

This Issue Features:

- Automation of Plant Floor Processes
- Celebrating 100 Years With Artos Engineering
- RoHS/WEEE/ELV Directives and the Lead-Free Solder Exemption
- Wire Wisdom - Electronic and Communication Cable Shield Concepts
- Aluminum Core Cables - The Soft Solution with the Tough Challenge



Custom Interface

Offering quality wire harness design, production and electromechanical assemblies

By Fred Noer

Every year Fortune magazine compiles a Best Companies to Work For list for each state. Someday the publication may honor Custom Interface with a ranking among the prestigious firms in Washington.

And why not, since the window of opportunity for the company is as wide as the stunningly scenic Columbia River Gorge in which Custom Interface (CI) is located. The wiring harness and electromechanical assembly manufacturer calls Bingen home at the bottom of the state. The community has approximately 700 year-round residents.

The village is 40 miles northeast of Portland, Ore. Not only does the area have phenomenal natural beauty, the

attractions are plentiful - national forests, state parks, wildlife refuges, Mount Hood to the south and Mount St. Helens to the northeast. Activities range from fishing, skiing and boating to swimming, windsurfing and kayaking to kiteboarding, hiking and camping.

While the area has many opportunities for exercise, play and leisure, CI provides an environment for work, achievement and growth. As a result, CI staffers and customers reap the benefits.

"This is an awesome place to live," said Marcia Yarbro, chief of business who is in charge of regional sales. "One of the goals with the company was to give local people a job so they could build a life here and not just be on vacation all the time. There are not a lot of companies here, but more are coming."

The 120 people on staff have Nancy



Custom Assembly employee works at a machine crimping station

White to thank. She started CI in March 1997 after spending 12 years at Electronics Assemblers in Hood River, Ore., in various roles as partner, head of operations and regional sales manager.

White, who has an associate degree in electronic engineering, is semi-retired and holds the position of CEO. She is in her CI office 2-6 times a month but reviews financial and sales figures on a daily basis.

Since founding the company, whose sales exceeded \$10 million last year, White served as president and was in charge of human resources, sales and other aspects of the firm. When she began contemplating selling CI, other people were hired or promoted to handle her duties and responsibilities.

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Automation of Plant Floor Processes

By Michael Reeve
OES, Inc.

Think for a minute about the old checkout counters that used to exist in retail settings. Cashiers had to identify the product based on their knowledge of the inventory, remember the specific code for the product, key the code in correctly, and hopefully not miss anything. The small difference in a product's size or appearance could easily lead to a wrongful identification and consequentially the incorrect product code.

Now think about the manufacturing sector, where operators are required to manage several aspects of several jobs. This includes machine setup, validation of material, setup of the in-process mon-

itoring systems (crimp force monitors, wire end inspection devices, first piece inspection, visual inspection), and reporting on the production run - all done manually.

Further contributing to their challenge is the transition to smaller production runs, which translates into more frequent machine setups and changeovers. On top of production and quality, operators manage maintenance activities in real time while meeting production targets and objectives, which are continuously updated and changed.

The evolution from a manual to an automated process in manufacturing is not revolutionary, but has only been implemented in certain industries. If the technology exists to automate process-

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Artos Engineering

Celebrating 100-Year Anniversary



Haaken Olsen, Founder (left) and Chief Engineer, Karl Andren in a 1963 photo.

This year, Artos Engineering Company will celebrate its 100-year anniversary. Trends, innovations, leaders, even industries all come and go in the mere space of a decade. But over the course of an entire century, Artos has displayed and exercised the traits necessary to lead to its successful longevity. Actionable innovation. Adaptability to serve the evolving needs of its customers. Visionary leadership and a thorough understanding of customer needs. All are traits allowing Artos to serve global markets and engineer machines that serve rapidly changing industries.

Incorporated in 1911, Artos first developed automatic measuring and cutting machines for textile ribbon and other narrow, flexible materials. In 1918, a promising young engineer named Haaken Olsen joined the company. A good engineer is able to recognize not just sound design and development standards, but also when there is a need for innovation. Olsen noticed an increase of usage of insulated copper wire in the manufacture of automobiles, appliances and radios. He also recognized the labor-intensive hurdles of cutting and stripping insulated copper wire by hand.

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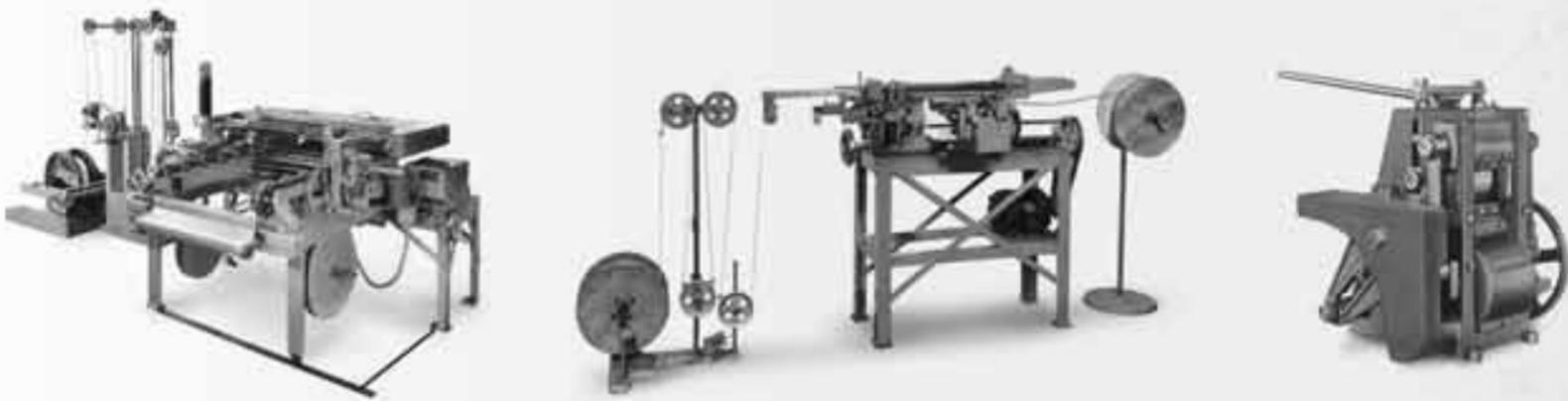
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We're starting the next 100 years by taking "Artos Across America" again this summer to showcase our newest solutions. As always, we'll be listening to your feedback so we can keep engineering smart, application-focused products that help you take on the challenges of your fiercest competition, whether they're located down the road or around the globe.

To learn more about our 100th anniversary plans and upcoming roadtrip, visit us at Booth 1103 at the Wire Technology Expo, or call 262-252-4545.



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Electronic and Communication Cable Shield Concepts. This Wire Wisdom explains how shielding works, how to choose the correct shield for your application and the correct way to terminate a shield.

1 Custom Interface

Custom Interface has a company culture that is all about self improvement – learning, growing and enjoying work.

1 Automation of Plant Floor Processes

More and more Tier One manufacturers are pushing the use of process automation to ensure quality.

1 Artos Engineering

This year Artos Engineering is celebrating their 100 year anniversary. Artos has faced many changes over the course of 100 years.

8 RoHS/WEEE/ELV Directives and the Lead-Free Solder Exemption

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2010 Production Schedule

| <u>Issue</u> | <u>Reservations Due Date</u> | <u>Materials Due Date</u> |
|------------------------|------------------------------|---------------------------|
| May/June 2011 | April 1, 2011 | April 8, 2011 |
| July/August 2011 | June 3, 2011 | June 10, 2011 |
| September/October 2011 | August 5, 2011 | August 12, 2011 |
| November/December 2011 | October 7, 2011 | October 14, 2011 |
| January/February 2012 | December 2, 2011 | December 9, 2011 |

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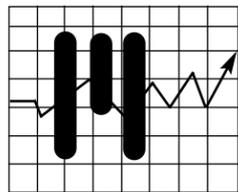
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Over 10,000 copies of *Wiring Harness News* (ISSN 1097-0789) are distributed bi-monthly to wiring harness & cable assembly shops, cord set manufacturers, companies that process electric wire & cable (including fiber optic) for use in their own products, their suppliers and other interested parties.

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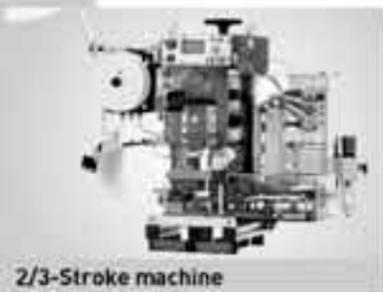
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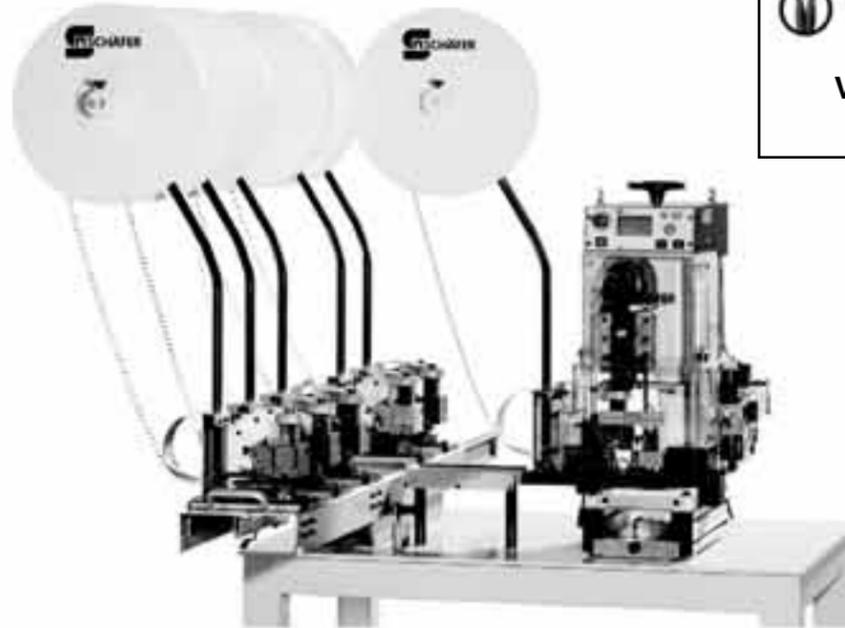
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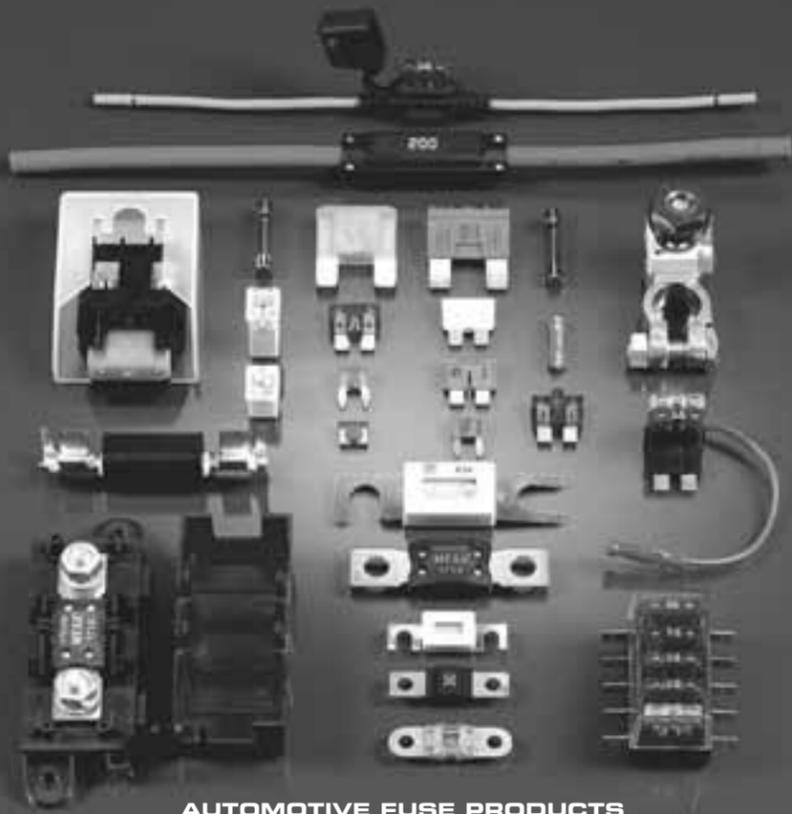
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Dreaming Big – and Remembering Your ‘Reason for Being’

By Paul Hogendoorn

Earlier this year I had the pleasure of having dinner with the founder of one of my largest competitors. It was a unique opportunity that was arranged by a mutual customer and friend. My friend used to work for the competitor and had often spoken admiringly about this individual, suggesting that the two of us had a lot in common. I took her up on her offer to try to arrange a dinner meeting with him, which she then did.

I have often written that starting and building a business requires a spirit of adventure and that leadership can often be lonely. Any opportunity to meet with a successful business founder and leader is something I always look forward to, but in this case, especially so. This man had been retired from the company for a few years but still served as the chairman of the board. He started his company about ten years before I started mine, but he grew his company to a size forty times bigger than mine. I had much to learn from him.

We spoke a lot about the early years of each of our businesses, of the challenges and various times of special satisfaction. We spoke a lot about “vision” and “values” and how important it was to remain true to them throughout the



**Paul Hogendoorn,
President OES, Inc.**

company’s life. And we spoke a lot about the role of the leader to cast the vision and guide the company, making sure it stayed true to its values. But throughout the conversation, one topic threaded its way into almost every discussion – and that topic was why he started the company in the first place.

He was a professor at a university in a mid-western state where the primary industry was (and still is) agriculture. Most of the students there came from the region, but most then left when they

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graduated because there was no opportunity there for them to apply their education. His initial goal was to start up a technology company that would create employment opportunities for the graduates, and then to continue growing the company through the talents and skills these graduates added. The company now employs 2000 people.

I have been fortunate to have been mentored by a number of great entrepreneurial leaders and so often the story they tell is the same. They started their company for a specific reason, and that reason had little to do with any ambition for personal wealth. Most of them left behind solid employment situations, exchanging their careers for new careers that came with great financial uncertainty, offering little more than just the opportunity to pursue their dream. Most were pursuing business objectives that all the advisors and consultants thought were doomed for failure. Since this group of "experts" usually included the bankers, the initial supporters were made up of their friends and their families - people that knew their character, and knew their commitment and determination to their dream.

