX Flexible Metal Conduit, which has a thermoplastic rubber jacket designed to withstand temperature extremes.

"The combination of Liquidtight fittings and ATX Flexible Metal Conduit make the T&B® Fittings High-/Low-Temperature Liquidtight System ideal for demanding environments," said Tony Kolznak, product manager for Thomas & Betts. "The system provides reliable operation in industrial ovens, boilers and furnaces, kilns, and heavy machinery, as well as in sub-zero environments."

The system includes HT Liquidtight Fittings, available in straight, 45-degree and 90-degree configurations, and ATX Flexible Liquidtight Conduit. All fittings in the system feature double-beveled sealing rings that are manufactured of high-temperature rated thermoplastic. ATX Flexible Metal Conduit is able to withstand



T&B Fittings High-/Low Temperature Liquidtight System

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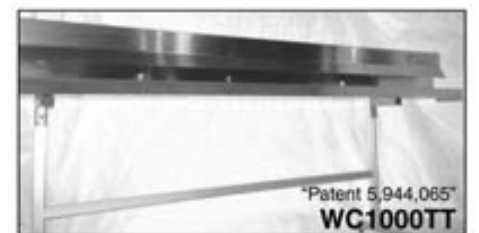
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extreme temperatures with its construction of a standard core and a thermoplastic rubber jacket. Containing no halogens, the thermoplastic material has a flammability rating of UL 98-HB.

Among the fittings' other features are Safe-Edge® Ground Cones that are designed to provide superior bonding, stronger pullout, easy threading and conductor protection. Fittings for the T&B® Fittings High-/Low- Temperature Liquidtight System comply with UL 514B and are available in 53® Series Fitting design.

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For more information about T&B® Fittings High-/Low-Temperature Liquidtight System, visit [www.tnb.com/shared/docs/high\\_low\\_temp\\_ltfittings.pdf](http://www.tnb.com/shared/docs/high_low_temp_ltfittings.pdf) or call (800) 816-7809.

#### Allied Adds Reps in Pennsylvania, New Hampshire, and Nevada

Allied is proud to announce the hire of five new sales representatives: Don Houck, Kyle Bechter, Ruthann Simpson, Buck Nicolai, and Bill Stecchi. Three will join Allied's Pennsylvania headquarters; one, the New Hampshire office; and one, the Nevada location.

Both Don Houck and Kyle Bechter have solid foundations in the wire and cable industry. Houck, the newest addition to the Las Vegas branch, has over 17 years of experience in the voice, data, and security market. He has worked with contractors, end-users, and distributors, and has a comprehensive understanding of the needs of each group. Houck's recent positions include Sales Manager at JCH Wire and Cable, Core Commercial Account Manager at ADT, and Low Voltage Sales Manager at Codale Electric Supply. Although he specializes in voice, data, and security cable, he has taught training courses on the identification, construction, and usage of all types of wire and cable.

"I embody the motto 'teamwork makes the dream work' in all aspects of my life," Houck says, "At Allied I have experienced a truly familial atmosphere where everyone has a single focus and goal; create long lasting customer relationships through extraordinary customer service. The willingness and effort of everyone to assist each other in achieving this goal is a main

reason I joined the team."

Kyle Bechter has spent over two years in the wire and cable industry at Omni Wire & Cable. He graduated West Chester University in 2009 with a degree in Business Management, and began working in sales soon after. Of his move to Allied, he says, "I am extremely excited to work with such a successful and driven team where humility is the core value." Bechter will join Allied's headquarters in Collegeville, PA with Buck Nicolai and Ruthann Simpson.

Nicolai comes from a family with a history in wire and cable, and he looks forward to joining the industry himself. He is a 2010 graduate of Temple University where he studied broadcasting and telecommunications. Nicolai most recently worked as a recording engineer at Sine Studios, so he will be able to provide a

wealth of knowledge to customers looking for broadcast and multimedia cable.

Ruthann Simpson has over seven years of sales experience at Remcon Plastics. While at Remcon, she handled all of their proprietary products, in addition to working with independent sales reps, trade shows, and customer service.

In New Hampshire, recent graduate, Bill Stecchi joins the team. Of his new career path, he says, "While I am new to the wire and cable industry, I look forward to building a wealth of knowledge and new relationships. My goal is to provide excellent customer service in a timely manner."

Allied Wire & Cable is a family owned and operated wire and cable distributor and value-added manufacturer. For more information please visit [www.awcwire.com](http://www.awcwire.com).

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Elk Grove Village, IL 60007 Phone: (847) 290-8686**NEWS PLUGS continued****2013 Roadmap Activities Get Underway with a Call for Volunteers**

The long-awaited 2011 IPC International Technology Roadmap for Electronic Interconnections was released last at IPC APEX EXPO® 2012. Published biennially, the IPC Roadmap serves as an authoritative guide to interconnect technological trends, providing a vision of imminent, innovative technology. The 2011 roadmap incorporates revealing data and comparisons to help users serve clients and/or guide their companies in identifying, selecting and developing the right technology

alternatives to create the products needed for future markets.

"We've turned the roadmap inside out to help users connect the dots a little easier, in terms of translating OEM system level requirements into the materials, features, structures and process requirements for printed boards and assemblies to support those needs," says John (Jack) Fisher, president of Interconnect Technology Analysis, Inc. and chairman of the IPC Roadmap Executive Committee.

"Savvy companies can get a leg up on their competition by using the roadmap to help consult clients and customers on technology ... being proactive about future needs as opposed to reactive," adds Fisher. "The hard and complex work of compiling all the OEM input and data is done. The forecasts are com-

plete. All that companies have to do is use this tool to position their companies or to serve clients more completely ... not just for now, but to help them prepare for the future ... Being proactive, rather than reactive — that's what's going to help ensure this industry thrives."

The 2011 roadmap includes expanded regional analysis and comparison. In both the substrate and assembly sections, the 2011 roadmap provides insight into the regional differences in capability between Asia, Europe and North America. According to Marc Carter, IPC director of technology transfer, the new data sheds light on the important distinction between acknowledging a technology and actually having the capability to employ it.

"We're equipping users, especially purchasing staff, with information to go from making a cheap decision to an informed decision," says Carter.

Another essential addition to the 2011 Roadmap is the link of emulators to industry standards and specifications. A new section discusses the changes that need to occur in industry standards content to make them relevant to tomorrow's needs. This includes the addition of a state-of-the-art level for product features that demand a higher degree of precision — a level that Carter admits very few manufacturers can provide.

In areas where changes occur with dizzying speed such as the environment, health and safety; regulations and global stewardship, the roadmap has been updated to reflect the current state as well as future issues.

As the IPC Roadmap Committee embarks on the development of the 2013 roadmap, the group invites anyone interested in helping make each successive release more comprehensive to join in its efforts. For details on getting involved, contact Carter at Marc-Carter@ipc.org or +1 847-597-2826, or Jeanne Cooney, IPC manager of ANSI programs, at JeanneCooney@ipc.org or +1 847-597-

-2842. Published as a CD, the roadmap includes several technical resource presentations that users can access easily at their workplace. For more information or to purchase 2011 IPC International Technology Roadmap for Electronic Interconnections, visit [www.ipc.org/roadmap](http://www.ipc.org/roadmap).

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# Choosing the Right Cutting and Stripping Machine - It's all about the apps

By Pete Doyon,  
VP Product Management  
Schleuniger, Inc.

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### Application Range

When choosing a C&S machine, the most important consideration is the application range that it must process. Some applications only require a machine that can measure, cut to length, and strip one or both ends of a wire or cable. This is considered basic and can be done using a machine with a cutter head that can only accept one set of blades.

*Continued on page 28*

Choosing a new wire Cutting and Stripping (C&S) machine can be like shopping for a new car. With so many choices, where does one start? A nice, little sports car might be fun to have, but how often will it just sit there because it can't carry a car load of kids or some odd-sized goods from the local home improvement store? You just might be better off with



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## Choosing the Right Cutting and Stripping Machine

Continued from page 27

Make a detailed list of the applications that you would like to process on your new cut and strip machine. List the wire type, outside diameter, overall lengths, strip lengths, and what applications you need to process now and what new applications you might want to process in the future.

More complex applications include intermediate window stripping and slitting, zipcord, coaxial cable, and power cord processing as well as fully automatic stripping of the outer jacket and the inner conductors of multi-conductor cables. Other special applications include the cutting and stripping of fiber optic cable and stripping / slitting of flat ribbon cable. These more complex applications require a machine that has a cutter head that can accept multiple blade sets. A typical setup might include a set of V blades for cutting in position 1, a set of radius V blades for stripping in position 2, and a set of slitting blades for making intermediate window strips in position 3. The machine can be programmed to automatically select one or more of the blade sets, making it possible to process these complex applications.

Once the application range is defined, the next most important consid-

eration in the C&S machine selection process is the size range. What is the largest wire or cable size you need to process and what is the smallest size. Large copper cables with low strand counts need a lot of power for cutting and stripping. Large multi-conductor cables require a machine that can handle large cable diameters (O.D.), but typically do not require very high cutting and stripping forces.

On the small end of the range, precision is key. If you need to cut and strip a 30 AWG wire with a .010" center conductor and a .005" insulation wall thickness, there is little margin for error. C&S machines that can handle cables up to 1.0" and greater will most likely not have the precision required for wires on the very small end of the range.

### Pre- and Post-Processing Accessories

Pre- and Post-Processing accessories can transform a basic C&S machine into a fully automatic production line. A prefeeder ensures that wire is fed to the C&S with a constant tension, ensuring the best possible length accuracy. Prefeeder are available in many sizes. Select a prefeeder that can handle the largest, heaviest reel you plan to use as well as one that can keep up with the speed and acceleration of the C&S machine.

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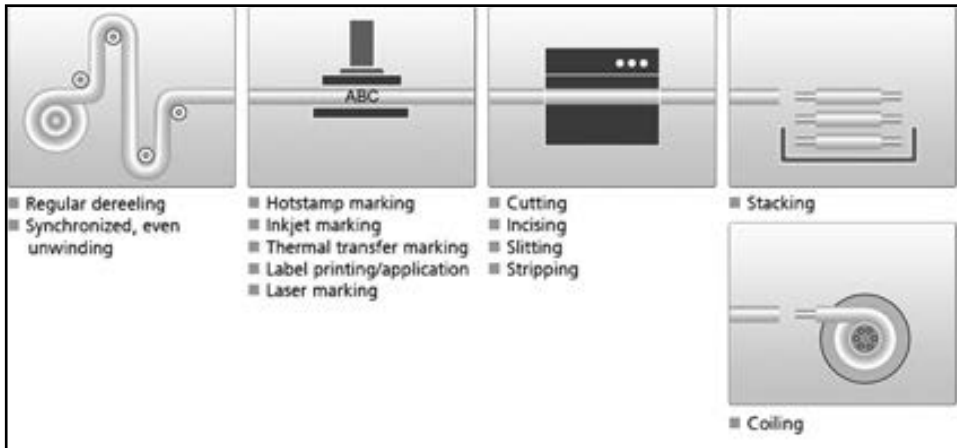
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**Pre- and Post-Processing accessories can transform a basic C&S machine into a fully automatic production line.**

Do you need to mark the termination ID's on the wire ends or print and apply labels for identification? Various wire identification methods can be integrated into a C&S line. Hotstamp marking, inkjet marking, and labeling are common ID methods, just to name a few. Inkjet marking is desirable since the wire or cable can be marked on the fly, whereas it must be stopped for hotstamp marking or labeling. A fully integrated inkjet marking system makes it possible to produce a complete wire list without any operator intervention. If inkjet marking is used in your wire processing operation, look for a cutting and stripping machine that can communicate with and control an inkjet marker.

Do you need to make intermediate windows or rotary incisions on the wire or cable? If so, you need a cutting and stripping machine with an integrated rotary stripping head. This type of system also makes it possible to measure

and cut coaxial cables and perform a 3 step strip on each end.

What good is a C&S machine that can process 5,000 pcs/hr if there is no way to collect and organize the wires as they are produced? Consider a machine that can be interfaced with a wire stacker or coiler to maximize the production rate and efficiency of the operation.

*Wire List Management Software*

What if you want to go really Lean and you want to be able to produce wires just in time for assembly at the harness board? To be able to produce a batch quantity of 1, you cannot afford to have an operator changing parameters for every wire. In that case, you want to make sure your wire processing machine can process a wire list. With wire list processing capability, your machine will be able to produce each

*Continued on page 32*

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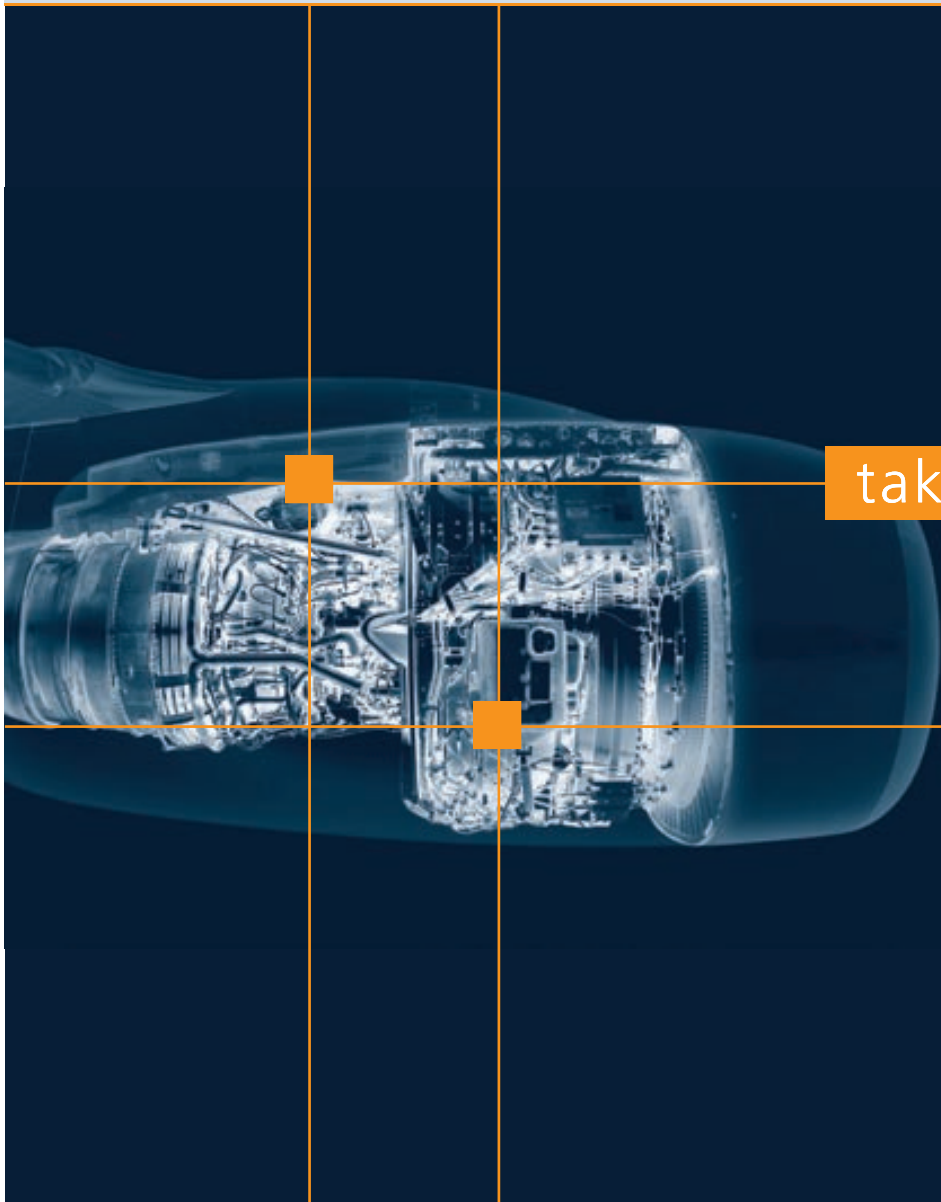
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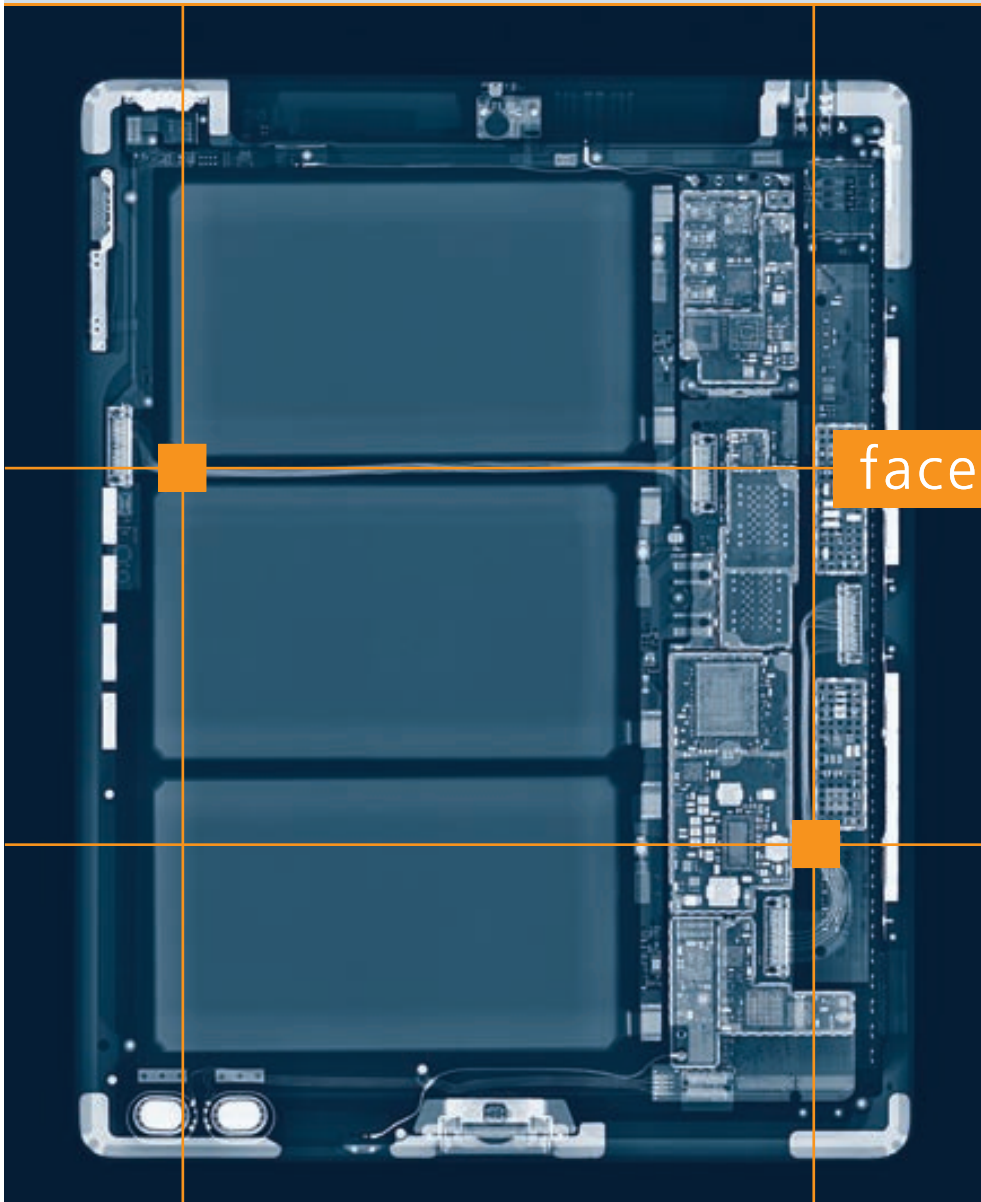
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# Choosing the Right Cutting and Stripping Machine

Continued from page 29

wire in the list, changing overall lengths, strip lengths, and inkjet text strings on the fly without any operator intervention. Some machines can process a wire list using the user interface on the machine, however it is much easier to use a PC or laptop with wire list management software. Wire list management software typically has an import function, allowing you to import jobs directly from your ERP or other software systems.

#### Changeover Times

With Lean manufacturing resulting in more high mix, low volume jobs, you want to minimize changeover times as much as possible. With small batch sizes, changeover times become more important than the maximum production rate that a machine can produce. In many cases, it takes less time to run a job than it does to set it up. Look for machines that offer quick changeover between jobs. Tool-less changeovers of guide tubes, blades, and other mechanical parts help to reduce changeover times. More advanced machines require less manual adjustments,



Make Sure Your Wire Processing Machine Can Process a Wire List.

further reducing changeover times.

Rotary stripping technology can be integrated into a conventional cut and strip machine. Since the rotary stripping head can be programmed to make incisions at any depth into the insulation, this design eliminates the need for changing blades (radius blades, die blades, etc.) when processing different wire or cable sizes. While the production rate is somewhat slower, no blade changeovers are

required for processing different wire sizes. If you have small batch sizes and frequent changeovers, you may want to consider a cut and strip machine with rotary stripping technology for your cutting and stripping area.

#### Other Considerations

Product Support hotline, local support, experienced technicians, field service, PM contracts, and readily available spare parts are just



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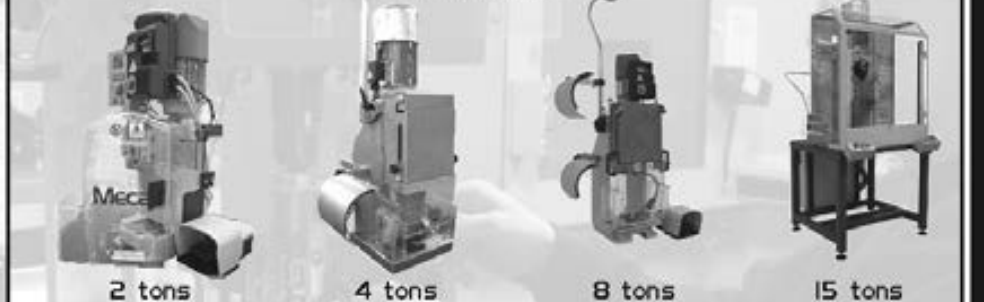
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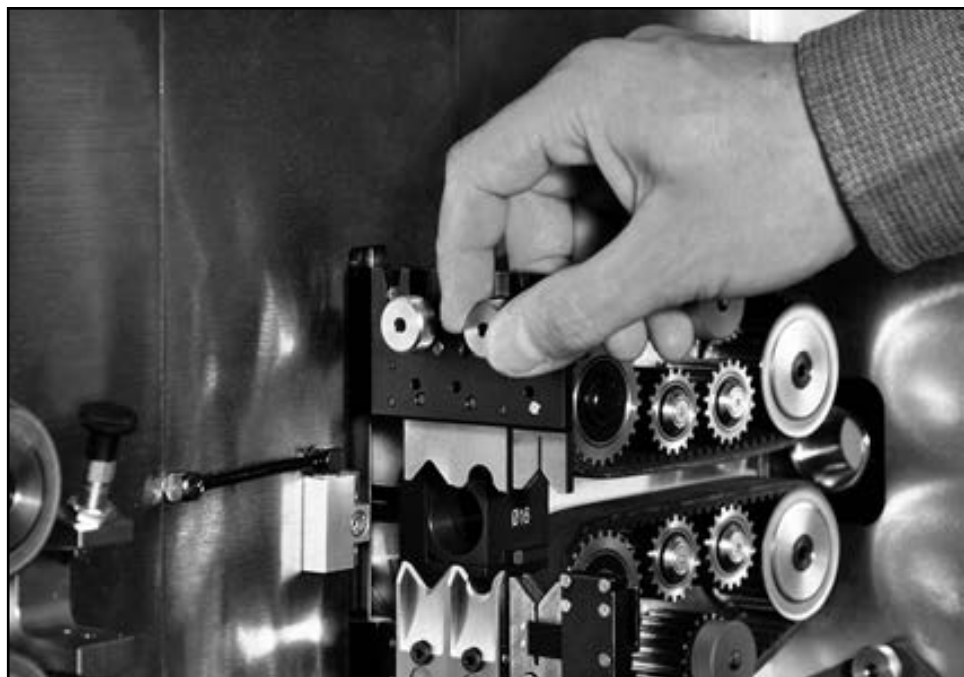
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as important to consider as the machine itself. If you are comparing machines from different vendors, make sure to compare services as well. All machines will need service at some point in time, so it's best to evaluate and compare the available services offered by the different vendors before deciding on which machine to purchase.

*Conclusion*

Just like you wouldn't purchase a new car without test driving it first, do yourself a favor and make sure your new cutting and stripping machine will run all of your important applications. It's best to send your wire and cable samples / specs to the vendor for testing to make sure your new C&S machine will be your daily driver.

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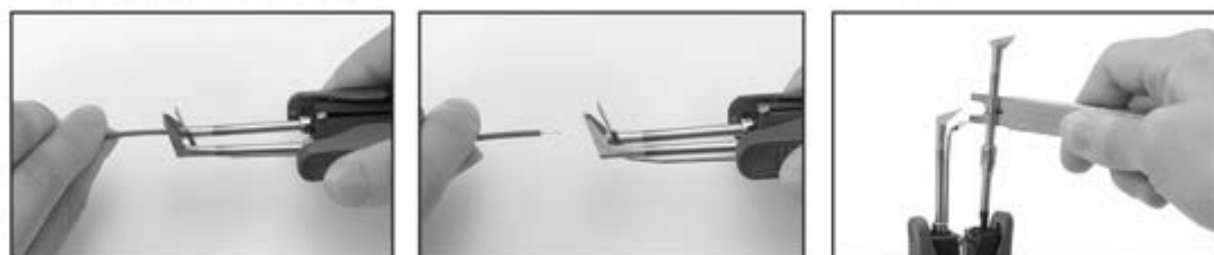
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## NEWS PLUGS continued



## Canadian Circuits Purchases MICRO-CRAFT Flying Probe Tester

Surrey B.C. Praveen Arya, President and owner of Canadian Circuits, Inc. of Surrey British Columbia, announced that his company has recently acquired The MICRO-

CRAFT EMMA ELX Flying 6146 Flying Probe tester. This tester is one of MICRO-CRAFT's popular series of Testers that offers fast highly accurate flying probe testing.