The other common theme among them was of failures and setbacks, and the resolve to persevere. Often the obstacles were so big and the set-backs so disheartening, it's a wonder that they carried on at all. Some might suggest that fear of failure - of losing it all - was the thing that kept them going, but I don't. I think what kept each of them going in those dark times was that as long as the dream was alive, regardless of how near-impossible it might seem, they were not going to quit and give up hope. Fear may push us to do things we otherwise might

not do, including sometimes pushing us right off the rails. Hope however, pulls us in the direction of our dreams, and keeps us on track. The other difference between fear and hope is that fear often causes a company to plateau when things are going well (when a risk-management mentality becomes dominant), while staying focused on the dream always stimulates growth and opportunity thinking.

The biggest "take-away" from the meeting with my competitor was the reminder that the "dream" has to be bigger than me, and it also has to be bigger than just the company's success. His dream was to create technical, high value employment opportunities for people in his region. Another mentor's dream was to leave the world a better place environmentally than he found it. The "experts" would all say that both of them had succeeded, but both of them would say that it's still a work in progress. That's the neat thing when our companies are founded in the pursuit of our dreams - the dreams can always propel us on to bigger and better things.

On the plane ride home, I had time to reflect on my own dreams and motivations. Are my dreams still big enough, and important enough, to drive me through difficulties, or to motivate me beyond the complacency that often comes with moderate levels of success?

How about you - are your dreams still big enough? Perhaps it's time to think of bigger goals, or to remind ourselves of why we started doing whatever it is we are doing in the first place.

Paul Hogendoorn is president of OES, Inc. (www.OESTechnologies.com) and can be reached at phogendoorn@oes-inc.com

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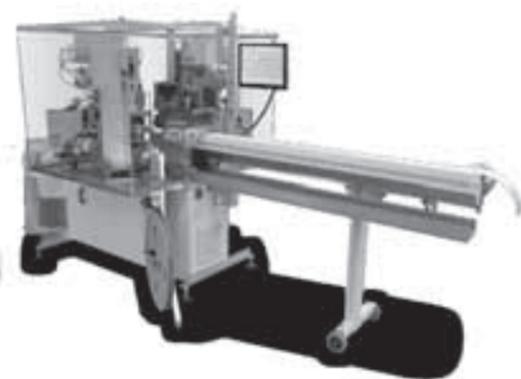


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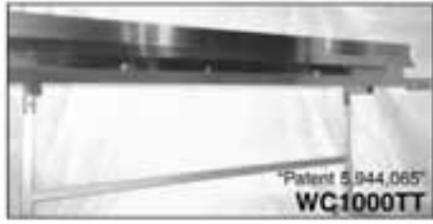
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RoHS/WEEE/ELV Directives and the Lead-Free Solder Exemption

By Joe Tito

The Basics

RoHS stands for Restriction on the use of Hazardous Substances, and is a set of compliance guidelines that went into effect July of 2006 affecting all EU member countries. The RoHS directive (EU Directive 2002/95/EC) states that no new electrical equipment entering the EU market can contain lead, hexavalent chromium, or cadmium. The directive also restricts the use of polybrominated biphenyl and polybrominated diphenyl, two types of flame retardants.

The Waste Electrical and Electronic Equipment Directive (WEEE Directive 2002/96/EC) is designed to work in concert with RoHS, by mandating the collection and recycling of as much electronic equipment as possible. The goal is to reduce or eliminate a broad range of substances from entering landfills. Producers actually have an obligation to accept back any EEE product put into the market since the directive's inception.

RoHS and WEEE are complex pieces of legislation that work together. RoHS is more concerned with the health and safety of workers in manufacturing and recycling facilities, where WEEE is more concerned with making products that result in the least amount of disposal into landfills at product end-of-life.

ELV stands for End of Life Vehicle Directive (EU 2000/53/EC LV) and is similar to RoHS in that it restricts the use of lead, mercury, and cadmium on products used in the EU automotive industry. ELV predates both RoHS and WEEE (July 2003) and covers manufacture and disposal of restricted items. An easy way to look at ELV is as RoHS and WEEE bundled into one directive covering automotive products sold in the EU.

There are no specific labeling requirements for RoHS or ELV. In order to eliminate confusion, however, many manufacturers of consumer electronics have adopted their own compliance marks such as check marks, green leaves, or "PB-Free" markings. All products covered under WEEE must carry the "Wheelie Bin" logo (fig. 1).



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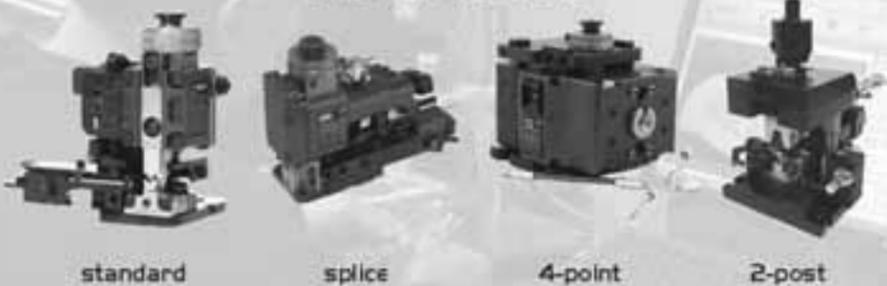
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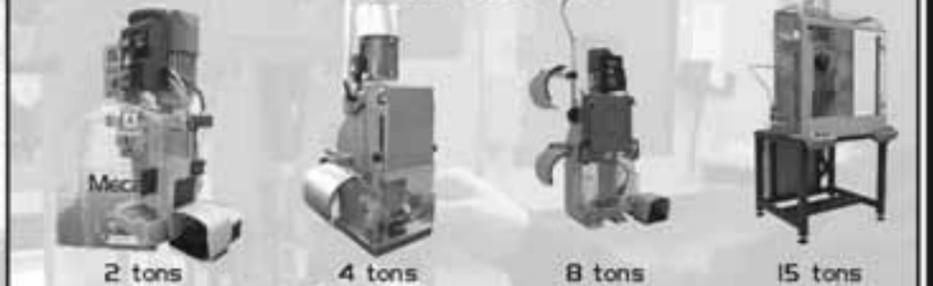
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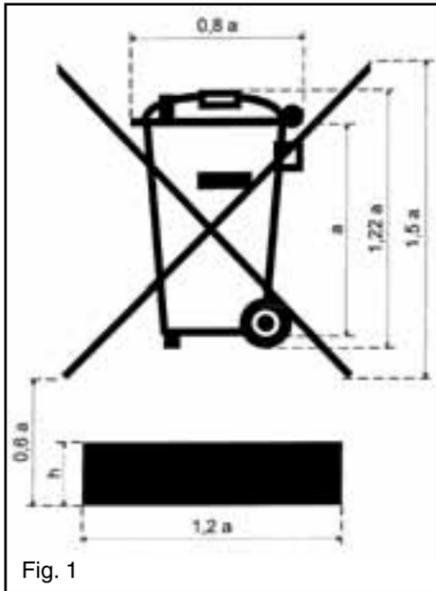


Fig. 1

Exemptions and Exclusions

It is important to understand exemptions to, and exclusions from the EU directives. With regard to RoHS, medical devices and monitoring and control equipment are specifically excluded from the directive. Exemptions are a series of applications of the prohibited substances allowed under specific guidelines. Exemptions are different from exclusions in that they are subject to review at least every four years; but could be revised more frequently based on technological advances.

Examples of exemptions to the RoHS directive would be mercury used in fluorescent light bulbs, or lead in specific solder applications. A complete list of RoHS exemptions can be viewed at www.RoHS.gov.UK. Many similar exemptions exist for the ELV, and are spelled out in Directive 2000/53/EC Annex II. Many exemptions to both the

RoHS and ELV directives regarding lead based solders were granted, and many of these expire in 2011 and 2012.

There is an order of hierarchy in these directives. The ELV directive overrules the RoHS directive. The EU Battery Directive (2006/66/EC) covers batteries and supersedes both.

Effect on US Manufacturers

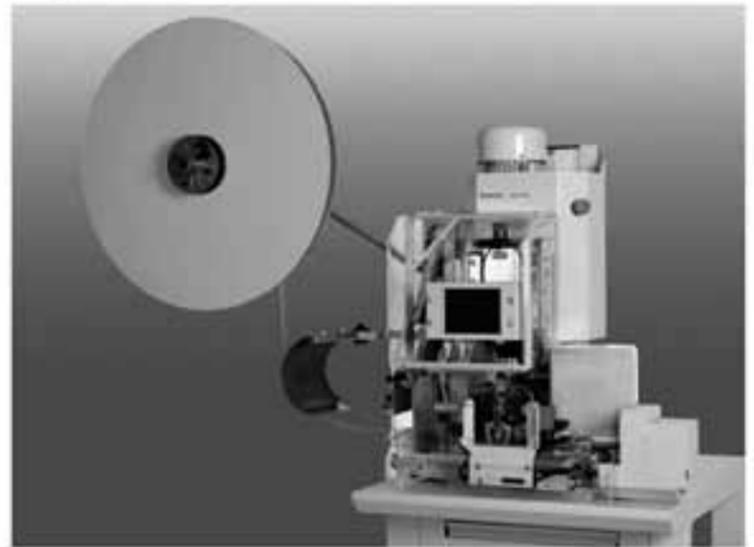
Even though RoHS, WEEE and ELV are EU directives, they do have an affect on US manufacturers. Theoretically, electronics manufacturers could develop separate product lines for the European market. The reality, however, is that manufacturers tend to consolidate design changes and manufacturing technologies on a global scale. Additionally, all manufacturers should be aware of these directives as their vendors may be supplying product absent of RoHS/ELV restricted materials. This could affect the way companies process these components.

Solving the Lead-Free Solder Dilemma at PC Systems

PC Systems is a manufacturer of wire harnesses based in Northwestern Pennsylvania. They have been supplying advanced glass connectors, and molded cable assemblies since 2001. Kalen Fitch, Engineering Manager at PCS, recently spoke with *Wiring Harness News* about current RoHS compliancy, and efforts to meet the 2012 expiration of the RoHS and ELV lead-free exemption for glass connectors.

Continued on page 9

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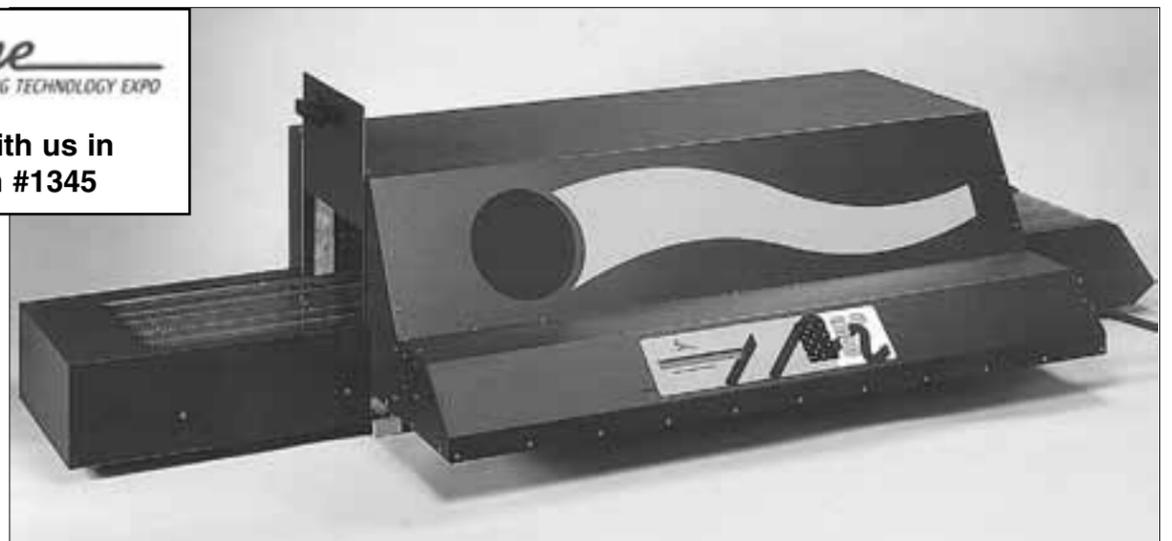
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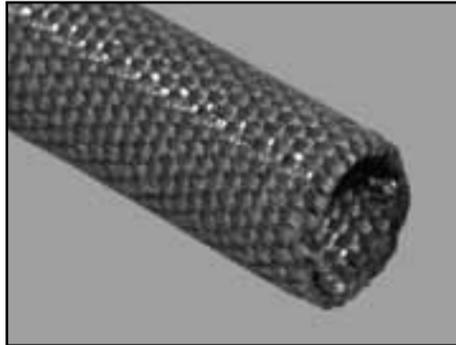
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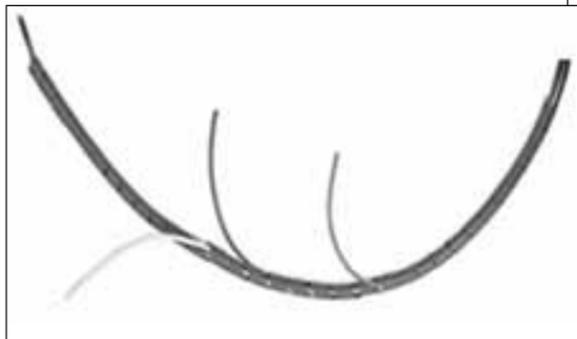
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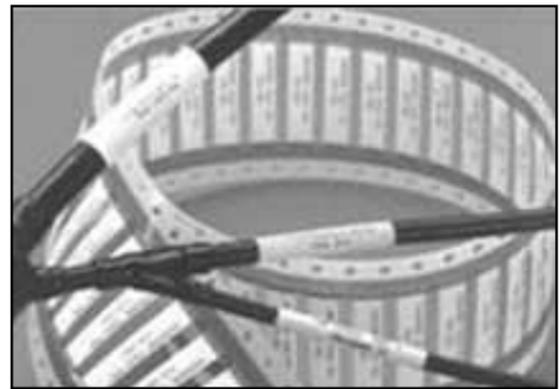
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RoHS/WEEE/ELV Directives

Continued from page 9

Ninety percent of the item codes that PCS manufacturers are already RoHS compliant. "It's always our goal to become a greener manufacturer," Fitch claimed. "But the reality is, our customers are demanding it." PCS has relied on its suppliers to provide and document RoHS compliance, said Fitch. "Our wire and terminal suppliers have really stepped up to the plate." Fitch did note an issue regarding plating requirements. "Unless 100% tin is specified on each order, non-RoHS product will likely be supplied," he advised. This has not eliminated any of PCS's plating suppliers, but Fitch noted it has likely added to their cost.