Mr. Arya commented, "More of our customers are requiring quick turn prototype boards and having this state of the art tester will allow us to not keep up but stay ahead of their needs. As British Columbia's foremost printed circuit board fabricator we feel that it is our responsibility to pro-

vide our customers with everything they need when it comes to their printed circuit board requirements."

Pam Arya Canadian Circuits' Sales Manager comments, "We recognize the need to expand our technology offering to meet the ever growing needs of our customers for higher and more sophisticated Printed Circuit Board Technology; as well as meeting the challenge of providing multilayer part numbers in as little as 24 hours. The acquisition of this flying probe tester is one of the steps we are taking for us to achieve these."

In business for Nineteen years, Canadian Circuits is one of the leading printed circuit board fabricators in British Columbia. They are in the process of upgrading their entire facility to be able to provide their customers with HDI Technology. President Praveen Arya believes that the best way to stay successful in the PCB business is to stay ahead of the customers' needs in terms of equipment, capability and technology; he has dedicated his company to making that happen. For more information go to [www.canadiancircuits.com](http://www.canadiancircuits.com)

## Welcome Aboard Alina Osbahr, Sales/Marketing Assistant

The Eraser Company welcomes their newest member to the Eraser Family!

Alina Osbahr is The Eraser Company's new Sales & Marketing Assistant, and will help oversee press releases, print/web advertising, public relations, samples, customer surveys, trade shows, and the newly redesigned Eraser website. On a daily basis Alina helps Eraser succeed by developing and implementing new mar-

keting techniques for the company's brand through print and internet advertising. Alina most recently worked as a freelance website/graphic designer in Syracuse, NY.

Alina received her undergraduate Bachelor's degree from SUNY Cortland in 2008 in advertising and public relations with a minor in website design. She received her Master's in brand advertising in 2011 from Full Sail University. Alina brings with her over four years of experience in the marketing and graphic fields.

The Eraser Company, Inc., manufactures a wide range of industrial products including wire/cable/tubing cutters, wire/cable strippers, wire twisters, wire brush wheels, dereelers, infrared heating equipment, measuring tools, and fyR-glass® erasers.

For more information on Eraser please visit the newly redesigned website: [www.eraser.com](http://www.eraser.com) or call (315) 454-3237.



Alina Osbahr, The Eraser Company

## HARNESSES Braiding & Shielding

As the industry leader in cable harness shielding, Hamilton Products will meet your most demanding requirements for textile and/or wire shields.

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Home Page: <http://www.hamprods.com>

## Small Details

For 12 years, Cheryl has witnessed the evolution of the Small HYDENT™ connector line from simple copper solderless terminals to the customizable options available today.

With every year, BURNDY continues to invest in and improve our Small HYDENT™ terminal options with:

- Newer technology that gives Cheryl and her co-workers better quality control
- The full-cycle ratchet HYTOOL™ that was developed specifically to ensure UL Listed and CSA Certified connections with BURNDY terminals
- Custom built jars that make it easy to see, store and use Small HYDENT™ terminals

Like the teamwork Cheryl finds in her job each day, the BURNDY® Small HYDENT™ line and corresponding tools work together to ensure long-lasting, quality connections.

**There is no substitute for the BURNDY® Engineered System.**

### BIG CONNECTIONS



**BURNDY**

Does it really matter  
where the next wire goes?



It matters to these guys.



Pin it Right with **PIN-SIGHT™** Patent Pending

**Error-proof the insertion of wires/pins into a connector**

- Eliminate mis-wires with video guided pinning
- Eliminate paper diagrams and cross-reference lists
- Reduce eye strain and operator fatigue
- Ideal for seal plugs too
- Rapid \$\$ payback through speed and quality



- Verify contacts are "locked-in" with force sensing
- No mating cables or connectors

Transparency setting lets you "see through" wires and fingers

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Gauge shows push/pull force

Operator enters wire ID via barcode, keypad or speech

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## NEWS PLUGS continued

**IPC-A-610E Japanese Language Released: Industry Requirements for Acceptability of Electronic Assemblies Updated**

IPC — Association Connecting Electronics Industries® announced the Japanese language release of the E revision of IPC-A-610, 電子組立品の許容基準. IPC's most widely-used standard. This document provides visual acceptance criteria for post assembly mechanical and soldering assembly requirements. The E revision of IPC-A-610 addresses additional technologies, including flexible circuits, board in board, package on

package, depanelization and additional SMT terminations.

The photos and drawings that show good and bad connections, considered one of the most important features of IPC-A-610, have also been upgraded. The E revision contains 165 new or updated illustrations, bringing the total to more than 800.

In addition, the standard has been revamped for ease of use and clarity. Sections have been reorganized so data and images are easier to find and to make it easier to use. Zenaida Valianu, training and development specialist at Celestica agrees, "The document is more intuitive and manageable than before, allowing users to navigate more easily and locate information promptly."

The many changes that have occurred in array packaging since the standard's last revision are also addressed in the E revision, as are changes to hot tear and filet lifting.

Designers and manufacturers will appreciate criteria for package-on-package technologies, often used to boost solid-state memory capacity, and for board-in-board connections, where daughter boards can be mounted perpendicular to the assembly using a through-the-board method.

"IPC is grateful to Celestica Japan KK for its assistance in translating this important document into Japanese," says Jack Crawford, IPC director of certification.

For more information or to purchase IPC-A-610E-JP, 電子組立品の許容基準,

or any of the other fourteen languages for this standard, visit [www.ipc.org/610](http://www.ipc.org/610). The hard copy price for IPC members is \$55 (U.S.) and the standard price is \$110 (U.S.). Additional formats of IPC-A-610E-JP are available. IPC-A-610E-JP can also be purchased by contacting IPC's official distributor in Japan — Filmex Corporation, at [filmex@corp.email.ne.jp](mailto:filmex@corp.email.ne.jp) or +81 463 73 4620.

**Allied Wire & Cable Releases Solar Cable Video**

Allied Wire & Cable premieres its Solar Cable video, which explains the two most common types of wire used in solar arrays: USE-2 wire and PV wire. It is the newest addition to Allied's educational video series on YouTube.

"Going green" isn't going away. In fact, using solar energy is more popular than ever. The problem is that the solar cables used in the systems which make solar energy possible, are still relatively new and widely misunderstood.

The two most popular types of solar cable are USE-2 and photovoltaic wire (PV wire); and PV wire did not appear in the National Electric Code (NEC) until 2008. Both cables are approved for use in outdoor photovoltaic arrays, but there are many differences between the two which determine which is more appropriate for your solar project. Watch the video to explore variations in construction, features, ratings, and UL and NEC recommended usage.

Allied uses a combination of animation and on-site footage of solar cable applications to give a multi-dimensional view of both USE-2 wire and PV wire. Though these types of solar wire are the overwhelming focus of the video, it also covers some of the benefits of turning to solar energy, and provides a quick introduction to custom solar cable. Overall, the video, which runs just short of 5 minutes, 30 seconds, gives a solid background of information for anyone who wishes to learn more about solar wire, regardless of their level of experience in the up-and-coming industry.

You can watch "Solar Cable: PV Wire vs. USE-2 Wire" and more educational videos on Allied's YouTube channel: [www.youtube.com/awc\\_wire](http://www.youtube.com/awc_wire). Additional video series featured on the channel include the popular "Cable Basics," and "Product Spotlights." For information on Allied Wire & Cable, visit [www.awcwire.com](http://www.awcwire.com).



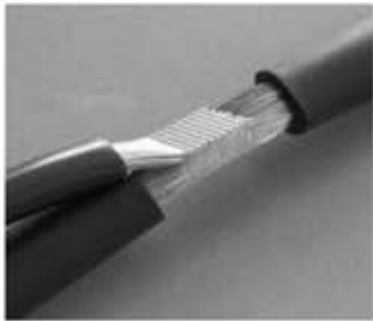
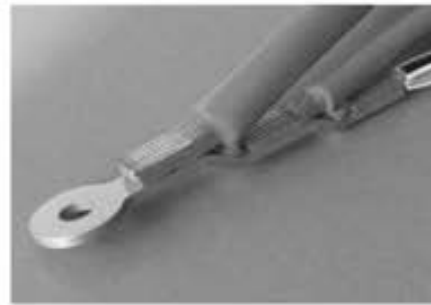
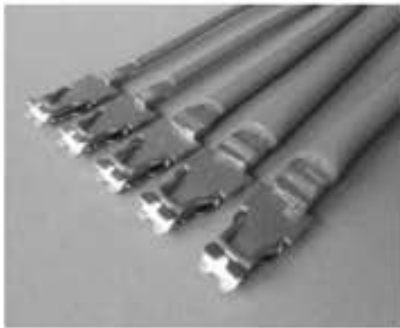
## Ultrasonic Metal Welding Technology



Schunk Sonosystems

### APPLICATIONS INCLUDE:

- Wire Splicing to 60mm<sup>2</sup>
- Wire Termination to 120mm<sup>2</sup>
- Li-Ion Battery Cells and Packs
- Flat Conductor Ribbon Cable
- Switches, PCB's
- Tube Sealing, Shunts
- Integrated Systems



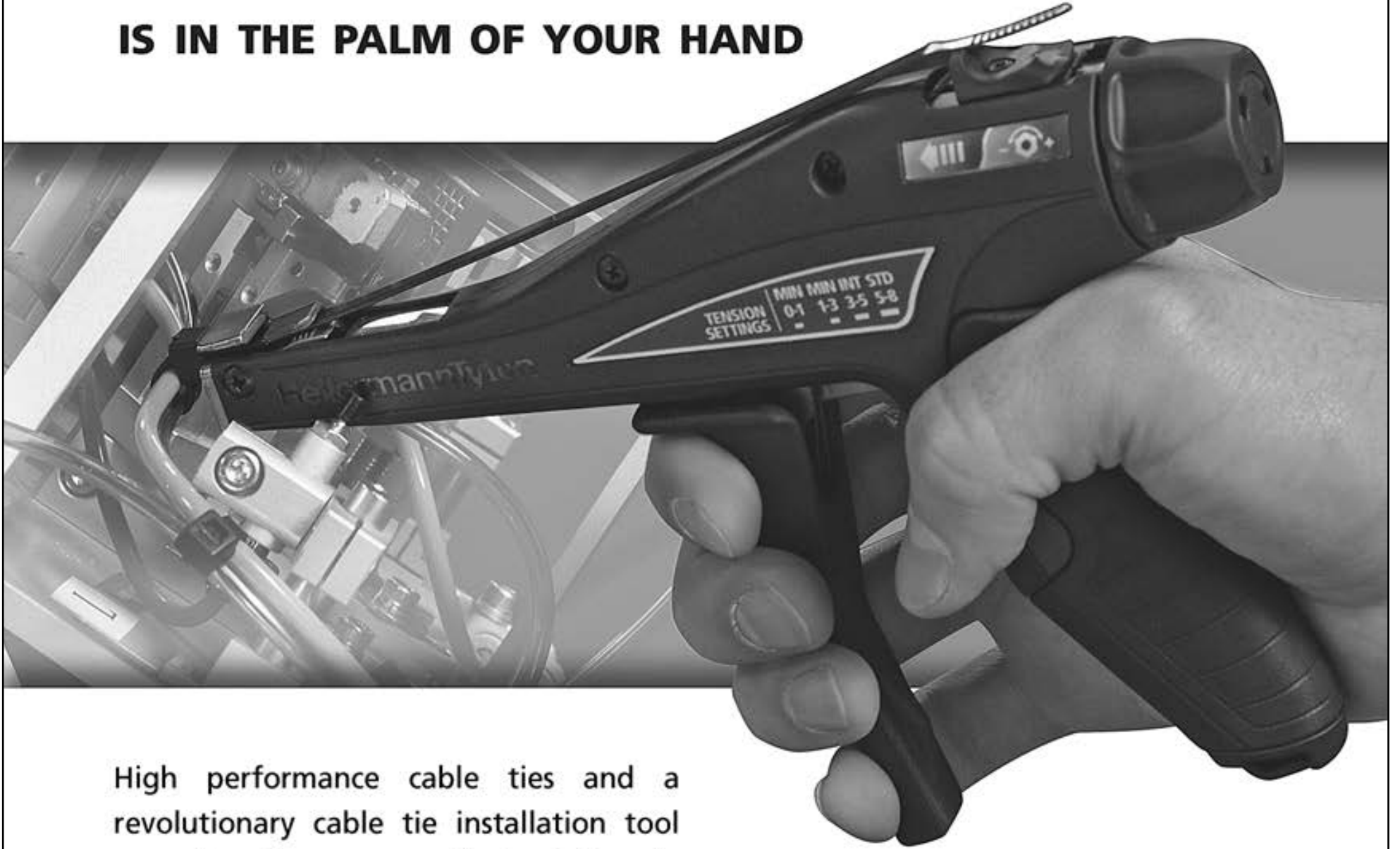
At Stapla, our experience, our technicians, and our applications laboratory, are the tools and reasons why we excel at providing the best welding solutions for our customers. The Stapla advantage: excellent products and service, offered with pride and dedication of our employees.