PCS has been dealing with RoHS compliance since 2004. Fitch referred to a rectifier assembly for a consumer electronic product that provided a particular challenge (fig. 2). On this product, a ferrule is placed on a flat wire braid and a hole is then punched through. "Sometimes we have to put a radius on the ferrule, and when you perform these oper-

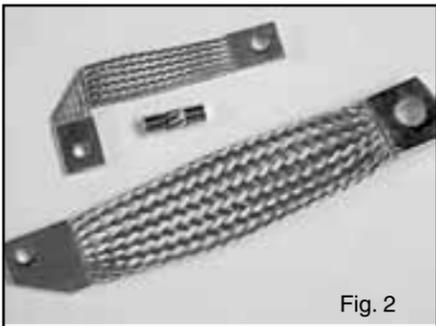


Fig. 2

ations, you expose bare copper," he described. He then explained that a common remedy in this situation is to dip the ferrule into a tin/lead solder to provide a smooth, clean, plate-like finish. "We pride ourselves in products that not only perform well, but look good too," he noted. Early experience with the SAC 305 solder at PCS provided disappointing results for this operation. The parts were tinted yellow, and very grainy in texture. "They performed well, and the customer did not complain because they needed RoHS compliant product; but we were not happy with the appearance," Finch said. "The solder quickly turned yellow through oxidation, and we were frequently dumping pots. At \$35 a pound, it got expensive."

PCS then switched to Kestor K100LD that has a low-drossing alloy to reduce oxidation. The result was much better, but still not perfect. "We then played around with different fluxes, and with Kestor's help, settled on one that provided a good result. We are now back to almost where we were with tin/lead."

But these cosmetic issues pale when compared to the challenge provided by the expiration of the ELV glass solder exemption in 2012. A significant part of PCS's overall volume is in their automotive products that have soldered leads onto glass (fig. 3). These leads are ultimately soldered to automotive glass by their customer. Because lead is so duc-

Continued on page 14

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The recent past has brought to our Industry a myriad of challenges which have forced the "status quo" to simply pack its bags and leave for good. Economic downturn and raising costs have encouraged all of us to look at things differently; certainly one of those challenges has been the cost volatility of key raw materials such as copper, the soul of our wiring industry. Along with cost factoring, other aspects, such

as wire harness weight reduction, have induced design engineers from our automotive wire harness industry to take a close look at alternative wiring materials such as aluminum based electrical cables. The future looks promising for this substitute material; however, there are no solutions without complications and without a doubt, the aluminum core cables are no exception to the rule.

One of those complications mentioned above, namely the tendency of aluminum wire cores to accumulate residue onto the wire processing blade surfaces and which causes the host machine's cutter head to seize, has been addressed by Lakes Precision in the

form of a specially designed blade which incorporates a unique geometry approach in combination with a customized metal surfacing nano-coat. The processing results of this blade design were absolutely amazing, using an off-the-shelf standard blade, the host machine cutter head seized at around 3,000 cycles and forced the user to practically disassemble the blade mounting unit in order to take out the damaged blade set. Lakes Precision's aluminum processing blade design was tested under the same conditions and ran very close to 1,000,000 cycles without a glitch. The only reason it was taken out was due to the lack of wire availability to continue the test.

It is clear now that with this breakthrough on blade design and metal surface treatment, Lakes Precision has successfully addressed the primary complication of this promising new wire harnessing material: cutting and stripping the wire at the highest industry standard requirements. Lakes Precision has a patent pending for this innovative design and stands ready to provide this wire processing solution for immediate and long term production requirements in the Industry.

Lakes Precision Incorporated, is located at Three Lakes, Wisconsin, with representation and distribution in all major global manufacturing regions. We have been the "quiet force" of innovation and service for the wire harness industry for more than a quarter century, providing a full line of direct replacement as well as customized wire process blade solutions fitting all major OEM host equipment mounts. Lakes Precision also possesses full capability of providing sub-contract solutions for your metalwork needs and specialty coatings. Its outstanding support and service capabilities are being recognized and used by all of the major wire harness producers globally.

Lakes Precision will be exhibiting at the Electrical Wire Processing Expo in Booth #1302. If you would like more information on this product or any of our other products and services feel free to call Lakes Precision at 715-546-3070 or visit us at our site www.lakesprecision.com or drop us a note at blades@lakesprecision.com



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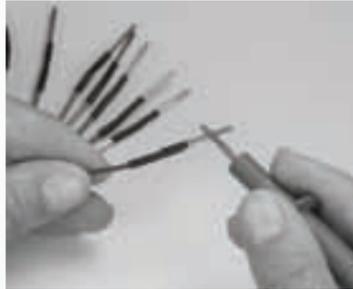


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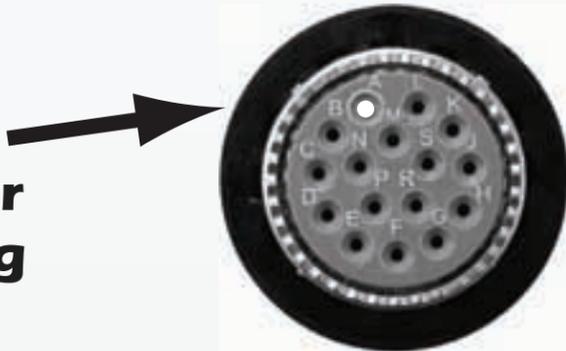
1

Touch wire.



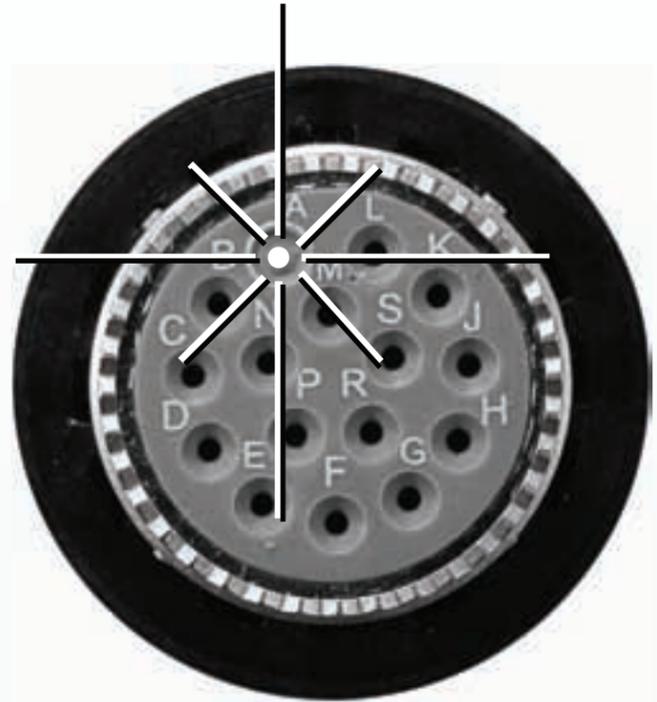
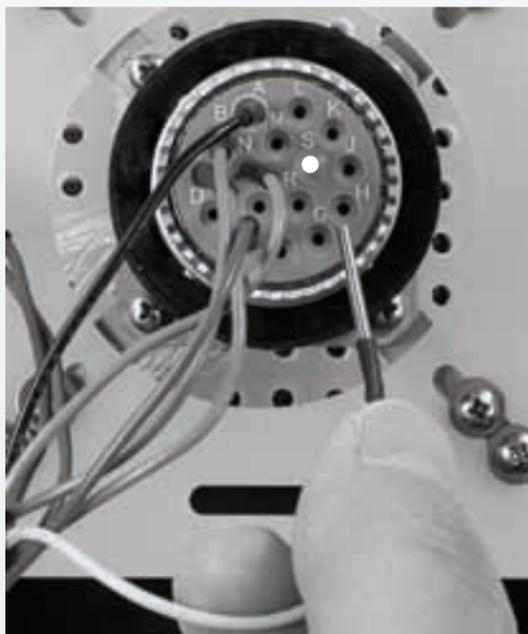
2

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3

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RoHS/WEEE/ELV Directives

Continued from page 11

tile, Fitch noted, it provides an excellent solder base for the connection of these thermally mismatched materials. Industry testing prior to 2000 suggested that SAC 305 was not a suitable alternative to lead. Fitch noted that his customer's competitor developed and patented an indium alloy to solve the problem. "They were able to convince GM and Daimler that this was the way to go," Fitch said. He noted that indium is also very ductile and provides an excellent result; but at a cost 10 to 15 times higher than lead.

The PCS crew did a lot of

research, working with the Penn State Materials Lab, to come up with a viable and cost effective solution to indium. Fitch started by pouring through some of the data from the early industry testing of SAC 305, and found some conflicting issues. "Actually, upon deeper review, I could not really find any evidence that said definitively that it would not work," Fitch contended. He found that even though the SAC 305 solder had a higher melting temperature of 182 °C, the old test data showed there was no indication of control of the solder iron temperatures. In many instances, the data showed unusually high temperatures (330 °C). Fitch was not



Fig. 3

sure if this was done to reduce cycle times, or for other reasons.

"Through in-house testing, we found that if we could control the temperate, the SAC 305 was indeed a viable lead-free alternative after all," he asserted. "We have not had the change to do thermal cycling, but we actually have greater capabilities in meeting product specifications with the SAC 305 than we did with the lead solder we used in the past!"

Fitch is quite proud of PCS's role in helping their customer solve the lead-free issue.

"We are doing everything within our power to transition ourselves into a solutions provider rather than a commodity interconnect supplier." Fitch admits that there is no magic solution for every application; and PCS may use indium, or perhaps other high ductility solders for some applications. But he remains convinced that through tight process control, PCS can offer more cost effective options to indium.

Beyond RoHS, Fitch sees the EU's REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) directive dealing with chemical content as the next major compliance hurdle to challenge PCS. "The next things to look for will be a prohibition on PVC, and an overall carbon footprint on the products a company makes." He concluded suggesting their experience with RoHS and ELV will likely provide a roadmap for success.

(Wiring Harness News would also like to note that David Gillen, Quality Manager at PC Systems, was also instrumental in compiling this report.)



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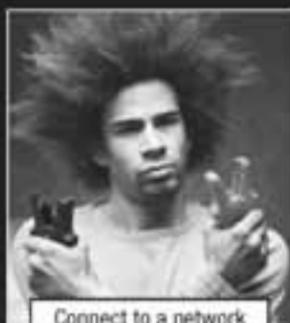
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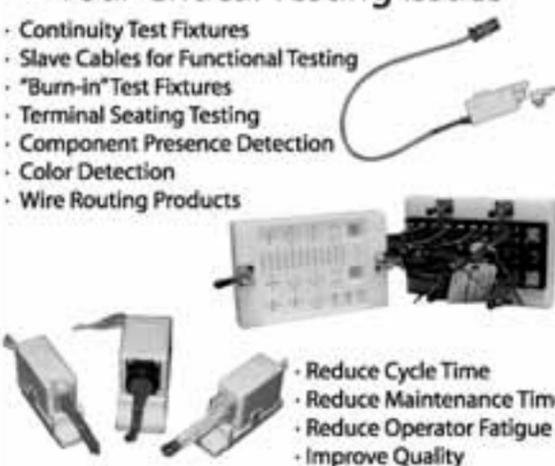


Artos Engineering

Continued from page 1

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Olsen knew there was a better way. He envisioned a machine that would pull insulated copper from a reel, measure pre-determined lengths of wire and cut it off and, at the same time, remove the insulation from both ends of the wire. Olsen's plans helped lead Artos to the development of an industry first - the CS-1 automatic wire cutting and stripping machine in 1926.

Olsen promised his company he would sell at least a dozen new machines. Through door-to-door sales, he succeeded and a new industry was about to be created. It wouldn't be long before Artos alone

would sell more than 55,000 wire processing machines.

As will happen to any organization over the course of 100 years, Artos has faced many changes, not the least of which includes two World Wars, the Great Depression, economic recessions and, perhaps most telling as the company heads into its 100th year, economic globalization.

Through it all, Artos adhered to the spirit of innovation instilled years ago by Haaken Olsen. Artos has consistently produced machines that are technologically advanced,

labor-saving, cost-effective and useful for a variety of industries and markets.

The Artos mission, proven a success for over a century, has always been to serve customers - large, small and everything in between - by engineering equipment that solves specific wire processing problems. The company currently offers a wide range of products ranging from benchtop stripping machines to fully automated terminating machines.

Today, Artos is lead by President John Olsen II, Haaken Olsen's great-grandson and the fourth generation of Olsens to lead Artos. "We're thrilled to reach this milestone," says Olsen. "On behalf of all of those engineers and other dedicated team members who have been a part of Artos over the years, I want to say 'thank you.' We're proud to serve our customers and grateful they look to us to help achieve their business goals."

Olsen pays particular attention to the company's commitment to customer satisfaction. "From day one, we have strived to offer application specific advancements that are faster, give businesses greater efficiency, reduce waste and lead to smart processes to drive the cost out of manufacturing so our customers are more productive and profitable. Our goal is to have a solution ready for our customers before they realize one is needed."

Artos has stood for reliability and service for decades. "We have to be adaptive to the needs of our industry and our customers' needs to be successful," says Olsen. "That held true 100 years ago and it's true today. We're optimistic about the future and are looking to grow both domestically and internationally."

To begin its second century, Artos is moving ahead with new product introductions that anticipate the needs of tomorrow's industries. Artos is heading into the next 100 years much in the same way Haaken started the company off so long ago. John Olsen is taking "Artos Across America" for the second consecutive summer to showcase the newest solutions Artos has to offer. They'll be taking their newest innovations directly to customers to listen to feedback and continue their mission of delivering application-focused products and excellent customer service.



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NEWS PLUGS

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S integrates standard or customer-specific modules, including those from non-Komax suppliers. All operations are controlled by ultra-flexible TopWin® software which lets the operator record, edit and create the next job while the machine is running. Integrated quality measurements check processes against specified values and automatically remove and replace any cables with defects.

The Alpha 355-S will be introduced at the Electrical Wire Processing Expo, Milwaukee Wisconsin, USA, May 18-19, 2011, Booth 1119.

For more information on the Alpha 355-S visit <http://www.komaxusa.com/home/wire-processing/crimp-to-crimp/alpha-355-s.htm> or contact Komax Corporation. 1100 E. Corporate Grove Drive, Buffalo Grove, Illinois 60089/USA. Toll-Free: 1-888-GO-KOMAX (1-888-465-6629). Phone: 1-847-537-6640. Fax: 1-847-537-5751. Web Site: www.komaxusa.com



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NEWS PLUGS continued

Gladding Braided Products Featured on Award Winning History Channel Series Modern Marvels

Gladding Braided Products was featured on the History channel's television series, Modern Marvels. A three person film crew from Half Yard Productions, a documentary film company from the New York City area, spent a day filming Gladding's manufacturing facilities.

"Gladding was thrilled to be part

of this award-winning show," said Sparky Christakos, Gladding Braided Product's President. According to the History channel, Modern Marvels celebrates "ingenuity, invention and imagination brought to life on a grand scale."

"The crew really wanted to understand our complete process, from the raw materials we purchase, to the machines we create, to the variety of products we sell. We talked wire (tinned copper, silver-plated and stainless steel), nylon braids, polyester braids, braiding machines, and the inventions and efficiency ingenuity we have created allowing us to enter into the ignition wire and

Teflon-braided suture threads industries. It was exhausting yet exhilarating. We loved sharing what we do with others."

In addition to Christakos, Gladding felt it equally important to feature additional key Gladding team members on air including factory employees, plant management (Charles Bishop and Ed Rothwell), and other divisional Vice Presidents (Mike Radziwon and Mark Jenner).

"The History Channel's timing was perfect," explained Jenner. "Gladding is about to break ground adding 8,000 more sq. feet of production space to their already large 85,000 sq. foot factory. This allows us to accommodate more quality stations and wire equipment for our expanding business.

"Our people should all be proud of this national recognition," said Jenner.

For more information, visit www.gladdingbraided.com.

MODERN MARVELS® tells the stories of the doers, dreamers and sometime-schemers that created everyday items, technological breakthroughs and man-made wonders." Since its debut on January 1, 1995, Modern marvels has featured over 500 episodes covering various topics involving science, technology, electronics, mechanics, engineering, architecture, industry, mass production, manufacturing, and agriculture.

Wezag Tools Inc. Moves to New Facility

Wezag Tools Inc. moved to a new 3000 square facility in Naperville, IL on March 1, 2011. The new facility will bring enhanced office and warehouse capabilities to allow for the continued expansion into the North American market. The new facility will incorporate a demonstration room on both the Wezag Tools Inc. line of professional crimping hand tools and the full line of WDT table top pneumatic and hydraulic crimpers. "We will be able to demonstrate to our current and potential customers Wezag's and WDT's core competency in loose piece crimping." adds Mike Lobkovich, Vice President Sales & Marketing.

Come see Wezag and WDT's full line of equipment at Wire Processing Expo Booth 1102.

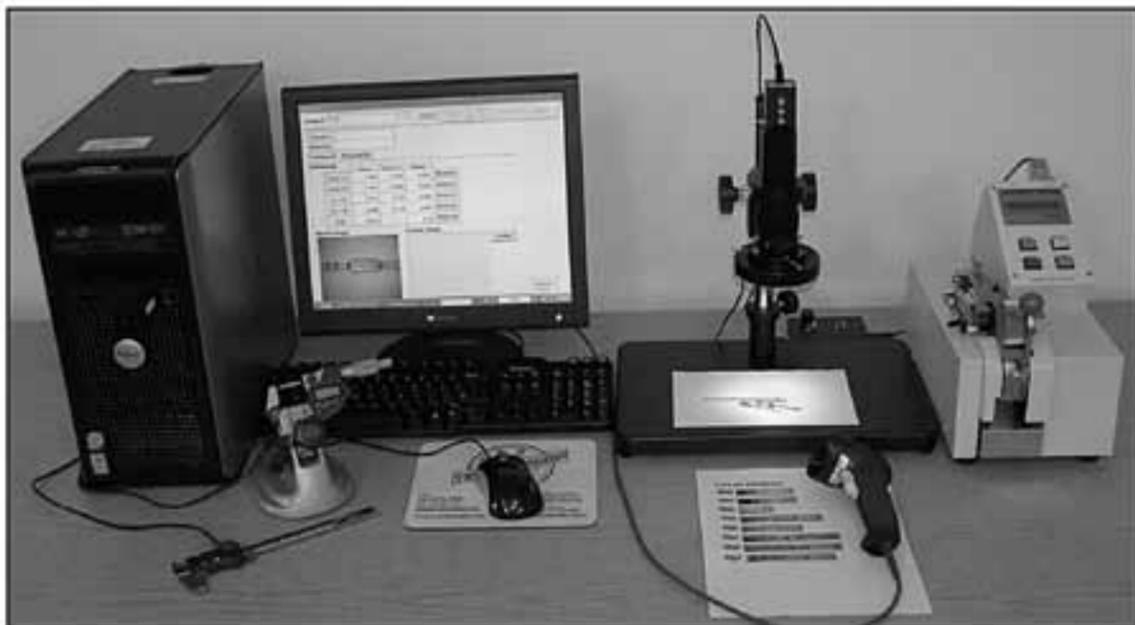
For further information contact Wezag Tools, Inc., 1865 High Grove Lane, Unit 120, Naperville, IL 60463. Visit www.wezagtools.com



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Crimp Inspection System

PC based system with bar code scanner, micrometer, caliper, pull tester, microscope and USB camera



First the operator scans the circuit number, his worker number and the machine number. The target crimp specs and master image are recovered from the hard drive and displayed. Using current production samples the operator measures the conductor and insulation crimp heights and widths. The operator measures the pull force. The operator captures an image, either cross section or terminal image. When finished the data is stored in Excel.

Set Up Master ver 1.22

Circuit # WXYZ [Release] [Print Chart] [Report Data] [Master Maintenance] [Quit]

| Dimension | Target | Target +/- | Actual | Measure |
|-----------|--------|------------|--------|---------|
| Cond. CH | 0.033 | 0.002 | 0.034 | Measure |
| Cond. CW | 0.070 | 0.002 | 0.071 | Measure |
| Ins. CH | 0.080 | 0.005 | 0.080 | Measure |
| Ins. CW | 0.088 | 0.005 | 0.088 | Measure |
| Pull | 20.00 | --- | 31.18 | Measure |

Master Image [Shutter] Sample Image [Shutter]

Save Into Excel



Scan the circuit number, operator number and machine number



Measure conductor and insulation crimp heights



Measure conductor and insulation crimp widths



Measure pull force



Capture cross section image or terminal image



cross section images or terminal images can be captured

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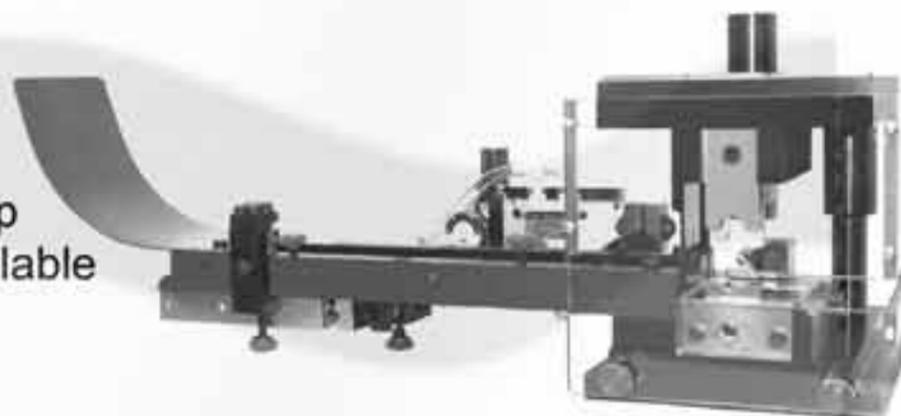


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FT-801 Thermal Wire Stripper from Hakko Products, Inc.

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For further information contact American Hakko Products, Inc., 28920 Ave. Williams, Valencia, CA 91355. Phone 661-294-0090 or visit www.HakkoUSA.com.

Commission Brokers to Exhibit at Wire Processing Expo, Milwaukee, WI

Commission Brokers Inc. of Cranston, RI, will be exhibiting at the Milwaukee Wire Processing Expo, May 18-19, 2011.

Martin Kenner, President, will be present, displaying photos and brochures of currently available used



Martin Kenner, President Commission Brokers Inc.

machinery as well as information relating to the company's appraisal, liquidation and consignment capabilities. With over 42 years of service, Mr. Kenner specializes in non-ferrous wire and cable equipment, wire harness/ process/assembly equipment, and braiding machinery, from individual components to complete plants.

Please stop by Booth # 1531 to chat or just to have a YORK Peppermint Patty. Additional information on Commission Brokers may be found on their website www.commissionbrokers.com, or phone 401-943-3777.

Mouser Named Honeywell's Americas Catalog Distributor of the Year

Mouser Electronics, Inc., a top global design engineering resource for semi-conductors and electronic components, won the 2010 Americas Catalog Distributor of the Year at the recent Honeywell Sensing and Control Annual Gala and Awards Ceremony in Orlando, Florida.

Mouser won the first-place honor for achieving excellence in several key areas: Having the fastest and most effective new product launches; the biggest increase in number of new Honeywell customers; the largest breadth of Honeywell products in stock; and the greatest percent of sales increase in Honeywell's catalog channel. Part of the Berkshire Hathaway family of companies, Mouser caters to design engineers and buyers with its rapid introduction of the newest products and emerging technologies.

"Honeywell is very pleased to recognize Mouser Electronics. They actively increased Honeywell's presence in both their catalog and on their website. That, in combination



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NEWS PLUGS continued



Continued from page 22

with their marketing programs, has helped them earn this honor from Honeywell," said Sean Conley, Director, Global Distribution Sales.

"We are very excited to win this top award from Honeywell," stated Keith Privett, Mouser Vice-President of Electro-mechanical, Power & Test. "We signed with Honeywell in 2008 and in just two short years we've achieved this notable distinction from this great company. It is a wonderful partnership and we are extremely honored to be named their top American distributor."

Part of Warren Buffett's Berkshire Hathaway Inc., Mouser Electronics, Inc. is a semiconductor and electronic component distributor, focused on the rapid introduction of new products and technologies to electronic design engineers. Mouser.com features more than 1.8 million products online from more than 400 manufacturers. Mouser publishes multiple catalogues per year providing designers with up-to-date data on the components now available for the next generation of electronic devices. Mouser ships globally to over 300,000 customers in 170 countries from its 492,000 sq. ft. state-of-the-art facility south of Dallas, Texas. For more information, visit <http://www.mouser.com>

Eraser to Display Products at the EWPT Expo 2011

The Eraser Company, Inc. is proud to be a part of the EWPT (Electrical Wire Processing Technology) Expo 2011, taking place on May 18th and 19th in Milwaukee, WI (Booth #1245). This trade show provides a great opportunity for the company to demonstrate machines from its extensive line of wire processing equipment. On display will be Eraser's Model RT2S Magnet Wire Stripper, Model C200 Wire Stripper, and the Model DCF1 Wire Stripper for Magnet & Enamel Wire. Prospects are encouraged to bring samples of their material, as representatives will be on hand for on-the-spot processing and live demonstrations.

The Eraser Company, Inc., celebrating its 100th anniversary this year, manufactures a wide range of industrial products, including the aforementioned wire processing equipment. The company also manufactures cable and tubing cutters, cable strippers, wire brush wheels, dereelers, measuring tools, and Fybr-glass® erasers. The company is ISO 9001:2008 certified, and offers a service called 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, visit www.eraser.com, or call 315-454-3237.



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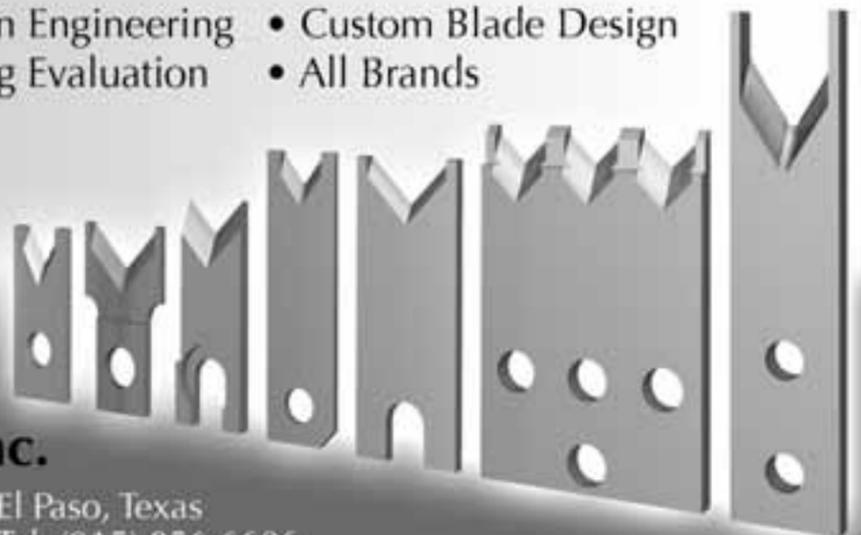
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PinPoint Chosen to Augment SRA Testing

When the Naval Air Systems Command (NAVAIR) went looking for a way to augment their current CASS (Consolidated Automated Support System) functional test system in order to lower cost and increase throughput, they needed only to look at some of the pilot programs already in place. As a result, PMA-260 (Aviation Support Equipment) of NAVAIR has designated PinPoint II-R workstation from Diagnosys as a Program of Record.

"We've been working with the Navy at a number of sites to introduce the PinPoint as a tool to return failed SRA's to the field faster as a cost effective alternative to more time consuming and costly testing methods. Developing a Test Routine (TR) using the PinPoint for fault finding can be accomplished in weeks as opposed to months, significantly reducing both the time and costs required to add a new CASS SRA Test Program Set (TPS) to the library," said Tom Popolo, Director of Sales - Defense Division, Diagnosys. "Combining the PinPoint with the legacy CASS TPSs, increases the effectiveness of fleet-based diagnostics and repair operations to return failed WRAs and SRAs to service in support of today's mission."

As more and more of the current test systems reach obsolescence, test programs for legacy products must be moved to newer functional test systems. Should a traditional functional test be required on the WRA, the PinPoint would work in conjunction with the CASS system and should still produce a savings of 40 - 50% of TPS development costs.

NAVAIR purchased the Pinpoint tester to augment CASS and future eCASS WRA testing. The Pinpoint will be used primarily for fault detection of failed components but will also assist in breaking the CASS SRA ambiguity callouts to isolate to the actual failed circuit card, thereby reducing the number of Supply actions and costs associated with No Fault Found (NFF) or Cannot Not Duplicate (CND) conditions. When used by the Fleet and Aviation DEPOTs, Pinpoint will improve current SRA maintenance by providing additional fault detection and isolation, and provide for rapid development of test programs for the Navy's Mission. Management and implementation of the Pin-

point is under the direction of Bob Augustine, Deputy Program Mgr. for PMA260 at Patuxent River Md.

The PinPoint is also being utilized to program and test circuit cards deemed "consumable" due to the either the low cost of the SRA or the high cost necessary to write a CASS TPS. A PinPoint TR can be written and the suspect card can be returned to the Next Higher Assembly for final verification. In this instance, cost savings would be in the range of 70-90% over conventional TPS programming costs.