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High performance cable ties and a revolutionary cable tie installation tool come together as a unified solution to deliver the most precise and reliable fastening and bundling system worldwide

## EVO 7™

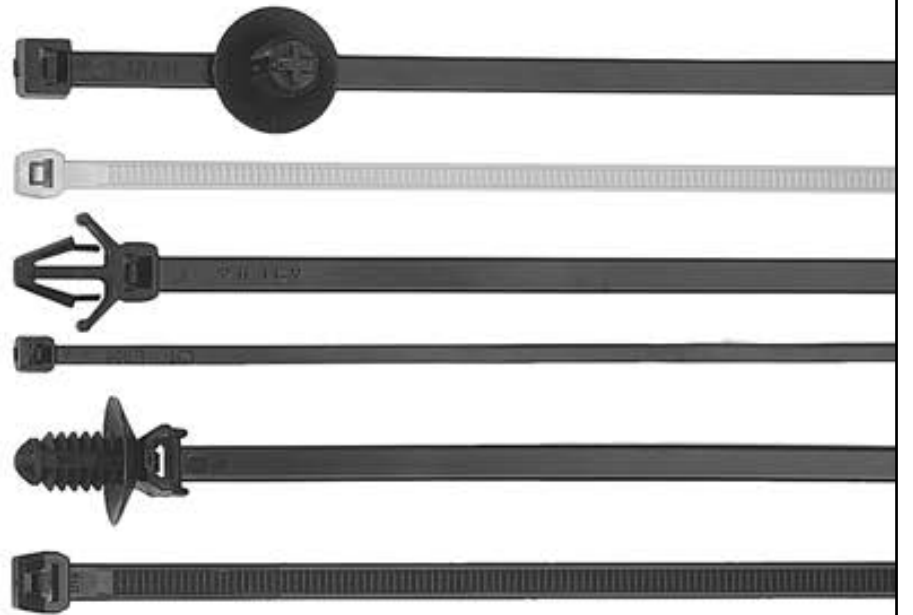
### ERGONOMICS

HellermannTyton's EVO 7 offers the most ergonomic cable tie installation tool in the market. Period. Comfort and operability are combined in one revolutionary tool.

### PERFORMANCE

At the heart of the EVO 7 lies patent-pending Tension/Lock/Cut (TLC) technology; the unbeatable ability to accurately and consistently cut a cable tie flush at the exact tension specified without any operator strain.

### TENSION • LOCK • CUT



HellermannTyton is globally recognized for manufacturing a full line of high quality cable ties and fastening systems. Manufactured in the USA, the EVO 7 cable tie tool and HellermannTyton's cable ties together produce bundling and fastening systems of unparalleled quality. Learn more about HellermannTyton at:

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**NEWS PLUGS continued****Model C200 Wire Stripper/ Twister Provides Fast, Clean Strip**

Designed for production, Eraser's Model C200 Twin Blade Rotary Wire Stripper and Twister can remove insulations such as Teflon, P.T.F.E.,



Eraser's Model C200

PVC, nylon, rubber, KEL-F and more from solid and stranded wires. If desired the unit can twist stranded wire as it removes the material. Material dependent, the unit can produce strip lengths from 1/32" to 2 1/2". Belt reversal allows the unit to be operated in either a clockwise or counter-clockwise rotation. The stripping head incorporates a pair of accurately adjustable tungsten carbide stripping blades which remain on center to provide fast, clean and efficient stripping.

The Eraser Company, Inc., manufactures a wide range of industrial products including wire, cable and tubing cutters, wire and cable strippers, wire twisters, wire brush wheels, dereelers, infrared heating equipment, measuring tools, and FybRglass® erasers. The company is

ISO 9001:2008 certified. The company offers Free E.S.P. (Eraser Sample Program). Send a 10-20 foot sample of your material and Eraser will recommend the best solution for your processing needs from its line of more than 200 products.

For unique processing needs, Eraser will custom design a solution for you. For more information on Eraser's entire product line visit [www.eraser.com](http://www.eraser.com) or call 315-454-3237.

**Zeus Expands Capabilities for Double Containment Tubing**

Zeus, Inc., a global leader in material science and high performance polymer extrusions, today announced it has expanded its capabilities for Double Containment tubing. Zeus now offers longer continuous lengths, a wide array of semiconductor industry standard and custom sizes, and options for material combinations.

Industry Standard Double Containment tubing, also called Dual Containment tubing, has an inner tube of High Purity PFA for transfer of harsh chemicals and an outer tube of FEP as a containment safeguard against possible hazardous leaks. Double Containment tubing is a material of choice in the semiconductor and critical fluid industries and is also utilized by chemical, pharmaceutical and other industries.

"Zeus is now offering to customize this product to fit the customer's needs, making it a viable product for more industries and applications," said Rob Hall, Vice President of Engineered Extrusions. "This willingness to collaborate with customers and the flexibility to meet their needs set Zeus apart. Whether it's FEP on FEP or FEP over HP PFA, Zeus Double Containment tubing continues to exceed the requirements of the most challenging applications."

Zeus is capable of manufacturing standard Double Containment tubing in sizes ranging from .047 to .063 wall and 1/4" OD to 1-1/4" OD.

The product is end capped and also available with special packaging options, such as pre-cut spool lengths and custom laser marking.

Samples of this product are available. For more information on Zeus Double Containment tubing and other products visit our website at [www.zeusinc.com](http://www.zeusinc.com).

# Feeling Disconnected?

ETCO's **5-5-5** plan is custom made for manufacturers who want personalized attention, innovative engineering and the most competitive pricing in the industry. With **5-5-5** you get:

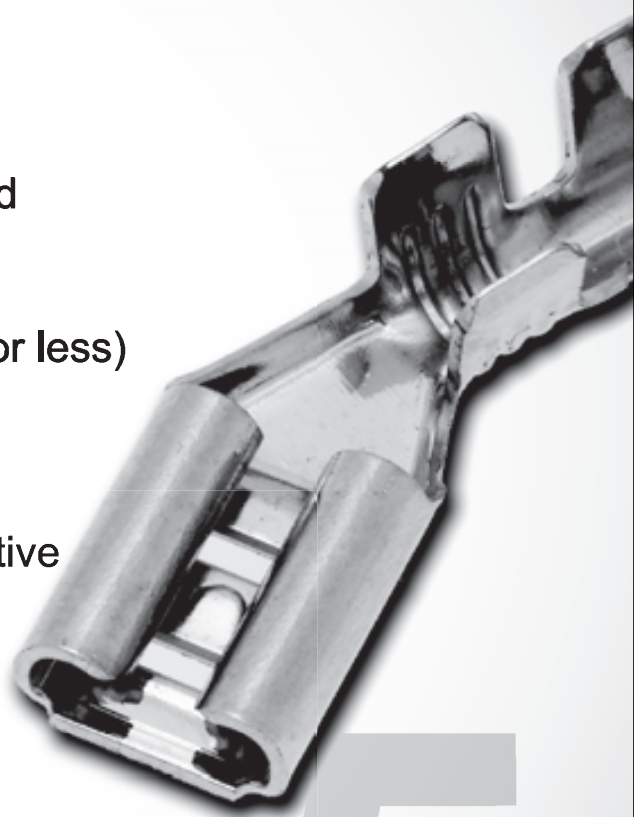
- **\$500 off** applicators/machinery
- **5 week lead time** or less on applicators and in-stock disconnect products
- Choice of **5 in-stock standard products** (or less) at the time of promotion, minimum quantity 50,000 pieces

The **5-5-5** Plan from ETCO is the best alternative to waiting around for prices to come down on applicators and machinery.

**The next step is yours; contact us now to see if you qualify for ETCO's 5-5-5 Manufacturers plan.**

Call ETCO at 1-800-689-ETCO (3826) and mention code 555b  
Visit us online at [www.etco.com/555?src-1](http://www.etco.com/555?src-1)

**ETCO**



### Alpha Wire Adds Industrial Ethernet Cable to Xtra-Guard® Family

Alpha Wire has added Industrial Ethernet to its growing family of Xtra-Guard high-performance cables. The new Cat 5e cables enable Ethernet communications with the durability and temperature range of Alpha's renowned Xtra-Guard 4 jacket, making it a perfect solution for demanding applications.

"The idea to use our Xtra-Guard 4 jacket on an Industrial Ethernet cable came from customers who needed a flexible and routable Ethernet cable that could withstand extreme environments," said Tim Howlett, Director of Marketing for Alpha Wire. "We decided to take it a notch further by offering zero minimums on this line, with put-ups as small as 500 feet."

The new Industrial Ethernet cables are available in a choice of unshielded, foil shield, or Supra-Shield® foil/braid. Alpha Wire's Supra-Shield uses a combination aluminum/polyester/aluminum foil and tinned copper braid that offers exceptional EMI performance and flexibility. Additionally, the cables are UV and fluid resistant, meet UL 1666 Riser and CSA FT-4 flame tests, and are suitable for use in NFPA 79 applications.

This connectivity cable is available in a temperature range of -50°C up to +125°C on FEP-insulated conductors and -50°C up to +105°C on polyethylene-insulated conductors. The TPE jacket is available in black with standard lengths of 500 and 1000 feet. Other colors, including red and teal, are available as special orders.

For additional information, contact Alpha Wire at 800-52-ALPHA (522-5742) in North America, 800-288-8809 in Europe, and 21-61498201 in Asia. Also, please visit [www.alphawire.com/XGIE](http://www.alphawire.com/XGIE) to

download data sheets, access search filters, and place free sample requests for Xtra-Guard Industrial Ethernet.

### Deutsch Industrial AEC Series Electrical Connectors

Available through LADD Industries, Deutsch Industrial's environmentally sealed AEC Series electrical connectors are specifically designed to match the demands of harsh environments. The compact, high pin density AEC Series connectors withstand moisture, dirt and rough terrain that can contaminate or damage electrical connections.

Intended for harsh environments where space is at a premium, all AEC Series connectors are constructed of heavy-duty thermoplastic in a compact rectangular design and feature 40 cavities that accept size 16 contacts. Five keying options enhance the design flexibility of the AEC Series and prevent mis-mating. A steel jackscrew ensures secure mating and no special tools are required when inserting and removing contacts.



**AEC Series Electrical Connectors**

LADD Industries, the exclusive authorized US Deutsch Industrial distributor, is pleased to offer the AEC Series to meet your industrial connector requirements. Please contact LADD at 1-800-923-1236 or visit [www.laddinc.com](http://www.laddinc.com) for more information on the AEC Series and all your Deutsch Industrial connector needs.



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- wire harness and cable assemblies making
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- plastic injection/metal stamping and punching
- able to do designing for client

**Advantage:**

- having been supplying to USA for many years
- accept small orders



**Contact: Ms.Qin Yunli**  
3<sup>rd</sup> Fl, Section 8, Hi-Tech Green Industry base  
Huayuan Industry Development Area,  
Tianjin, China 300384  
Phone: 86-22-28374694  
Fax: 86-22 88353003  
E-mail: [qin@china-sunlit.com](mailto:qin@china-sunlit.com);  
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## The World's Most Popular Hipot Cable Tester...



The Signature 1100H+ is our most popular benchtop high-voltage cable tester ever. Now look what we've added...



Use standard thumb drives, not proprietary memory cards.



2 USB Ports (standard) and an Ethernet Port (optional) allow you to store test programs, SPC Data, custom test scripts, etc.



Network all of your Touch 1 and 1100 series testers together. Shared data from one server.



Print custom labels with barcodes and graphics using scripting.

### Combine this with all of the 1100H+'s standard features:

- 1000, 1500 or 2000VDC - 700 or 1000VAC Hipot testing
- Continuity Resistance from .001 to 1MΩ
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## NEWS PLUGS **continued**

### HELUKABEL® USA to Appear at Upcoming Industry Trade Shows

Representatives from HELUKABEL® USA will be in attendance at this year's Automation Technology Expo (ATX) South in Charlotte, NC (booth # 1017) and the Del Mar Electronics and Design Show in San Diego, CA (booth # 121). Both shows will be taking place on Wednesday, May 2 – Thursday, May 3.

The ATX South show features automation suppliers who showcase the latest lean manufacturing, cost reduction, and enhanced productivity products and technologies, including custom automation/assembly systems, robotics, sensors, motion control, drives, and motors, to

help manufacturers compete in today's global marketplace.