The Program of Record designation helps define the PinPoint's role as part of NAVAIR's continuing dedication to reducing the cost of repairing

failed avionic systems and returning them to active status in as short a time period as possible. A standard Pin-Point model has already been given the National Stock Number (NSN) of 6625-01-584-7669.

Diagnosys manufactures and sells Automatic Test Equipment and Services for the test, fault finding and repair of electronic circuits. Services include solving obsolescence issues in electronic circuits and also the ability to remanufacture obsolete circuits thereby extending life of equipment.

Diagnosys products are designed to meet all levels of diagnostic

Continued on page 28

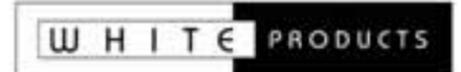
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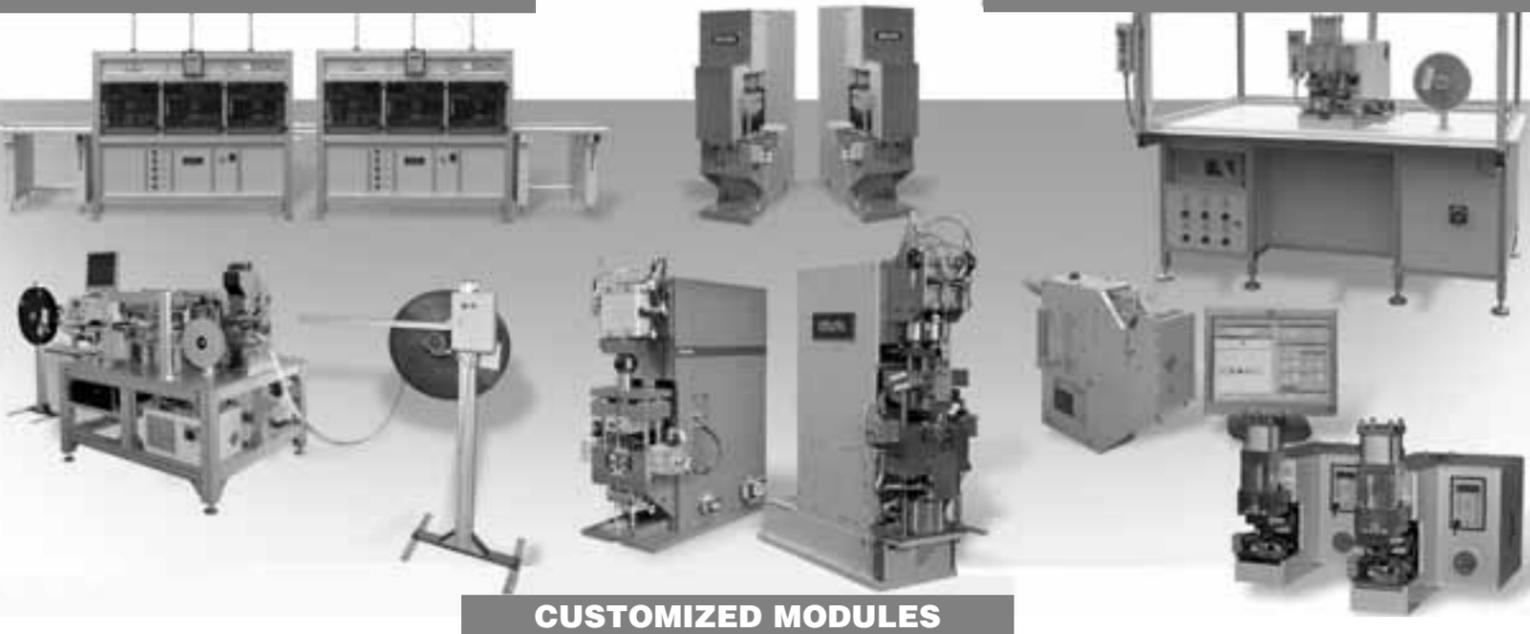


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In every issue of Wiring Harness News Anixter will bring you informative articles about wire and cable technology.

Electronic and Communication Cable Shield Concepts

There are literally thousands of shield designs used in wire and cable. Shields can be very effective at reducing interference and radiation, but they are not a one-size-fits-all solution. Using the wrong shield can cause a critical and costly failure in the field. This Wire Wisdom explains how shielding works, how to choose the correct shield for your application and the correct way to terminate a shield.

What is the purpose of a shield?

Just like a force field protects the superhero from harm in your favorite Saturday morning cartoon, a shield is designed to protect electrical signals. Shields prevent radiation of electrical noise into a cable and in turn prevent the signal from radiating out of the cable. The technical term for this signal leakage is electromagnetic interference (EMI) and is also commonly called hum, RFI or electrostatic discharge.

What shield characteristic do you need?

It doesn't matter if a shield is designed to keep interference (noise) out of a cable or inside a cable. What matters are the characteristics of the interference, the characteristics of the shield, the geometric distance between the interfer-

ence source and sink, and the shield termination method. Shields are generally very effective for all interference types. However, it is important to note that one type of interference is extremely difficult to address: magnetically induced interference. This type of interference is generally associated with power-frequency hum on cables parallel to large power cables or near transformers.

Let's take a closer look at interference that can be addressed with common electronic cable shields. Shielding is most effective against electric fields that radiate as waves traveling in a plane from a point source (similar to sound waves from a megaphone). Other characteristics of interest are the intensity and frequency of the noise. Obviously, the higher the intensity, the harder it is to mitigate, generally requiring more massive shields that have lower impedance to "drain" the interference to ground. Meanwhile, the frequency of the interference mostly affects the geometric coverage requirements of the shield. Higher frequency interference will have physically smaller waves, which allows the interference signal to squeeze through incredibly small gaps and generally requires high-coverage shields to guard against leakage.

Types of Shields

There are many types of shields available, but electronic and communication

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Manual WTT-110

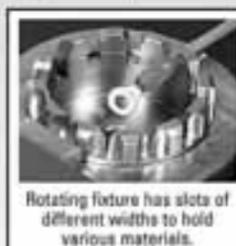
The WTT-110 is easy to use: Simply insert the wire into the appropriate slot in the terminal fixture (12 slots accommodate a wide range of sizes). Select the Peak-Hold or Continuous Measurement mode via the keypad. Then rotate the easy-glide lever clockwise, clamping the wire and creating a consistent,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



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cables typically employ only a few. The most common shield is a laminated aluminum and polyester tape wrapped around a component within a cable, which is referred to as a foil shield (Figure 1). The braided wire shield (Figure 2) is the second most common shield. The third most common shield is a combination of foil and braid layers, sometimes referred to as a combination shield (Figure 3).

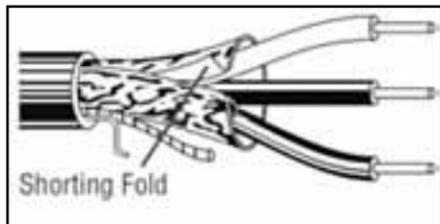


Figure 1. Foil Shielded Cable

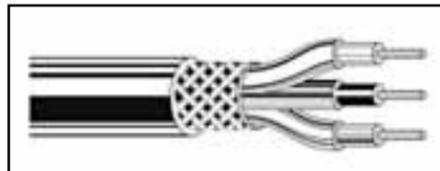


Figure 2. Braid Shielded Cable

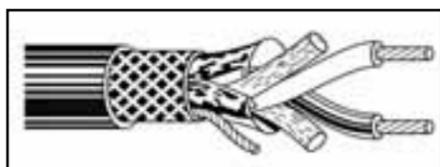


Figure 3. Combination Shielded Cable

er by gaining a basic understanding of the performance characteristics of a shield and the type of interference in question. Table 1 outlines the performance of common shields used in electronics and communication cables for different types of interference. Even though there can be a wide variation of performance depending on the quality of product as well as many other technical considerations, Table 1 (Page 30) provides some relative performance information for each of the three shields.

Foil shields generally perform better at higher frequencies because of their higher physical coverage. As shown in Figure 1, foil shields can be configured with a shorting fold that will actually allow the shield to provide 100 percent coverage. Because braid shields overlap as they are woven together, they can only reach 98 percent coverage, and in some cases, can only provide 55 percent coverage. These small gaps in coverage are what cause braid shields to be less effective against high-frequency interference. However, because braids are made from wires versus the very thin film of aluminum used in foil shields, they usually have lower impedance. This allows higher intensity interference to drain to ground easier, thus increasing their effectiveness in those environments. Finally, the farther away a susceptible wire or cable is away from the source of interference, the lower the intensity will be, which makes all types of shields more effective.

Tips for selecting a shield

Selecting the appropriate shield type can be difficult, but it can be made easi-

Continued on page 30

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ShinMaywa automatic wire terminating machine guarantees high quality not only in automotive industries but in household appliances. Halogen free wires can be processed by above all series.



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 Two models to choose from — Electric or Manual adjust
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NEWS PLUGS continued

Continued from page 25

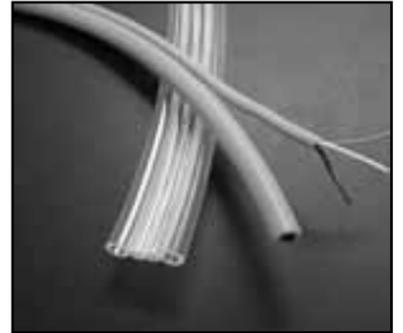
requirements, from the 'out-of-the-box' FaultFinder PCI card, to the configurable stand-alone PinPoint IIR In-Circuit Functional Diagnostic System, the S500 Scalable Test Solution for Functional Test and the S790 Series High Performance Mixed Signal ATE System.

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407-846-6416. Internet: www.diagnostics.com E-mail: info@diagnostics.com.

Grayline Inc., Showcasing New Products at Electrical Wire Processing Expo

Grayline, Inc. has been manufacturing flexible polymer tubing for use in wiring harnesses and other electrical applications for nearly 50 years! In addition to PVC and Polyolefin heat shrinkable products, Grayline also offers a variety of non-heat shrinkable flexible tubing products that are often used to bundle, insulate and protect wires and electrical components. These products meet a wide variety of agency ratings and material



Grayline Inc., Offers a variety of products used to bundle, insulate and protect wires and electrical components.

specifications, including UL/CSA, ASTM, Military, Automotive and many more.

Nearly all Grayline products are custom made to order with only a two-week lead time, allowing customers to select the optimum product design for their application, even if it means a special size, color or cut length. Grayline Application Engineers are eager to assist you in determining what product may best suit your needs.

Grayline offers tubing on reels or cut to lengths ranging from 1/8" to 144". Tubing that is cut in-line is very straight and does not exhibit the residual curvature that results from cutting tubing to length from a reel. Of course, straighter lengths of tubing often result in faster assembly times.

Grayline recently added two new capabilities – thermally bonded products and heat formed tubing. Grayline can bond tubing to wire, cable or other lengths of tubing to form composite assemblies that make for neater packaging and reduce snagging. Grayline can also form tubing to various shapes to effectively route wiring around obstacles within enclosures. Contact Grayline for more information about these exciting new options.

In addition to Grayline's lineup of tubing products for electrical applications, many customers also choose to source their fluid transfer tubing from the same supplier they have trusted with their electrical needs. Grayline fluid transfer products include medical, food & beverage, chemical resistant, and fuel & oil resistant tubing, among others.

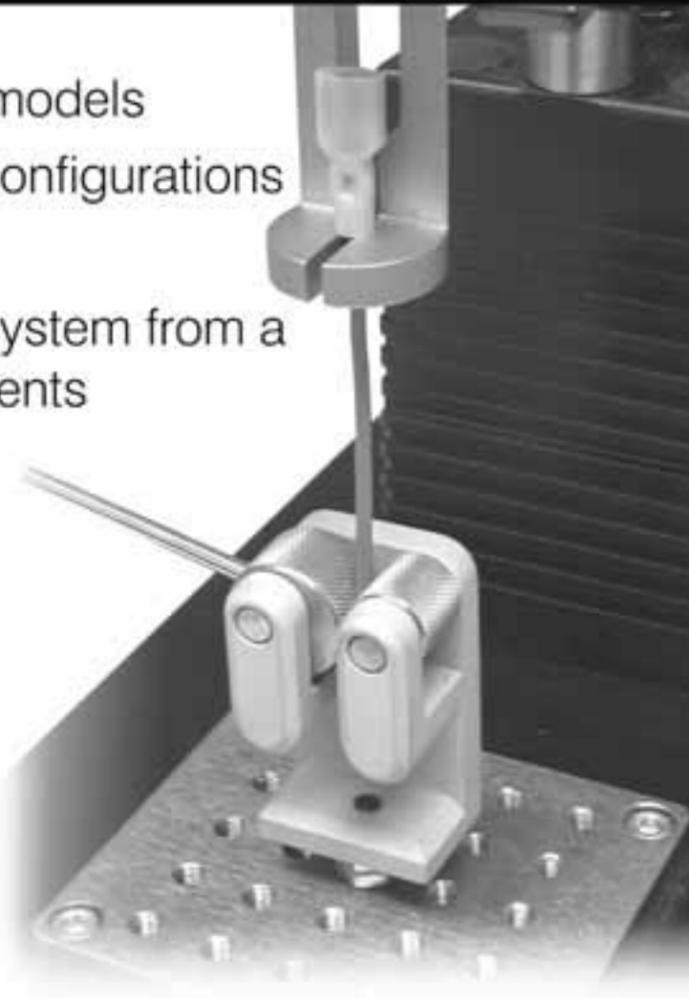
While at the Electrical Wire Processing Technology Expo in Milwaukee, please stop at Booth 1423 to learn more about Grayline products, or visit us at www.graylineinc.com.



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When Armando Zacarias goes out on a Eubanks service call, unusual things happen.

“Once I helped round up a cow that got loose in a customer’s plant.

“Another time, while driving to a customer’s site, our rep’s car caught fire. We eventually arrived there that night and finished the job in time for the morning shift,” Mando reports.

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.

Mando exemplifies the Eubanks business experience—highest-quality, U.S.A.-built wire strippers and markers backed by dedicated people itching to solve your wire problems.

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Continued from page 27

The big question: how do you terminate the shield?

The most often asked question about shielding is, "How do you terminate it?" There is a rule of thumb in the industry that says a shield should only be terminated at one end, which is generally the head-end or the common grounding point, not the device-end. The rule of thumb is based on solid logic, too. If a shield is terminated at both ends of a

cable, you run the risk of creating an unintentional ground loop. The farther the distance between the ends increases the risk of a ground loop, which actually induce interference (noise) onto the signal of an electronic or communication cable. Worse yet, high-current ground loops can even fry the cable. Still, there are many applications where the shield termination at both ends is either beneficial or even required. If you are unsure, consult the equipment manufacturer or an Anixter representative.

| Interference Type | Aluminum and Polyester Foil Shield | Copper or Tinned Copper Braid | Combination Foil and Braid Shield |
|-------------------------------|------------------------------------|-------------------------------|-----------------------------------|
| Low Intensity Low Frequency | Fair | Good | Excellent |
| Low Intensity High Frequency | Good | Fair | Excellent |
| High Intensity Low Frequency | Poor | Fair | Good to Excellent |
| High Intensity High Frequency | Fair | Poor | Good |



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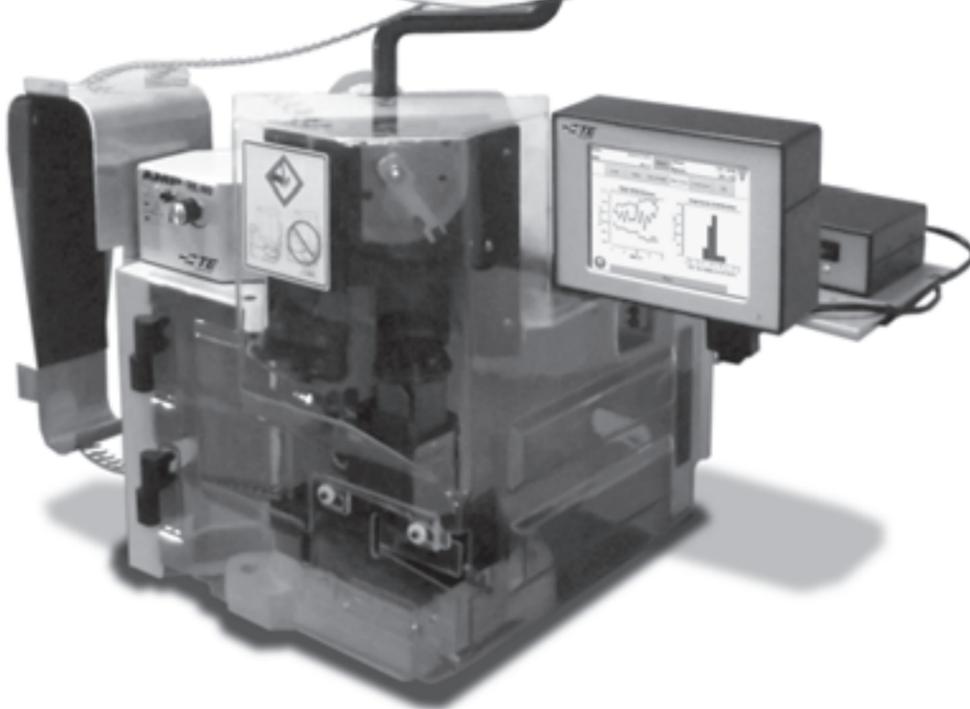


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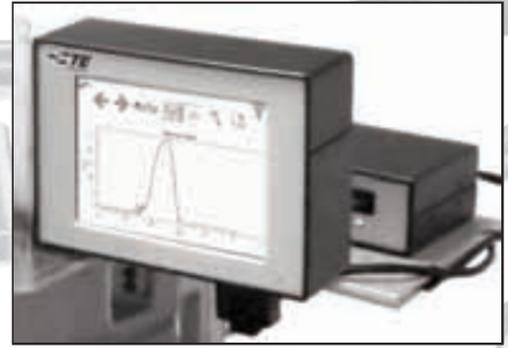
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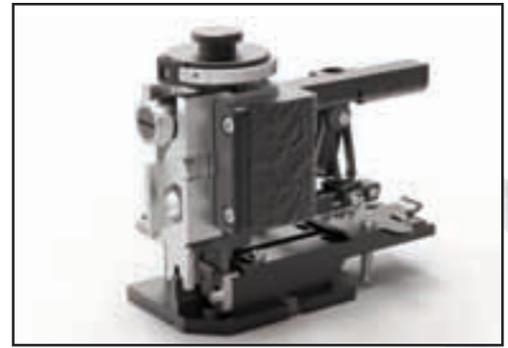
Visit TE Connectivity at the
2011 Wiring Processing Expo in
Milwaukee, 5/18 - 5/19, Booth 1139



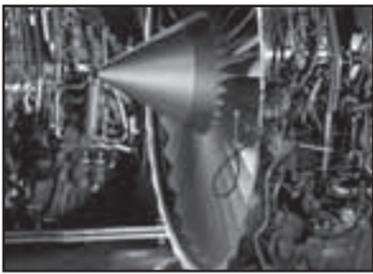
**New Crimp Quality Monitor II
(CQM II) from TE Connectivity**



**The AMP 3K/40 and AMP 5K/40
Terminators accepts the New
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AMP 3K/40 Terminator



The AMP 3K/40 Terminator is based upon the field proven AMP-O-LECTRIC Model "G" Terminator and is the latest in the series of machines for terminating wire using reeled terminals and contacts. As a value oriented terminator, the AMP 3K/40 Terminator is designed for customers that require the increased output and quality of a semiautomatic machine at a competitive price. By incorporating the most commonly requested features as a standard and offering a long list of optional equipment, this terminator offers flexibility to meet the specific needs of various applications at the lowest possible cost.

The AMP 3K/40 Terminator was designed with speed, convenience, and ease of use in mind. The design accepts the new TE Applicator Series and has the crimp force capacity of 3,000 pounds and is capable of crimping 32-14 AWG wire.

An AMP 5K/40 Terminator is also available with a 5,000 pound crimp force and is capable of crimping 32-10 AWG wire.

Call your TE Connectivity sales professional at 888-777-5917 or 1-717-810-2080 for a demonstration of the AMP 3K/40 Terminator with the New TE Applicator and see how your factory can improve with its use.

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NEWS PLUGS continued



The GMT232 Splice Crimping Tool Has Been Qualified to M22520/37-01

Daniels Manufacturing Corp (DMC) has received QPL status on the GMT232 hand crimp tool qualifying the tool to M22520/37-01 for military use. The GMT232 crimps AWG sizes 12 (yellow), 16 (blue), and 20 (red) splices for low profile environmental splice applications (M81824/1-XX). (A gage for this tool has also been qualified to M22520/39-01.)

This precise tool is ratchet controlled to ensure full crimp force (40 lbs) is applied; the handles will not open until they have been fully closed and the crimp completed. The jaws are equipped with a locator which is configured to hold the splice in the correct location while either wire is being terminated. The rugged construction of this tool assures repeatability and durability.



GMT232 Splice Crimping Tool

In addition to meeting the MIL Spec, the tool produces crimped assemblies that comply with the IPC/WHMA-A-620-A Industry Guidelines for Stamped and

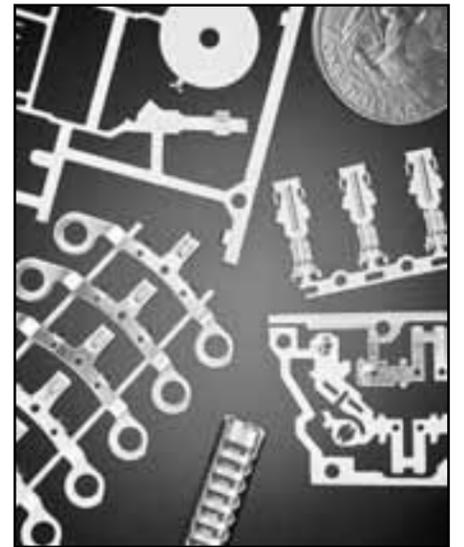
Formed-Closed Barrel-Insulation Support Crimps. The GMT232 is 8 3/4 inches long and weighs .75 lbs. It is sold individually or can be included in DMC's Wiring System Tool Kits. All DMC tools are made in the USA.

For more information, contact Daniels Manufacturing Corp (DMC), 526 Thorpe Road, Orlando, Florida 32824, 407-855-6161, DMC@DMCTools.com, www.DMC-Tools.com

Custom Electrical Terminals Meet Form and Function Requirements

Custom engineered and manufactured electrical terminals that can be matched to specific OEM function, size, material, and packaging requirements are available from ETCO Incorporated.

Continued on page 34



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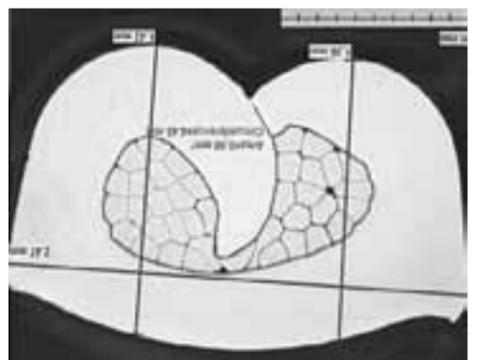
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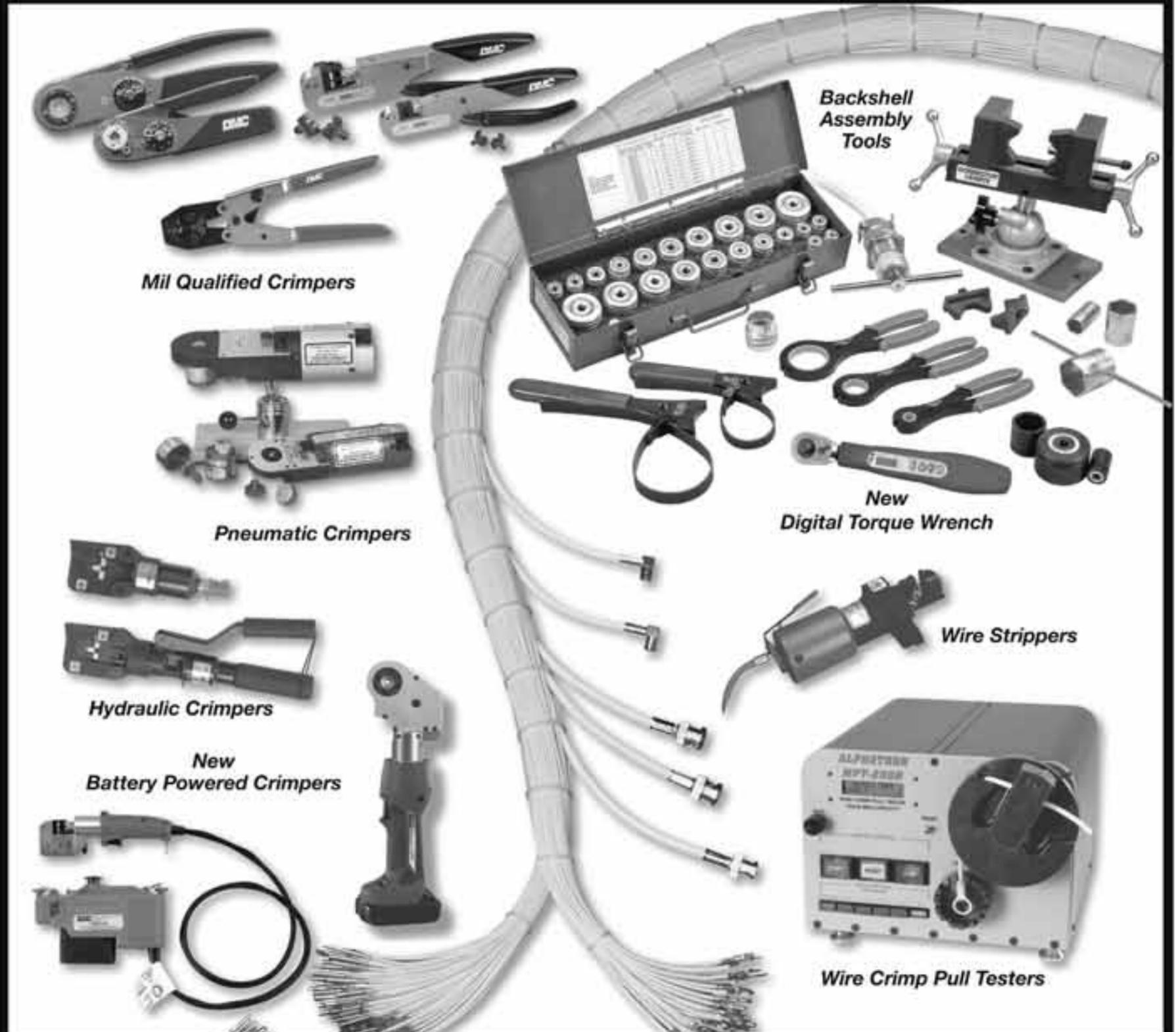
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NEWS PLUGS continued

Continued from page 32

ETCO Custom Electrical Terminals can be designed and manufactured to match

OEM assembly, environment, and application requirements with respect to function, size, material, and packaging. Developed using rapid prototyping with 3-D solid modeling analysis, special purpose terminals can be created from design through full integration with a customer's production process.

Offered with compatible application equipment, ETCO Custom Electrical Termi-

nals can be produced from materials such as brass, tinned brass, nickel plated steel, copper plated steel, phosphor-bronze and many more including clad and inlaid alloys. Sizes can range from 0.008" to 0.090" thick with tolerances to ± 0.002 ", depending upon material and design requirements. ETCO Custom Electrical Terminals are priced according to configuration and quantity; supplied in 25,000 to production quantities. Price quotations

are available upon request.

ETCO Inc., will be exhibiting at the Electrical Wire Processing Expo in Booth #117.

For more information contact ETCO Incorporated Sean C. Dunn, Vice President Marketing 25 Bellows St. Warwick, RI 02888 (401) 467-2400 FAX (401) 941-2453 e-mail: Sean.Dunn@etco.com

Union Polymer to Display Heat Shrinkable Products at the Wire Processing Expo

Union Polymer International is a fast growing company specializing in R&D and the manufacturing of heat shrinkable products with a wide range of applications in electrical, electronics, telecommunications, automotive, energy, aviation and marine vessels.

Union Polymer heat shrinkable products ensure fast and simple installation, complete sealing and insulating, and mechanical and environmental protection. The manufacturing plant has been certified by ISO 9001:2008, ISO 16949:2002 quality management system and ISO 14001:2004 environmental management system. Our products meet the CE, UL, DNV, CCS and RoHS standards.

Over the past several years, Union Polymer has worked with many companies worldwide to develop the optimal solutions for their heat shrink needs.

Products will be on display at Booth 1134 during the Electrical Wire Processing Expo event in Milwaukee May 18 - 19, 2011. For further information contact Union Polymer International, 9378 Mason Montgomery Road, Suite #219, Mason, OH 45040. Phone (513) 899-1618 or Fax (513) 823-2835. Visit www.upm-intl.com




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Solutions for seal processing

You do have choices

When it comes to fully automatic seal applicators, you have a few to choose from. Your choices have just grown as Schaefer GmbH has introduced a new seal module or SSM for fully automatic wire process machines.