On display at ATX South will be HELUKABEL® USA's JZ 603 and JZ 603-CY control cables which recently received approval by both China (CCC) and Russia (GOST-R) to be used in equipment manufactured for use in each country. The JZ 603 and JZ 603-CY have now been approved by five regulatory bodies – Europe (HAR), USA (UL) and Canada (CSA) as well as China and Russia.

Helukabel will showcase its cable and wire solutions at The Del Mar Electronics and Design Show in San Diego to an audience of over 4,000 industry professionals that include end-users in the fields of electronics manufacturing, alternative energy, and biotechnology. HELUKABEL® USA's booth will feature a selection of cables designed specifically for stationary, flexing and torsional applications.

Established in 2007, HELUKABEL® USA

is the North American headquarters for Germany-based parent company, HELUKABEL®. With over 30 years of industry experience, HELUKABEL® is one of the most successful companies in the field of cable and wire, specialty cable, and cable accessories. HELUKABEL® employs approximately 800 people worldwide and markets its portfolio of cables and wires to companies around the globe.

For further information contact Helukabel USA, Inc. 1355 Bowes Rd. Unit C, Elgin, IL 60123

Phone (847) 930-5118 or Fax (847) 622-8766. Visit [www.helukabel.com](http://www.helukabel.com)

### SEA Wire and Cable, Inc. Receives Silver Boeing Performance Excellence Award

SEA Wire and Cable, Inc. announced that it has received a 2011 Boeing Performance Excellence Award. The Boeing Company issues the award annually to recog-

nize suppliers who have achieved superior performance.

SEA Wire and Cable, Inc. maintained a Silver composite performance rating for each month of the 12-month performance period, from October 1, 2010, to September 30, 2011.

This year, Boeing recognized 529 suppliers who achieved either a Gold or Silver level Boeing Performance Excellence Award. SEA Wire and Cable, Inc. is one of only 407 suppliers to receive the Silver level of recognition.

"We are pleased that we have been honored with this award," stated Marty Clark President of SEA Wire and Cable, Inc. "More importantly, it demonstrates our commitment to the critical mission of our war fighters," Clark said.

SEA Wire and Cable, Inc. is a leading supplier of wire, cable, tubing, termination sleeves, cable ties, EMI/RFI back shells, connectors and other cable assem-

blies for the aerospace and military markets. The company is headquartered in Madison, AL with offices worldwide.

Founded in 1970, SEA has served for 40 years as the premier distributor in the military and aerospace industry.

For more information on SEA Wire and Cable: [www.sea-wire.com](http://www.sea-wire.com)

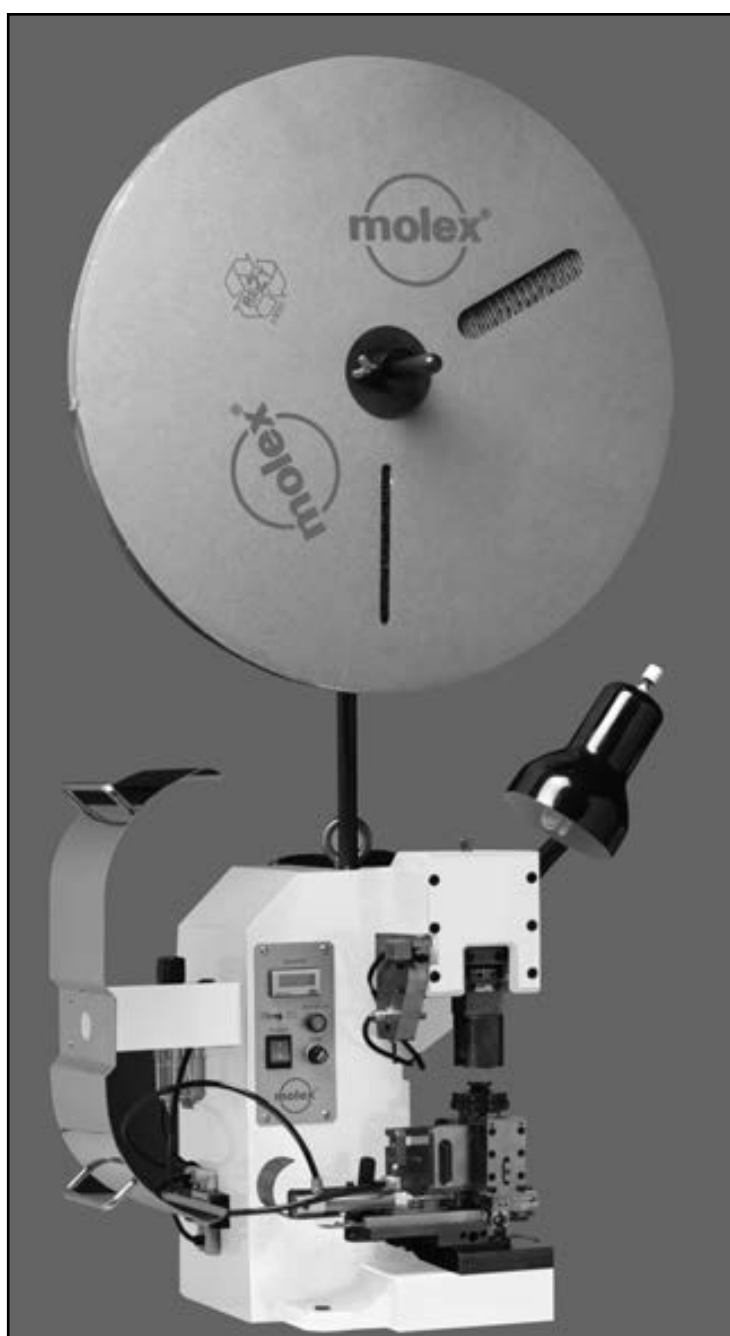
### TE Connectivity Launches New Circular HD Product Line

TE Connectivity introduces the new Circular High Density (HD) connector product line as a low-cost alternative to 38999 and other circulars for rugged non-Mil Spec applications. The Circular HD family offers more than 400 options in a wide range of cable and panel mounting options, shell sizes, insert configurations and gender options.

Offering the ease of push-to-latch/pull-to-unlatch mating, the small, high-density connectors have the advantage of blind mating into small spaces that may normally require clearance for hand tightening to mate. They are ideal for military and commercial use, including radio equipment, medical equipment, test equipment, audio and video equipment, data acquisition and industrial control.

The Circular HD Connectors offer the following features:

- Push/pull self-locking mating and unmating
- Scoop proof, blind mating
- Operating range of -65°C to +125°C
- Durability of 1000 mating cycles
- Five shell bodies rang-



The TM-4000™ Universal Crimp Press is an industry-standard, bench-top press that terminates large lug products on Mylar tape up to 4 AWG insulated and some 2 AWG uninsulated, resulting in lower overall applied costs. The TM-4000™ has electrical requirements of 240 AC 50/60Hz.

HEILIND ELECTRONICS IS THE PREFERRED STOCKING DISTRIBUTOR FOR THE NEW TM-4000™ UNIVERSAL CRIMP PRESS. CALL FOR IMMEDIATE SHIPMENT.

## LOWER APPLIED COSTS AND INCREASE CRIMPING FLEXIBILITY

**THE MOLEX TAPE-TERMINAL CRIMP MODULE AND TAPE TERMINAL PRESS REDUCE TOOLING INVESTMENTS, LOWER SETUP TIMES AND ALLOW YOU MORE PRODUCTION FLEXIBILITY.**

### Features and Benefits of the TM-4000™ Universal Crimp Press Include:

- Provides 3.5 tons (31 kN) of crimp force
- Accepts any Molex applicator and most industry-standard applicators
- Can be used with Molex Tape Module (64016-2000)
- Meets OSHA safety and noise requirements and is CE approved
- Two safety interlock switches attached to the guard prevent press from cycling if guard is open during operation

The Tape-Terminal Crimp Module efficiently crimps terminals to wires from 4 to 30 AWG with minimal setup adjustments and achieves optimal cycle rates for mid-to-high volume, semi-automatic operations.

### Features and Benefits of the Tape Terminal Crimp Module Include:

- Quick-change modular tooling accepts all existing ATP-201 and ATP-301 die sets
- Used in Molex TM-3000™ and TM-4000™ presses, which accept Molex applicators and most industry standard applicators
- Independent adjustment of insulation crimp height provides flexibility for various wire insulation thicknesses
- Quick tool changeover from die set to die set for increased productivity



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ing from 14 mm diameter to 27 mm diameter

- Panel-mount receptacles; IP68 rated with potted, solder cup or PCB termination
- 96-hour salt spray exposure
- Able to withstand 37 g's of vibration and 50 g's of shock
- Cable-attached plugs and receptacles; solder cup termination
- Full range of insertion configurations: power, signal, power and signal
- Up to 40 signal contacts
- Up to 20 A current rating
- Multiple keying options
- Chromate or black chromate finish.

The Circular HD Connector product line includes a full complement of well-engineered cable shrink boots for straight and R/A exit applications, sealing/dust caps and shrink tubing and solder sleeves.

For more information on TE's Circular HD Connectors, contact the Product Information Center (800) 522-6752 or visit [www.te.com/catalog/menu/en/23108?BML=10576.17560.23230.23111](http://www.te.com/catalog/menu/en/23108?BML=10576.17560.23230.23111).

TE Connectivity and the TE connectivity (logo) are trademarks of the TE Connectivity Ltd. family of companies.

#### Allied Continues Growth with the Acquisition of Progressive Wire

Allied Wire & Cable finalizes the acquisition of Progressive Wire & Cable, adding three southern US locations to its network of sales and stocking facilities throughout the country.

Allied Wire & Cable is proud to announce the acquisition of Progressive Wire & Cable, finalized on April 12, 2012. With the acquisition, Allied expands into Florida, Georgia, and Texas.

The Tampa, FL facility, Progressive's former headquarters, is Allied's first southern stocking location. The new warehouse allows for shorter lead times and more stock availability for Allied's customers in the southeastern US, who had been served primarily by the PA warehouse.

Tim Flynn, CEO of Allied Wire & Cable, says "Our customers kept asking us when we were going to open a branch in the Southeast. We have answered their call. We are very excited about the expansion, which will mean even better, faster service for our customers down South."

Allied also gains office locations in Houston, TX and Atlanta, GA. Additional sales staff in these, and the Florida facility, bring personalized service closer to

home for many of Allied's customers. The new members of the Allied team will be able to maintain the personal relationships Allied prides itself in, without sacrificing response time.

Progressive has been distributing wire and cable since 2005. With a focus on the industrial, commercial, utility, and government markets, the Progressive reps specialize in building cable, tray cable, and cordage. Allied is happy to add such great experience and product knowledge to its team of wire and cable experts, while providing Progressive's existing customers with access to a much larger, more diverse inventory.

The acquisition is only Allied's most recent sign of growth, finalized just a year and a half after the opening of its West Coast branch in Las Vegas, Nevada. Allied is proud of its continued growth and looks forward to serving the southern US better and faster than ever.

Allied Wire & Cable is a family owned and operated wire and cable distributor and value-added manufacturer. Allied services many of the largest industries in the country, including the government, military, and the aerospace, automotive, and telecommunication industries. Dedicated to providing the best and most personalized service possible, Allied offers customization services, including cut and strip, printing, dyeing, striping, twisting, and more, so that customers can get their wire and cable exactly the way they need

it. Allied also assigns individual sales reps to customers, providing a single point of contact to guide them through the cable buying process. Headquartered in Collegeville, PA, Allied has offices in Florida, New Hampshire, South Carolina, Tennessee, Texas, and Wisconsin, along with several warehouses across the country. In November 2010, Allied opened its newest stocking facility in Las Vegas, Nevada. For more information on Allied Wire & Cable, please visit [www.awcwire.com](http://www.awcwire.com).

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*In every issue of Wiring Harness News Anixter will bring you informative articles about wire and cable technology.*

### Temperature Ratings

The temperature ratings of wire and cable products are key operating parameters. The use of wire and cable products outside their design temperature range can result in premature and often expensive failures in-service. Some of the most common temperature ratings used in the wire and cable industry are discussed below.

#### Maximum Operating Temperature

This is the temperature rating that most cable users think of first. It is usually defined as the maximum continuous temperature that the wire can withstand during its lifetime. It is generally limited by the thermal aging characteristics of the polymers, i.e., the plastics used to insulate and/or jacket the wire. The metallic components of the wire seldom limit the temperature rating except in high temperature wire where oxidation of the metal begins to become a significant factor at approximately 250°C. Most polymers age by gradually becoming brittle over time. One common measure of brittleness is referred to as elongation. This is a laboratory measurement of how much the material can stretch before it breaks. Polymers used

in the wire industry typically start life with an elongation in the 300 to 700 percent range depending on polymer type. That is, some polymers can be stretched up to 7 times their original length before they break. The end-of-life for polymers is often defined as the point at which the elongation declines to 50 % because at that point even minor bending of the wire or cable can cause cracking of the insulation, the jacket or both.