Schaefer Seal Kit SSK



Schaefer Seal Module SSM with SSK

Your benefits

One of the many benefits of the SSM is it will work with seal kits that you may already own. The seal size range for the standard track in the Schaefer unit is the widest in the industry. Its narrow construction saves space on your machine table, allowing for a wider variety of other modules. The SSM is designed to achieve maximum process speeds while minimizing space requirements.

Wide range is standard

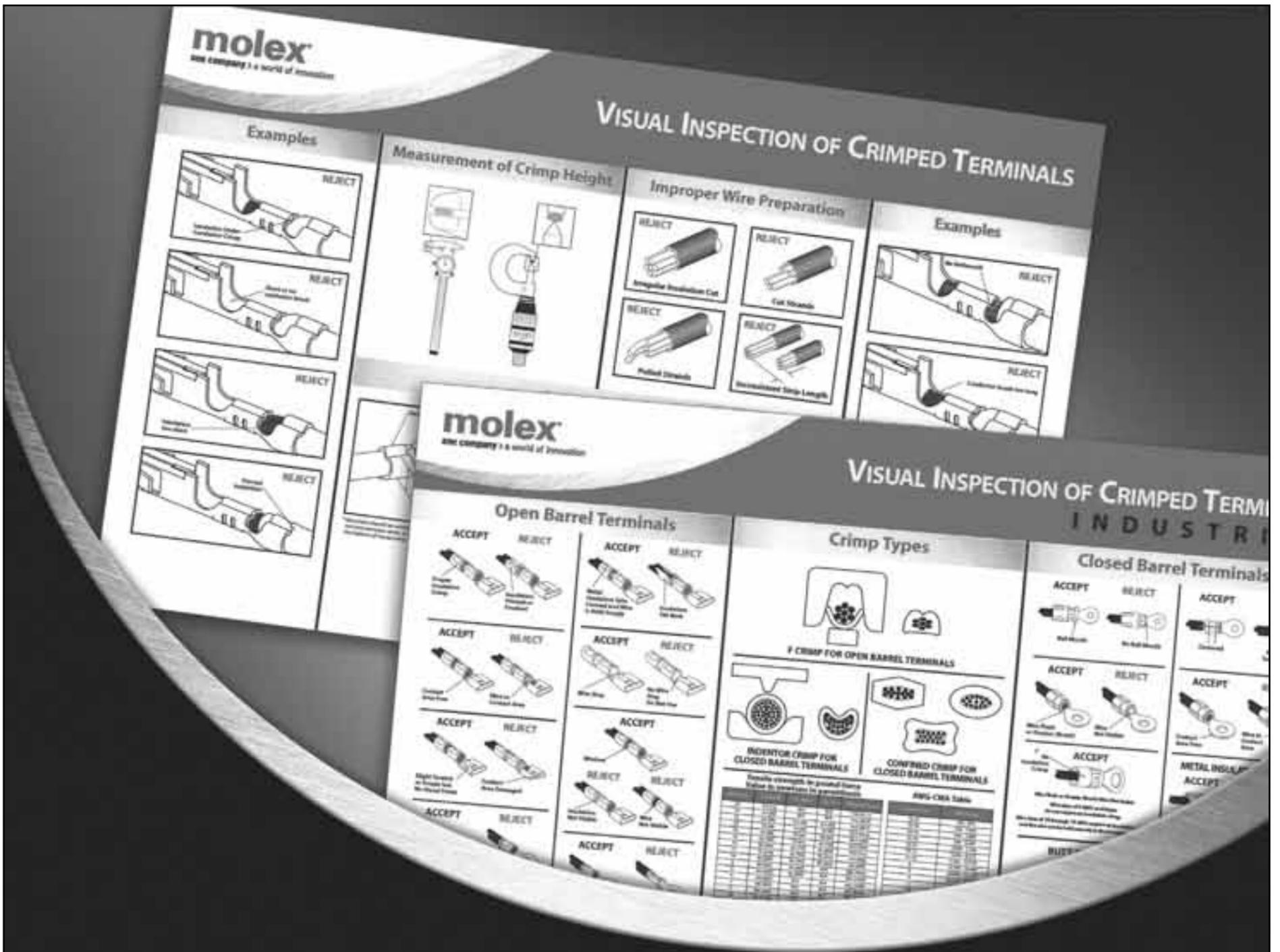
The new SSM unit can handle seals in a wider range of sizes and shapes. It is user friendly and will process seals with diameters up to 10 mm and 9 mm in length in its standard configuration. This includes many hard shell seal applications. Optional settings are available for large seals with diameters up to 17 mm and 16 mm lengths. The SSM has many other cost savings options available as well.

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NEWS PLUGS continued

New Flexiscreen Backshells Offer Light-Weight, Cost-Effective Solution

Tyco Electronics (TE), one of the leading global providers of engineered electronic components, connectors and network solutions, introduces a new high-performance family of backshells called FlexiScreen, designed to provide a light-weight solution for electromagnetic compatibility (EMC) protection for both commercial and military applications.

FlexiScreen backshells represent a significant improvement over pig-tail termination methods by providing 360-degree EMC shielding on the termination area of each individual cable. The backshell terminations can be installed to allow the cable bundle to be formed at various angles, such as 30 and 45 degrees, using a single backshell design.



Flexiscreen Backshells From Tyco Electronics

The new backshells capitalize on proven performance of existing HexaShield adapter components. FlexiScreen backshells are a light-weight, repairable, cost-effective solution, designed to be mounted on MIL-DTL-38999, 83723, 26482, 5015 or commonly used connectors.

The backshells are available in either an aluminum alloy or stainless steel with the choice of star configurations to fit your application. Finish types available are cadmium olive drab to SAE-AMS-PQ-P-416 or electroless nickel to SAE-AMS-C-26074 Class 3, Grade B. Other finishing types are also available.

For more information on TE's FlexiScreen backshell, contact TE's Product Information Center at 800-522-6752. Follow us on Twitter for all the latest product news @TycoElectronics.

FlexiScreen, HexaShield, TE (logo) and Tyco Electronics are trademarks. Other product or company names mentioned herein might be trademarks of their respective owners.

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Today's manufacturing and robotic applications require wire and cable products to withstand strain, as well as constant flex and stress. The Mueller Group provides "Smart Solutions" that will increase the life time of equipment, improve productivity and reduce machine downtime. With our expertise in international logistics, importing, currency exchange and metric conversions, we help eliminate confusion and headaches and save businesses considerable time and money.

Please visit our Booth 1506 at the Electrical Wire Processing Expo in Milwaukee, WI on May 18 & 19, 2011. Jay Mueller, President, and John White, National Sales Manager, will be on hand and look forward to meeting you. You can also visit us on www.muellergroup.net



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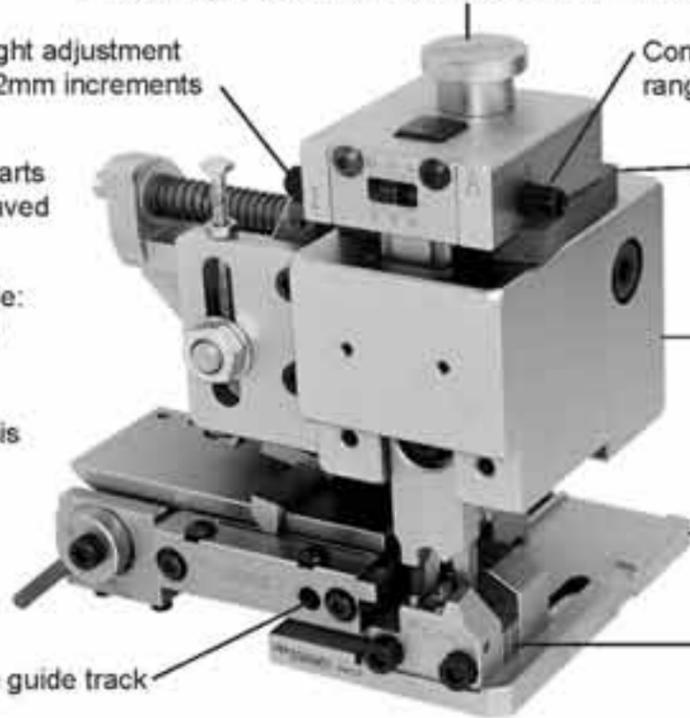
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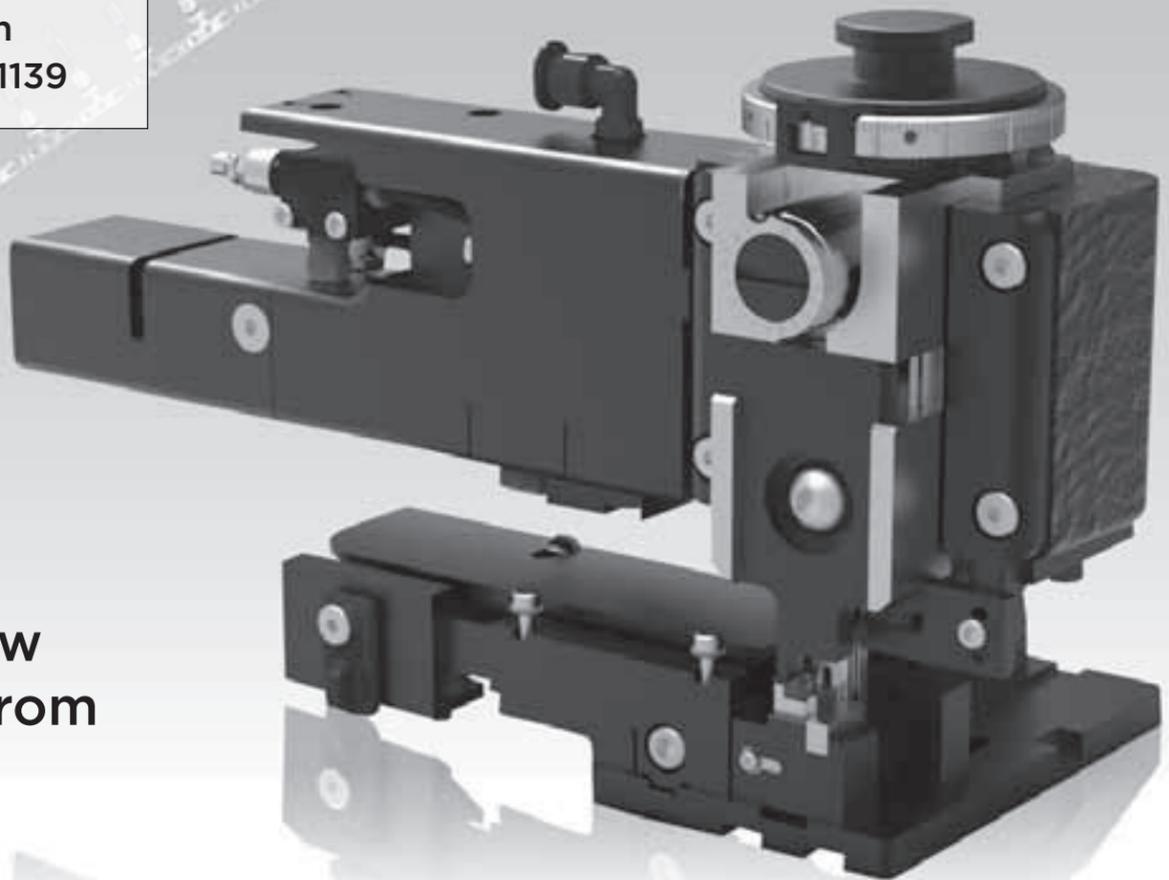
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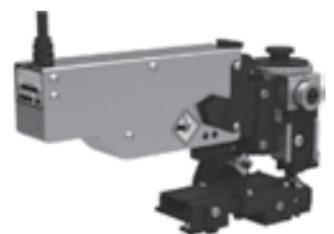
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NEWS PLUGS continued**Manufacturing Photovoltaics**

Photovoltaic manufacturing is still undergoing change in terms of technology and materials. Production costs per module need to come down to a more profitable level whilst maintaining durability and enhancing performance and functionality. AMI is organising the 2nd international conference on Polymers in Photovoltaics 2011 from 12-14 April at the Maritim Hotel in Cologne, Germany to discuss these issues. Senior Consultant, Kerry Satterthwaite will outline the market situation and future prospects, and lead manufacturer Solarfun will talk about the latest developments in modules.

A wide range of polymer materials is in use in solar modules in functions such as backsheets, silicon encapsulants, sealants and adhesives, and innovative front sheets. Multilayer, multi-material structures are now common for backing sheets with different functions provided by each layer. Industry standards are being developed by bodies such as Underwriters Laboratories and TUV with flammability and weathering performance testing. Polymers offer flexibility in production and use, however they must be properly specified and selected and there must be good inter-material adhesion and compatibility under the high performance conditions of moisture, sunlight, wind and snow in different areas of the world.

Renolit Belgium has entered the market with innovative backsheets including an integrated encapsulant layer for crystalline silicon PV modules. PET is increasingly being used in backsheets, so much so that a shortage is being predicted in the marketplace. Toray Films Europe supplies advanced PET films for photovoltaics. Saint-Gobain Performance Plastics supplies a range of materials for solar applications and is looking at lightweighting options with plastics components. On the manufacturing side, Davis-Standard supplies extrusion expertise and equipment for encapsulant and backsheets.

Increasingly, polymers are being used as front sheets, for example the fluoropolymers PVDF and ECTFE from Solvay-Solexis, which also find use in backsheets. Another plastic for front sheets is PMMA, from companies such as Evonik Rohm, which is being tested

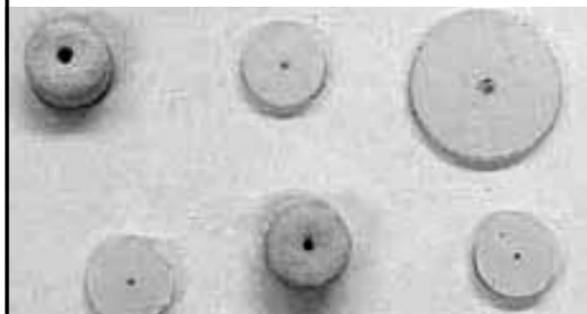
in PV, BIPV and CPV.

Sealants and adhesives are critical for module performance. The US National Renewable Energy Laboratory is involved in most aspects of module and materials testing for the photovoltaic industry, and Dr Michael Kempe has recently completed a study on testing of edge-seal materials. Saes Getters of Italy supplies a novel edge sealing "getter tape", and 3M Deutschland is a leader in these applications.