Every polymer has its own unique thermal aging characteristics. However, as a rule-of-thumb, for every 10°C the operating temperature of a polymer is increased, the life is decreased by a factor of two. For example, a wire that is designed to survive 40 years at 90°C would be expected to survive only 20 years at 100°C and 10 years at 110°C. The mathematical model used to calculate the relationship between temperature and cable life is called the Arrhenius relationship<sup>1</sup> after the Swedish chemist that developed it. The Arrhenius relationship coupled with field experience and laboratory aging tests are the basis for the operating temperature rating assigned to most wire and cable products.



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**Minimum Cold Bend Temperature**

Most polymers become increasingly brittle as their temperature is lowered. Depending on polymer type, they begin to crack when bent at temperatures ranging from  $-10^{\circ}\text{C}$  down to approximately  $-80^{\circ}\text{C}$ . The minimum cold bend rating for wire is usually defined as the lowest temperature at which it can be bent without cracking under specific laboratory conditions. There are several test methods in use by the industry to determine this temperature. They generally involve cooling the wire to a specified temperature ( $-25^{\circ}\text{C}$  is typical) and then bending the wire around a mandrel whose diameter is in the range of 4 to 8 times the wire diameter. Details of one such test method are given in Section 580 of UL Standard 1581.<sup>2</sup>

**Minimum Installation Temperature**

This is the lowest installation temperature recommended by the cable manufacturer for a given wire or cable. This temperature is usually 10 to  $20^{\circ}\text{C}$  warmer than the laboratory cold bend temperature rating to compensate for the higher mechanical forces often encountered during installation.

**Minimum Continuous Flexing Temperature**

The minimum continuous flexing temperature is the lowest temperature at which a wire can withstand repeated flexing throughout its lifetime without damage. This rating is especially important for applications in which the wire or cable will be flexed thousands or

even millions of times while at very low temperatures. An example of such an application is the wiring for an automated material handling system located inside an ice cream storage warehouse where the ambient temperature is maintained at  $-30^{\circ}\text{C}$ .

**Emergency Overload and Short Circuit Temperatures**

In certain situations, power cable users must operate a cable at a higher than normal electrical load (i.e., temperature) for a limited period of time. As a result, cables have been developed that can withstand such overloads. For example, many  $90^{\circ}\text{C}$  rated power cables have an emergency overload rating which permits their use at  $130^{\circ}\text{C}$  for a total of up to 500 hours during their lifetime. Generally, these cables also have a short circuit rating which is the highest temperature the cable can withstand during an electrical short circuit lasting up to about half a second. For  $90^{\circ}\text{C}$  rated power cables, the short circuit temperature rating is usually  $250^{\circ}\text{C}$ .<sup>3</sup>

<sup>1</sup> SAE Standard AS4851, *Relative Thermal Life and Temperature Index for Insulated Electric Wire*, [www.sae.org](http://www.sae.org)

<sup>2</sup> UL Standard 1581, *Reference Standard for Electrical Wires, Cables, and Flexible Cords*, [www.ul.com](http://www.ul.com)

<sup>3</sup> NEMA WC70 (ICEA S-95-658), *Standard for Nonshielded Power Cables Rated 2000V or Less*, [www.icea.net](http://www.icea.net)

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**NEWS PLUGS** continued**2013 Roadmap Activities Get Underway with a Call for Volunteers**

The long-awaited 2011 IPC International Technology Roadmap for Electronic Interconnections was released last at IPC APEX EXPO® 2012. Published biennially,

the IPC Roadmap serves as an authoritative guide to interconnect technological trends, providing a vision of imminent, innovative technology. The 2011 roadmap incorporates revealing data and comparisons to help users serve clients and/or guide their companies in identifying, selecting and developing the right technology alternatives to create the products needed for future markets.

"We've turned the roadmap inside out

to help users connect the dots a little easier, in terms of translating OEM system level requirements into the materials, features, structures and process requirements for printed boards and assemblies to support those needs," says John (Jack) Fisher, president of Interconnect Technology Analysis, Inc. and chairman of the IPC Roadmap Executive Committee.

"Savvy companies can get a leg up on their competition by using the roadmap to help consult clients and customers on technology ... being proactive about future needs as opposed to reactive," adds Fisher. "The hard and complex work of compiling all the OEM input and data is done. The forecasts are complete. All that companies have to do is use this tool to position their companies or to serve clients more completely ... not just for now, but to help them prepare for the future ... Being proactive, rather than reactive — that's what's going to help ensure this industry thrives."

The 2011 roadmap includes expanded regional analysis and comparison. In both the substrate and assembly sections, the 2011 roadmap provides insight into the regional differences in capability between Asia, Europe and North America. According to Marc Carter, IPC director of technology transfer, the new data sheds light on the important distinction between acknowledging a technology and actually having the capability to employ it.

"We're equipping users, especially purchasing staff, with information to go from making a cheap decision to an informed decision," says Carter.

Another essential addition to the 2011 Roadmap is the link of emulators to industry standards and specifications. A new section discusses the changes that need to occur in industry standards content to make them relevant to tomorrow's needs. This includes the addition of a state-of-the-art level for product features that demand a higher degree of precision — a level that Carter admits very few manufacturers can provide.

In areas where changes occur with dizzying speed such as the environment, health and safety; regulations and global stewardship, the roadmap has been updated to reflect the current state as well as future issues.

As the IPC Roadmap Committee embarks on the development of the 2013 roadmap, the group invites anyone interested in helping make each successive release more comprehensive to join in its efforts. For details on getting involved, contact Carter at MarcCarter@ipc.org or +1 847-597-2826, or Jeanne Cooney, IPC manager of ANSI programs, at JeanneCooney@ipc.org or +1 847-597-2842.

Published as a CD, the roadmap includes several technical resource presentations that users can access easily at their workplace. For more information or to purchase 2011 IPC International Technology Roadmap for Electronic Interconnections, visit [www.ipc.org/roadmap](http://www.ipc.org/roadmap).

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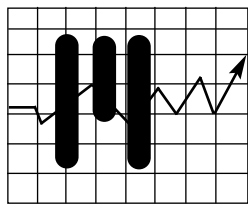
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- Send press releases. Many shows have daily newsletters and are clamoring for articles on products being featured at a show. Also, make submissions to any industry publications likely to have special show issues. Schedule a press conference at the show if you have an earth shattering development to announce.

- Make sure every communication you make in the weeks leading up to the show includes a "See us at" tag. These can be stickers on invoices and catalogs, or electronic signatures on all company emails. Always include show information on your website, but (pet peeve warning) please take this stuff off after the show! If you can make all of these communications conform to the overall graphic theme of the booth, you are way ahead of the power curve.

- Most major shows have staff devoted to helping attendees with marketing, press releases, and other promotional avenues. You will find contact names in the Exhibitor Manual. These are the folks to ask about product displays, proper press release formats, and many of your trade show uncertainties. I'm a veteran, but I make it a point to speak to these folks when I plan for any show. They never let me down. I learn something from every one of these conversations that I add to my trade show marketing arsenal.

- Sponsorships can be effective marketing tools. But make sure you are getting a good bang for your buck, and not lost in the shuffle. I often see banners or program inserts with a plethora of company monikers scattered at the bottom. I call it "Logo Soup." Stay out of that pot.

#### Staffing

This is where a lot of companies drop the ball. There are many formulas in determining the appropriate staff level at a show. You can take the total number of projected attendees, divide by the number of show hours, say two Hail Mary's and come up with some number. Just keep some simple things in mind. Your booth and display gobble at least 1/3 of your space. Stand up, point your arms out to form a "T" and spin around. This is about 50 square feet. If you put more than two or three people in a 10 ft. booth, it begins to resemble the glee club ready to burst into harmony. It's uninviting and nobody will be able to see

those cool graphics. If you think the show will be busy, consider a larger space. I've even used 10 foot booths in a 20 foot space with an extra banner stand. It works great and it really allows free and unfettered access to your space and staff without investment in a new booth.

Have a written schedule and make sure to have enough staff to accommodate breaks every two hours or so. Make sure that there is always someone in the booth knows how to contact show management, labor, or other providers of show services.

#### At The Show

I've heard the term "Boothmanship" used and you need to learn it, live it and love it. It's basically how you conduct yourselves at the show. Remember, you are showcasing your company's image and integrity. First, everyone in the booth should be well conversant in

sizes, flavors, delivery terms, lead times, and other product specific questions that are likely to arise. Engineers are usually better salespeople than most salespeople. But make sure everyone is on message, and prepared to take the prospect to the next level towards the final sale.

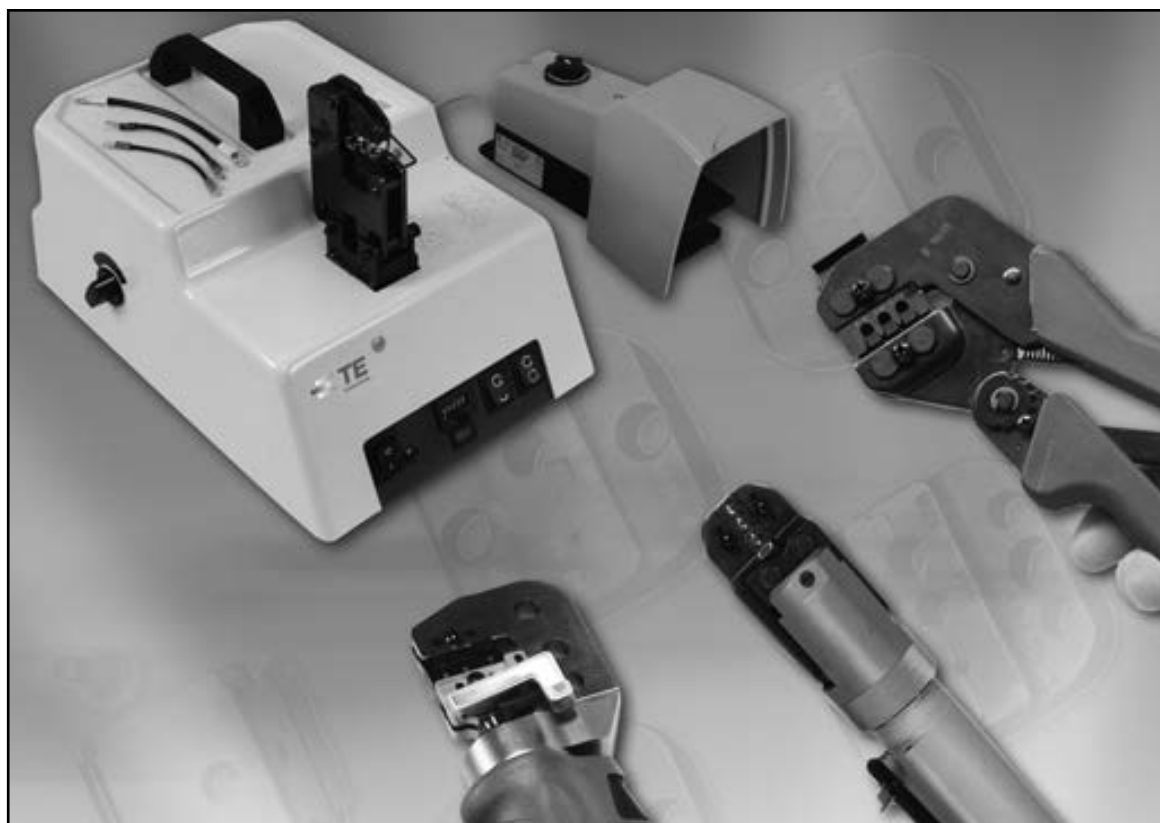
Avoid closed ended trivial questions like "How are you" or "Enjoying the show?" Use thoughtful open minded questions like "How familiar are you with our new technology?" Come up with a list of questions likely to get the ball rolling. Share and rehearse them with staff before going to the show. I know it's always corny to do role playing, but it really works.

This is where I get the moans and groans. It's never a good idea be seated in the booth, so no space eating chairs. People are less likely to engage if you are seated. Unless you have a huge booth

with a conference table setting, please stand. If you have listened to me and staffed your booth properly allowing for breaks, this should be no problem...right? I'm a bit of a cheap-skate, but I always order the extra carpet padding. It helps.

Keep the booth tidy and free of drink cups, water bottles, extraneous laptops, briefcases, purses and other mish-mosh. Always have a bottle of all-purpose cleaner, some paper towels, and invest in a Dustbuster. I hear more moaning, but it only takes a few minutes to clean a 20 ft. booth this way. Even if you decide to pay extra and have your booth cleaned, it never hurts to do a little maintenance throughout the day. Walk away from the booth occasionally and glance back to see how things look from the attendee's perspective.

Continued on page 48



## WORLDWIDE LEADERSHIP IN WIRE AND PCB MANUFACTURING PRODUCTS

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# Remembering Some Trade Show Basics

By Joe Tito

When I work with companies planning marketing strategy, I often let it slip that I enjoy all aspects of trade shows. Within two seconds, I'll have Exhibitor Manuals, show schedules, and the keys to the booth storage in my lap. But it's OK! Maybe I'm deranged, but I really love it. I think what frustrates most folks is the feeling they are not getting the most from their trade show dollar. With this understanding, I have assembled some guidelines and tips to help you avoid cost overruns and maximize your ROI. Some of this may be basic to you veterans, but I see some basic mistakes being made out there. It's my hope that these suggestions will help you enjoy being a featured star, and not just an average performer, at your next show.

## Pre Show Planning

Let's start with your booth. If you have an existing booth, ALWAYS set it up a couple of months prior to shipping. During tear down or shipping from the last show; graphics get torn, connectors go missing...stuff happens. Better to deal with this early and avoid costly last minute, or at-show repairs. If you are ordering new graphics, this is an absolute imperative. You don't want to get to the show and find out your graphics fit like your brother's Bar Mitzvah suit.

As for the graphics, unless you are a

household name like Google, have a short, powerful tag line or impactful graphic that speaks to your core competency. People only look at your booth for three to five seconds, and generally center their focus at the top of you backdrop before moving down. Keep this in mind. And for goodness sake, don't use a wordy, nebulous quip like "Innovative Solutions for Supply Chain Enhancement". Just tell me what you do!

## Shipping

Always use an experienced Trade Show Shipper. If you are at a loss, check the Exhibitor Manual for a list of preferred carriers. Many of the familiar shipping companies have Trade Show Divisions that understand the nuances of shipping to and from shows. Most shows have a specified time for you to move in. Arrivals outside this time can lead to extra fees charged to you from the shipper or the venue, so go with the pros. If it's a decent size show, a good shipper can rattle off your move-in date and time quicker than you can look it up in the Exhibitor Manual.

Since we are discussing shipping, let's discuss minimizing the amount of literature you are sending to the show. I constantly refer to a statistic stating 70% of printed literature handed out at shows gets tossed before the attendee leaves the host city. If you don't believe me, look in the lobby trash cans. Have some on hand, but offer to "lighten their load" by having literature mailed. This will

reduce costs while building your contact list. Also, consider using a newsletter as your de facto printed hand-out. Make it show specific, (The DEFCON 2011 Issue) and have content that will interest likely attendees. Newsletters have a sort of 3rd party feel, and I find people are more likely to read and keep them. I always have a "Notes" area on the back with a shaded grid where you can sketch any drawings, formulas, or other notes during conversations. Attendees are very likely to hang on to these.

Finally, if you have some last minute smaller items, ship them to your hotel. This will help you avoid extra drayage fees.

## Forms, Forms, Forms!

I admit, even I hate this part. But you must do it in a timely fashion. I consult with many companies and find they have been submitting them late, foregoing significant discounts. Make this a bold entry on your checklist.

At union regulated shows, the union typically dictates what you are allowed to do at set-up and dismantle. As a general rule, if two people can erect the booth in about an hour, with minimal use of hand tools, you are OK. You are almost always allowed to handle your own products. If you are unsure about your needs, it's always wise to buy an hour of labor when ordering show services. You will be locked into the discounted rate if you need more labor hours. Some venues are more finicky

than others so when in real doubt, ask the exhibition company.

Contact the show management and find out what color the isle carpet will be. Unless the color you choose for your carpet is absolutely germane to the overall theme of your booth, consider a color that is not too contrasting to the isle carpet. A stark difference tends to create a psychological barrier that may make your booth less approachable. In my 20 year experience doing shows, I have identified two basic types of attendees: swimmers and waders. Swimmers will get into your booth even if you put an electric fence around it. Waders, the larger group in my estimation, are much more tentative. Be sure to use this and many of the other suggestions I am offering to make your booth more inviting to the waders. Remove all impediments.

Take a photo of your fully pre-erected booth and attach it to the utilities forms so they have a better idea where to run lines (*in case your drawing skills are like mine.*)

## Pre-Show Marketing

It is my sincere hope that you grasp the importance of pre-show promotions. Reed Exhibition's research indicates that booth traffic can be increased by 33% through effective pre-show marketing. No atom splitting here - just a few suggestions:

- Most shows have VIP passes available to you. Take advantage of these and

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Customers report something unusual too: Mando’s “can-do” attitude.

George Price, vice president of J&M Products, for example, writes how Mando takes time to answer questions, explain machine operation and even gave “tips on stripping some shielded cable that others said could not be done.”

“Can’t be done” is not in Mando’s vocabulary—either English or Spanish. On his own initiative, he solves problems, leads training classes, helps boost plant efficiencies, and makes lasting friendships while doing it.

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# Remembering Some Trade Show Basics

Continued from page 47

Have a trade show Survival Kit consisting of small tools, two-sided tape, duck tape, and wire ties to make any MacGyver-type repairs. Always pack an extra power strip and extension cord. If you are erecting the booth yourself and are not over six feet tall, buy a folding stool and pack that as well. The show management and labor folks generally have an issue with you teetering on stacks of crates, chairs, or God forbid a ladder.

I'm sure those nice folks from the accounting department let you know exactly how much the last trade show cost. The space, the meals, the travel, the laptop you left in a cab...it adds up. Get

the most from the show and be on stage until the bitter end. Don't break down early – you never know who you might meet in the waning hours of the show. Plus, it is unprofessional in my opinion.

And finally, please, please, please, no eating in the booth! The last thing I want to see when I'm walking the show is you shoveling down a nacho grande with great dispatch. It's a big time turn off. Don't do it.

## After The Show

Whew, the show is finally over. This is the point where I have seen some of the costliest blunders take place. Make sure whoever is packing the booth has done it before...preferably blind-folded. Well intentioned "helping hulksters" can dam-

age expensive graphics and booth components by tearing hastily into the display and packing things improperly. Let them go have a brewski. If I am working a show with a 10 ft. booth, I actually prefer to throw on a pair of jeans, wait for the crates, and tackle it myself. More is not better here. And, if you want to ensure yours are the LAST crates out, go whine to the event labor crew that you have a flight out in two hours. Be patient. If you are using labor for dismantle, be there when everything is being packed. Your booth represents a huge investment so take great care at this stage. Plan to take a later flight and stay an extra night if it ensures proper dismantling and shipping of your booth.

Here's a tip. Go fish around your

shipping department for a 3/4 used roll of shrink wrap and throw it in one of the crates ahead of time. You will save money and help ensure your shipment will not be split and possibly lost or damaged in shipping.

Etch this next sentence in granite. **When all of your materials are packed, skidded, wrapped, labeled, and ready to ship, take the completed bill of lading to the show services desk and contact your shipper to let them know.** If this gets mixed up because you relied on someone else to do this, your stuff could be shipped via the show's preferred carrier; from Orlando to North Carolina by way of Ogden, Utah; all at your expense. Even worse, things can get lost altogether. To save time, have pre-printed return shipping labels with you at the show.

## Leads, Leads, Leads

This is really the meat of trade show marketing, and it transcends all stages of the show experience. You need to do the best possible job of qualifying the folks you meet at the show, and planning is key. This is one of those situations where quality absolutely trumps quantity. Ask your reps and salespeople to rate the quality of your show leads in the past. If they have been lacking in quality, you need to communicate that you are going to correct the situation...then actually correct the situation. This would be a good time to determine the type of customer you want to target, and integrate that into your overall message (pre show promo, booth graphics and newsletters.) Ask your sales team what types of qualifying questions should be asked of the prospect. This will help you develop some of those open-ended questions. Do your best to separate them by some sort of A,B,C priority. (I feel compelled to mention this because I saw it done, but please don't do this in the prospect's presence.) You never want to hand your sales team a mixed bag of unqualified leads. After the first few bombs, they will set those expensive leads aside never to be seen again.

## Qualify and prioritize.

As for the actual lead retrieval at the show, save the fish bowls for the guppies. I recently worked with a company in the information technology



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field, and the fishbowl was their system for gathering leads. Please...it looks like you're giving away a trip to Vegas or something. You will invariably end up with a bunch of cards with illegible scribbling on the back. Junk leads. I know the lead retrieval systems are pricey, but they offer great flexibility and integrate well with database systems back home. You can customize fields to prompt the questions you need answered. If you're not a techno-geek, ask the system vendor to help you through it.

I have also used business card scanners successfully. These scanners work great at table top events, and you can build customized fields with them as well. Low tech lead cards are fine but if all you come home with is a fat wad of business cards, you're not optimizing your trade show dollar.

Here's another tip. People retain the first and last message they see. I know all of you savvy marketers want to be the first, so transfer the lead information back home at the end of each day. They can mail merge them into a letter or an email thanking them for the visit with the requested info attached.

Make sure your lead response matches your customers buying cycle. If they won't be considering options for your product for several months, is it wise to give them the full-court press right now? Maybe a thank you with some company detail is more appropriate. And while we are on the subject, I think it's unwise to give new prospects a White House-style document dump in the beginning. Send them the information they

requested. You can introduce them to other products once they understand your value as a trusted supplier.

Lastly; and you know what I'm going to say, but some of you still don't do it; follow up properly. If you don't have a fancy contact management or CRM program, those fine folks at Microsoft have seen to it that just about every computer has a copy of Outlook. Set it up to prompt you, or whomever you elect to do follow-up's. You paid good money for these leads. No brain surgery or magic incarnations here. Just propel yourself to do the work and convert them into sales through effective and exhaustive follow up.

I hope this information has been useful. A lot of things were left out, but I tried to address many of the reoccurring problems I have seen in the last couple of years. Let me capstone everything with this thought. Think of the show as a four or five month marketing campaign with the show somewhere in the middle. Get all parties involved and plan as much as you can with checklists, scripts, and schedules. Make sure to meet in the weeks following the show and make an honest effort to evaluate the show's performance as well as your own. And please, force yourself to follow up on those leads. To the extent that you can do this effectively, you will greatly enhance the whole experience. I really enjoy this stuff, so if you have any questions about what I have written or want to enquire about something I left out; please feel free to contact me at JoeTito33@gmail.com. Now go be a star performer.

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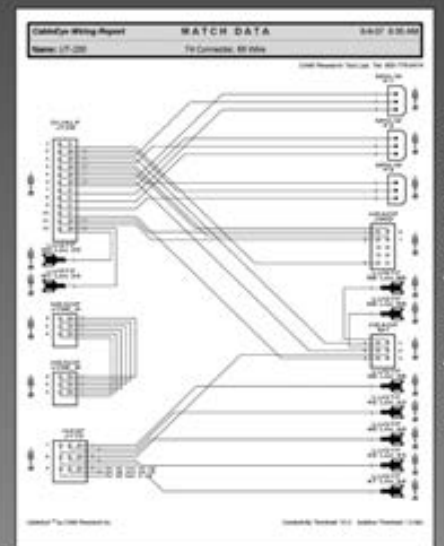
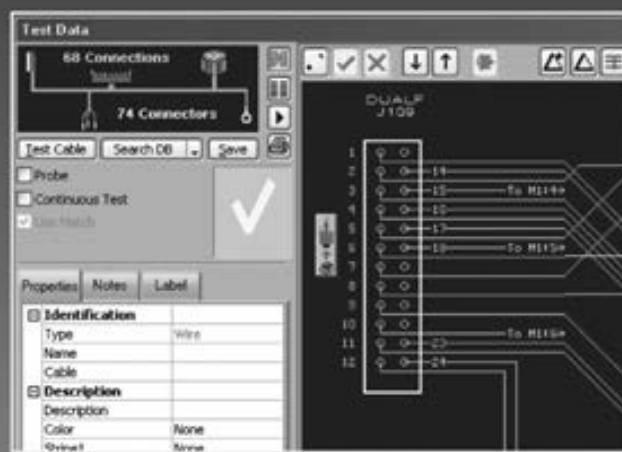


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## NEWS PLUGS continued



### North American Surveillance Systems Opens New Division

North American Surveillance Systems Inc., (NASS), an aerospace leader, recently expanded its capabilities to include laser wire cutting, marking and wire harness assembly.

"NASS can now provide high quality engineering and custom wire harness design services with an extremely fast turnaround," said Richard McCourt, President of North American Surveillance Systems Inc.

"Using NASS' state-of-the-art UV solid state laser cutting and marking system, our technicians can cut and mark a wide range of cables from 24 AWG to 6 AWG," said McCourt. "We can build to all FAA, OEM and military standards."

The high-volume system performs precision measuring, pneumatic cutting and marking including full graphics capabilities such as logos and barcodes.

NASS maintains a large wire inventory to support customer wire needs.

"As an AS9100 and ISO 9001 company, NASS will continue to provide that same level of excellence as it has in the past," said McCourt. "This is another example of NASS' growth and presence in the aerospace, defense and military industry."

North American Surveillance Systems Inc. specializes in the installation and integration of ISR, communications and weapons systems for airborne, maritime and ground-based applications. A veteran-owned small business and AS9100 and ISO 9001 company, NASS has more than 17 years of proven excellence in the modification of over 75 types of rotary and fixed-wing aircraft in more than 22 countries. For further information visit North American Surveillance Systems Inc. at [www.nassusa.net](http://www.nassusa.net).

### IPC Market Data Update Shows Leading Indicators Offering Hope for US Recovery

Although global economic growth and electronics industry growth slowed in the fourth quarter of 2011, signs that the recovery is resuming in the USA is apparent, according to IPC's quarterly report, Market Data Update, published last week. This winter 2012 edition reports the latest global and regional developments in the economy and the electronics industry, including selected findings from IPC's industry statistical programs and leading indicators.

The sovereign debt crisis in the Eurozone is acting as a strong headwind, holding back economic growth worldwide. China's economic growth is decelerating, in part because of the bleak outlook for exports.

U.S. economic indicators continued a slow and steady improvement that began in the fourth quarter of 2011. The Conference Board's Leading Economic Index® (LEI) has remained flat for a year, but has been inching up since last October, pointing to improved economic conditions in the next quarter. The U.S. Purchasing Managers' Index (PMI) is also in positive territory and trending upward.

EMS and assembly equipment sales growth in North America, although slower, remained positive, while most supply chain segments in the region, including the PCB and semiconductor industries, continued a downward trend. Similarly, at the global level, sales growth in the electronics supply chain continued its downward trend in the fourth quarter.

However, leading indicators in North America are trending gradually upward and point to a resumption of modest growth in 2012. IPC's PCB book-to-bill ratio edged up to 1.01, just above parity, in January. Monthly growth rates for North American EMS and semiconductor sales, and U.S. new orders for electronic end-products, improved in the last two months of 2011, returning to positive growth in December.



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Manufacturing continues to lead U.S. economic growth. Factory production grew a surprising 1.5 percent in December, the biggest one-month gain since December 2006, according to the Federal Reserve, and it continued to grow in January. Electronic products figured prominently in these increases, especially in the automotive market.

IPC's Market Data Update is free to IPC member companies, who can access the latest edition via a log-in page at [www.ipc.org/Update](http://www.ipc.org/Update). It is also available by subscription at [www.ipc.org/MDU-subscription](http://www.ipc.org/MDU-subscription). For more information on IPC's Market Data Update and other IPC statistical programs, contact Sharon Starr, IPC director of market research, at [Sharon-Starr@ipc.org](mailto:Sharon-Starr@ipc.org) or +1 847-597-2817.

**L-com Adds Mil-Spec and Ruggedized ST Fiber Optic Adapters, Connectors, and Covers**

L-com, Inc., a designer and manufacturer of wired and wireless connectivity products, has added new products to its lineup of industrial, ruggedized, and mil-spec fiber optic products, including connectors, adapters, and connector/adapter dust covers. The new products, all designed for the "ST" fiber connector type, are specifically designed for military, aircraft, spacecraft, shipboard, and harsh-condition land-based applications.

The two new varieties of products are designed either to meet the military specification MIL-C-83522, or to be commer-

cial off-the-shelf (COTS) ruggedized, and include connectors, couplers, and dust covers with lanyards. In both styles, options are available for 2mm, 2.5mm, and 3mm fiber types, and component bodies can be purchased as either nickel plated brass or stainless steel. The connectors come in either locking or non-locking styles.

L-com's many solutions to fiber optic technology's sensitivity to environmental conditions include bend insensitive (BI) fiber cables, IP66/67-rated fiber cables, and military grade 62.5/125 fiber optic patch cables. These new additions allow for custom cable creation in the field or in factories where military or ruggedized standards are required.

"Our broad fiber optic offering has been a mainstay in the connectivity industry for years, but catering to the special fiber applications that are becoming more common is our ultimate aim," said David Gallagher, Product Manager. "These products are tested, extremely high quality, and very capable for the needs of special fiber applications."

The new products are currently available on the L-com web site along with free downloads of datasheets and 2D engineering drawings for more information. L-com, a global designer and manufacturer of wired and wireless connectivity products, offers a wide range of solutions and unmatched customer service for the electronics and data communications industries. The company's product portfolio includes cable assemblies, connectors, adapters, computer networking components, and custom products, as well as the Hyperlink line of wireless products. Trusted for more than 25 years, L-com, Inc. is headquartered in North Andover, Mass., and is ISO 9001: 2008-certified. For more information, please visit: <http://www.L-com.com/>



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## NEWS PLUGS continued



### IP67-rated Connector from Amphenol Reduces Mating Mistakes

Amphenol Industrial Global Operations, a global leader in interconnect systems, has expanded its line of rugged connectors with the IP67-rated Amphe-SP3. The new connector is designed with 90- and 120-degree and keyway positions of different polarity to ensure safety during operation by reducing mating mistakes.

This single pole plastic power connector is ideal for environmental high power applications including those used in smart grid power, UPS for industrial applications, outdoor power supply, control systems, hybrid and electric vehicles, heavy equipment, and factory automation.

The Amphe-SP3 features Amphenol's patented RAD-SOK technology that uses a hyperbolic, stamped grid configuration providing a large, coaxial, face-to-face surface area engagement to maximize heat dissipation and reduce failures. This results in a correspondingly low voltage drop and low temperature rise as well as lower insertion forces. This combination enables the Amphe-SP3 to be used in higher current applications at a given temperature as well as offer a longer service life.

Compact, lightweight and cost-effective, the Amphe-SP3 features a molded thermoplastic housing and insert with rubber seals as well as integrated waterproof cable glands that enable it to fit into smaller spaces. This rugged connector is finger-proof in unmated applications, minimizing the user's interface with live contacts and the risk of shock.

The Amphe-SP3 uses silver-plated 5.7 mm RADSOK crimp-termination contacts and carries a current up to 120 A.

The connector's maximum operating voltage is 600 V AC with a contact resistance of 5 million-ohms. Its minimum insulation resistance is 5,000 mega-ohms at 25°C. The Amphe-SP3 can withstand up to 500 mating cycles at temperatures ranging from -40°C to +125°C, salt fog spray to NACL 5% for 1,000 hours as well as shock and vibration of 980 m/s.

For more information, please visit <http://www.amphenol-industrial.com> or e-mail [tech@amphenol-aio.com](mailto:tech@amphenol-aio.com).



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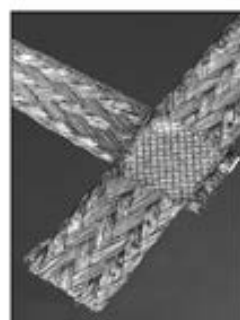
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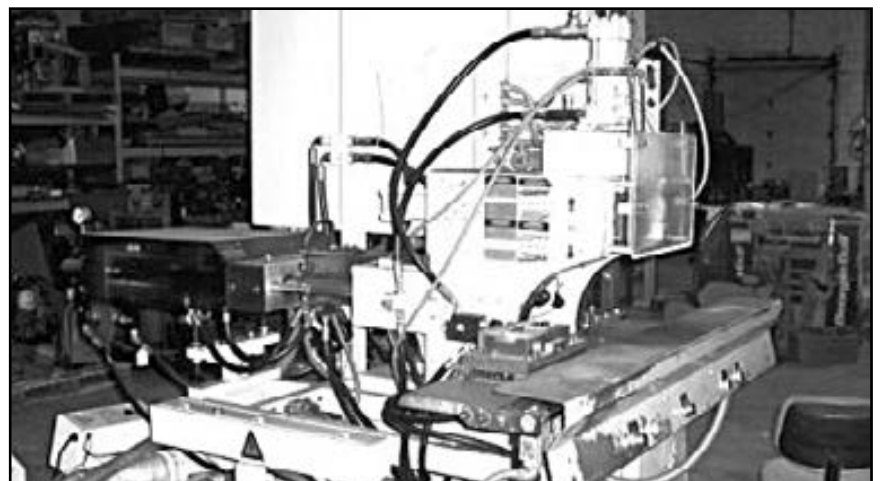
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Atlantic Design & Manufacturing can provide you with everything you need, all under one roof. You'll find hundreds of suppliers and industry experts, a complete array of design and manufacturing resources and solutions, and the education you'll need to keep a step ahead of the competition. The Innovation Briefs Theater features 30-40 minute FREE presentations from leading OEM suppliers on the latest developments and technologies important to your industry. Discover better processes, new information, and innovative technology and return to your work place with the tools you need to make your business stronger. *For further information or a listing of the seminars available visit [www.canontradeshow.com](http://www.canontradeshow.com).*

## **Advanced Aerospace Materials Expo**      **Charlotte Convention Center** **June 18-21, 2012**      **Charlotte NC**

AeroMat2012, like previous events, will bring together the world's leading aerospace materials developers, components producers and OEM engineers. This year's theme, "Aerospace Materials and Processes: Making Next Generation Designs Possible" will expand the interaction between materials and processing technology and will bring together hundreds of delegates and exhibiting companies to discuss and display the latest advances in materials and processes for aerospace applications. *For more information on attending this all important aerospace conference go to [www.asminternational.org](http://www.asminternational.org).*

## **Semicon West 2012**      **Moscone Center** **July 10-12, 2012**      **San Francisco, California**

With many new manufacturing technologies coming to market (including vertical transistors, 3D IC, advanced materials, 450nm, and EUV) and with the continued growth of emerging and adjacent microelectronics markets (including high-brightness LEDs, MEMS, power semiconductors, and flexible electronics), 2012 is already shaping up to be an important year for the global microelectronics supply chain. *For further information visit <http://MDMminn.com>*

## **Aerospace Manufacturing & Automated Fastening Expo**      **Ft Worth Conv Ctr** **September 18-20, 2012**      **Ft Worth, TX**

SAE 2012 Aerospace Manufacturing and Automated Fastening (AMAF) Conference and Exhibition "A New Reality - Reliability, Sustainability and Affordability". The SAE 2012 AMAF will provide a forum for the aerospace community to present and discuss current and future challenges, opportunities and requirements of next-generation aircraft R&D, products and systems. Technical sessions, lively panel discussions, and keynote presentations will be the highlight of this premier event that is essential for engineers, scientists, designers, program managers and operators in the industry as well as government and research facilities. Don't miss this key event covering materials, manufacturing and fastening of aerospace structures! *See [www.sae.org/events/amaf](http://www.sae.org/events/amaf) for the latest updates.*

## **Electronica 2012**      **New Munich Trade Fair Centre** **October 20-23, 2012**      **Munich, Germany**

Microchip products, assemblies / subsystems (other types), discrete semiconductor components, other discrete components, system equipment, electromechanical components, system peripherals, ED / EDA equipment, measuring and testing. *For further information visit [www.tradefairs.com/Trade\\_Fairs/electronica/2012/](http://www.tradefairs.com/Trade_Fairs/electronica/2012/)*

## **MD&M Minneapolis 2012**      **Minneapolis Convention Center** **October 31-November 1, 2012**      **Munich, Germany**

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## **Contract Manufacturing Expo**      **Palais des congres de Montreal** **November 14-15, 2012**      **Montreal, Quebec, Canada**

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## **Electronics West**      **Anaheim Convention Center** **February 12-14, 2013**      **Anaheim, CA**

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## **Wiring Harness Manufacturer's Conference**      **Renaissance Las Vegas Hotel** **February 20-22, 2013**      **Las Vegas, NV**

Once a year WHMA sponsors a conference that offers members the opportunity to participate in committee sessions, attend educational programs and check out the industry's latest at the supplier's technology exhibits. *For further information visit [www.whma.org](http://www.whma.org) or call (952) 253-6085.*

## **IPC APEX Expo**      **San Diego Convention Center** **February 19-21, 2013**      **San Diego, CA**

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## **Interwire 2013**      **Georgia World Congress Center** **April 23-25, 2013**      **Atlanta, GA**

Introduced in 1981, Interwire is the largest and longest-running wire and cable marketplace in the Americas. It is an international trade event that includes exhibiting companies, speakers and attendees from more than 50 countries around the world. The show crosses dozens of vertical industries including automotive, construction, aerospace, transportation and communications among others. *For more information see [www.wirenet.org/events](http://www.wirenet.org/events).*

**If you have an event you would like to have listed here, send it to Marilyn Magowan  
[marilynmagowan@yahoo.com](mailto:marilynmagowan@yahoo.com)**

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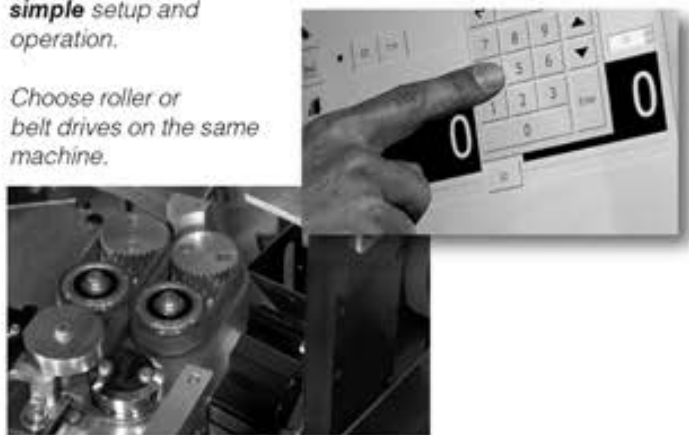


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