The Fraunhofer Center for Silicon Photovoltaics has studied many aspects of polymer materials, and has reviewed the processing and mechanical behaviour of the encapsulants used for embedding solar cells. ECN is another lead research institute in photovoltaics and has looked at the balance between encapsulation quality and robustness. A small range of polymers are used in encapsulation, Specialized

Technology Resources, Inc. is looking at next-generation materials. Huntsman Advanced Materials is one of the companies developing new materials and concepts for high efficiency modules. UV curing technology is being tested for encapsulants by Sartomer USA. Module manufacturing equipment is supplied by Meyer Burger Technology (Switzerland), and the company has looked at the use of EVA compared to other encapsulants for crystalline PV. In France, the Institut National de l'Energie Solaire is coordinating the European IMPRESS project, which is looking at injection moulding of encapsulants and PV frames.

For information contact Dr Sally Humphreys, Applied Market Information Ltd, AMI House, 45-47 Stokes Croft, Bristol, BS1 3QP, UK Phone +44 117 924 9442 or Fax +44 (0) 117 311 1534. Email: sh@amiplastics.com or visit www.amiplastics.com

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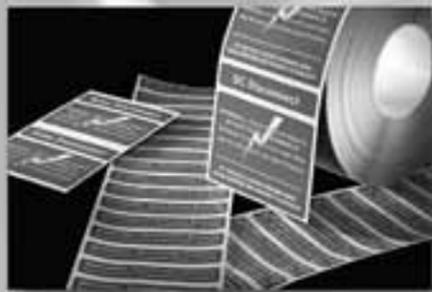
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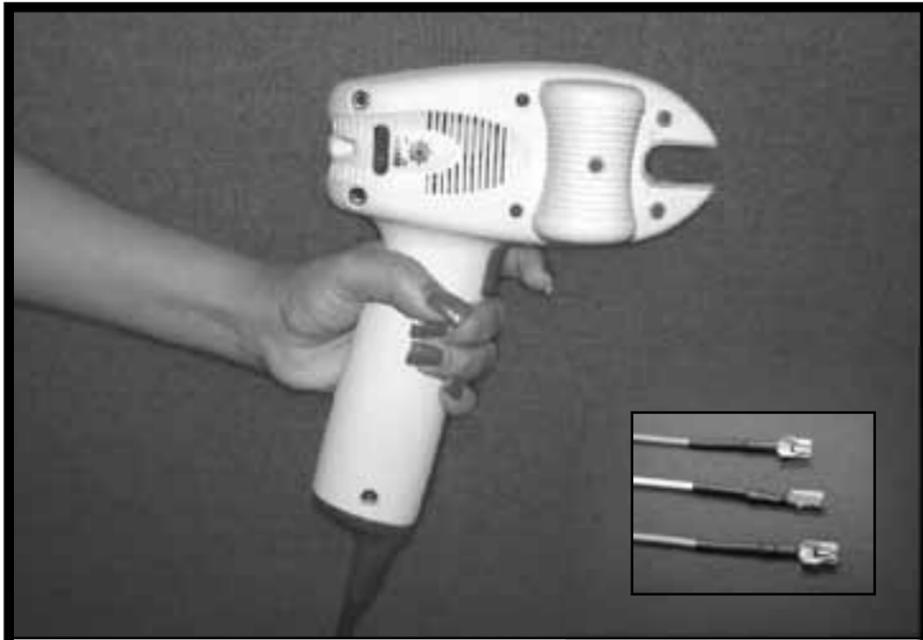
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Focus-Lite™
Heat Shrink Processing Machines

Automation of Plant Floor Processes

Continued from page 1

es, why is it that so many manufacturing plants still operate manually and under such chaotic and demanding procedures? If these steps can be bundled into a single quality process management approach, why not implement it?

The answers are tough, but it's very likely that the industry will see a majority shift in the near future as there is increasingly marginal room for error in this traditionally operator dependent environment... and more and more Tier One manufacturers are pushing the use of process automation to ensure quality.

Already we're seeing new wire processing machines equipped with process management systems that automate and streamline the setup and optimize the in-process quality monitoring systems. This eliminates potential error and unnecessary scrap associated with incorrect material and/or machine setup.

But what about existing equipment? Many companies do not have the budget for brand new machines. Legacy machines cover a large portion of the landscape of existing automatic and bench press machines. These can be

retrofitted with the recently designed technology and continue in use for years.

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The automation process starts off with a bar code scan of the work order, which then prompts the operator through a series of steps (supported by visual aids) to confirm that the correct items such as terminals, wire, weather seals, and tooling are installed on the machine. The setup validation may also include first part inspection and a pull test of sample parts prior to the start of production, which further error proofs the machine setup.

Let's address the near impossible challenge that operators face following each new setup, to manually reconfigure and optimize in-process quality monitoring systems. These systems, such as crimp force monitors and wire end inspection devices are logically integrated into this quality process management system and can be automatically configured during the setup, ensuring a high level of integrity, performance, and quality control.

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| 1 - ARTOS Model CS9 Cut & Strip Machine | 5 - OMNI 2000 MultiStation Testers |
| 1 - EUBANKS 9800 Cut/Strip Machine | 1 - OMNI Series 1 Tester |
| 1 - EUBANKS 4600-01 Flat Cable and Tubing Cutter | 1 - NEB 48-Carrier Harness Braider, DC Motor on Capstan |
| 3 - KOMAX Model 34 Bench Top Cut/Strip Machine w/smart strip update (one for parts) | 1 - NEB 32-Carrier Harness Braider, DC Motor on Capstan |
| 1 - SCHLEUNIGER Model US2015 Stripper | 3 - NEB 24-C Harness Braiders |
| 1 - KOMAX BT-711 Bench Top Crimping Press | 2 - AMP Dies, 567211-1, #280688; 567066-5, #333416 |
| 1 - MOLEX TM42 Crimp Press, Order #69002-5001 | 1 - CANNON ABT-620 Press |
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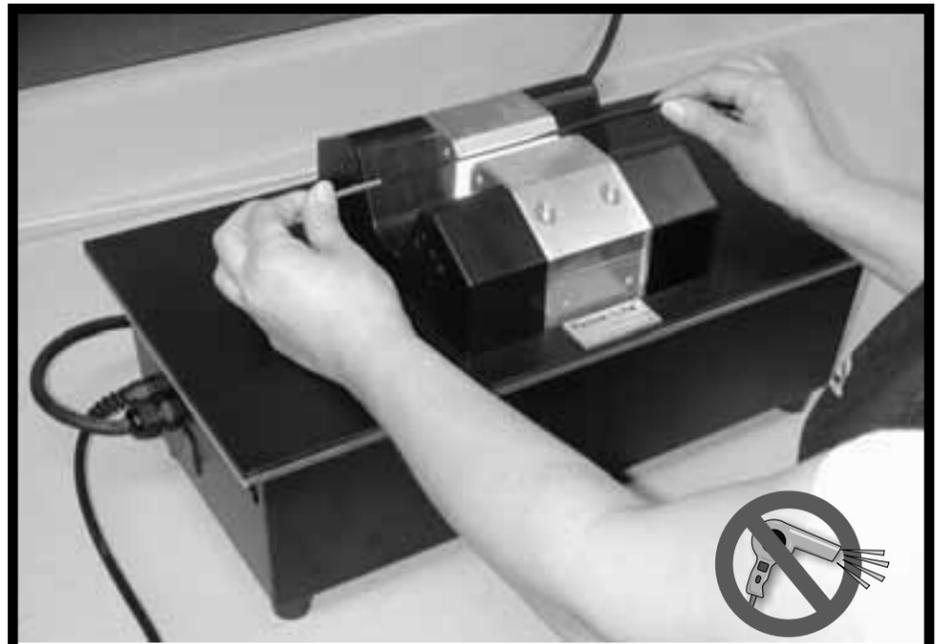
Production Reporting

Production data is captured in real time and compiled into production reports for traceability, quality, productivity, equipment utilization, and material usage.

Automating the production equipment with the work order not only supports a plant-wide process management system, but also supports cutter task sequence optimization, inventory man-

agement, and management of equipment and tool maintenance. A natural evolution of the QPM system is to automatically download the production work orders to the machine work cell based on availability. Tracking inventory would ensure sufficient material is available before a production task could commence... again a natural evolution of the system.

Continued on page 42



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Automation of Plant Floor Processes

Continued from page 41

Maintenance

There is a high desire within the industry to manage applicator tool maintenance based on usage/cycles. The applicator tools have perishable components and wearing elements, requiring maintenance and component replacement before they reach a stage of wear that may lead to defective products, unnecessary scrap, and losses in productivity. The automated quality process management system naturally integrates with the process of managing tool maintenance on a predetermined cycle count.

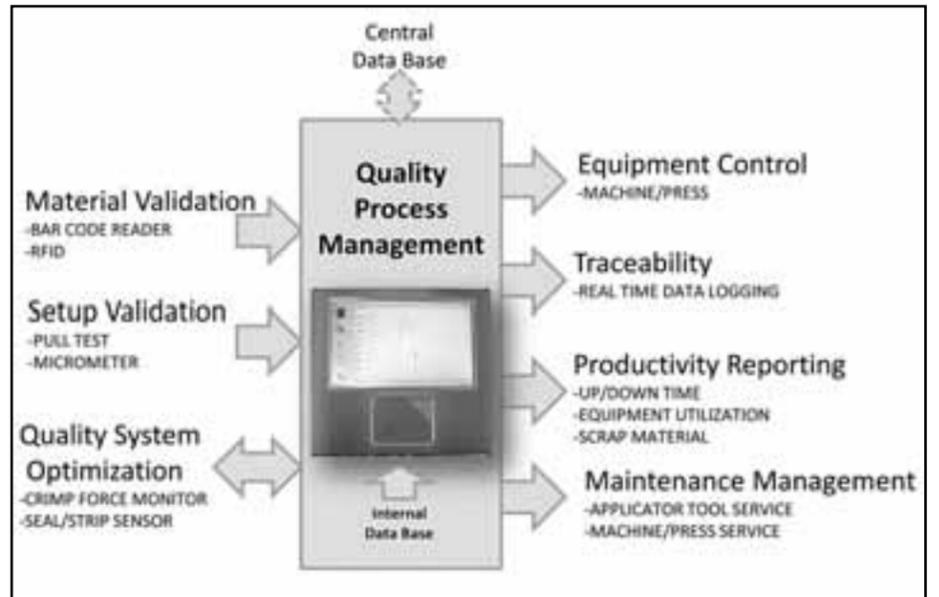
Deploying a plant wide Quality Process Management system means integrating or "bundling" technologies onto a

common platform with a customer configurable DATA BASE. This data base contains all product data - material, specifications, and even photo images or illustrations of the product which serve as visual aid for the operations personnel.

Summary

The illustration (right) highlights the common elements of a Quality Process Management (QPM) system for an existing and/or new wire processing machine and/or bench press application.

The MATERIAL VALIDATION is performed during the machine setup with a bar code reader. The scan of the work order references the data base to confirm all of the correct material.



The SETUP VALIDATION process automates the first part inspection to confirm the crimp dimension and optional dynamic pull test are within the product specification before production can resume.

The QUALITY SYSTEM OPTIMIZATION automatically configures the parameters of the crimp force monitor and/or wire end inspection device (tolerances, analysis regions, etc.) and enables these systems following the material and setup validation.

The EQUIPMENT CONTROL ensures that the wire processing machine or bench press is controlled through the setup and production process so as to only produce product that matches the work order.

TRACEABILITY occurs automatically during the production run capturing all of the production and quality data referenced by time, work order, operator, machine, shift, etc.

PRODUCTIVITY REPORTING provides summary reports of the machine efficiency and productivity.

MAINTENANCE MANAGEMENT of applicator tools monitors and manages the accumulated cycle counts and flags tools and/or presses that have reached their preset cycle count to scheduled maintenance ensuring an effective maintenance program

The potential benefits to the wire processing industry are abundantly clear - automation streamlines and simplifies plant floor processes for operations personnel; improves the production efficiency with reduced scrap and quality issues; and provides traceability and reporting in support of continuous improvement... translating into significant costs savings. Like the retail business, manufacturers will soon begin to see the results of automation in wire processing and never look back.

Michael Reeve is VP of Product Development, OES Inc. He can be contacted at OES Inc., 4056 Blakie Road, London, ON, N6L 1P7. Phone (519) 652-5833 or email mreeve@oes-inc.com

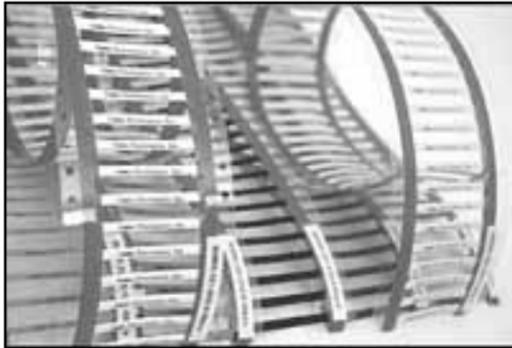
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Custom Interface

Continued from page 1

White was succeeded as president by Jane Beatty, 54. She arrived at CI two years ago as the HR manager and eventually held the position of vice president before being named president.

Beatty, who has a master's in education and bachelor of science in geology, worked the previous 12 years at Intel in Hillsboro, Ore. One of her Intel positions was business re-engineering manager for financial applications. She oversaw inventory management and receiving.

Another of Beatty's Intel jobs was executive HR manager for organizational development in the area of executive leader management. She did recruiting. She also was a portfolio manager for Intel Capital.

Yarbro, 60, is on the management team. She joined CI last July, the latest job in a career that began at Avnet in Beaverton, Ore. She did purchasing at the firm 17 years before going to cable assembler Walker Component Group in Beaverton where she served as branch manager for Oregon and Washington.

Arrow Electronics and Heilind Electronics also are located in Beaverton. Yarbro worked at both of them before being hired at CI. "In all the years and in all the



Sixty three percent of the staff is in production. Above two staff members work at one a soldering station.

places I've been I have always enjoyed what I did," she said. "Here I want to share with people how I've done things so they take less time and are done right and more proficiently."

The chief of operations is Mashawn Drew, 37. He joined CI in March 2006 to help the company build a quality-management system that could achieve aerospace certification. His role in quality assurance was expanded to head of operations in charge of production, inventory and shipping and receiving.

Drew has worked at LP Composites and Innovative Composites Engineering in the Bingen area, gaining experience in manufacturing, R&D, prototyping, engineering and production management. Early in his career he worked as a timber faller and certified nursing assistant.

"We're different from other companies because of the family orientation and unity here," Drew said. "This is not a mechanical place. There is a lot of room for personality and originality, and that pours over into our business practices so we treat customers on a more individual level."

Engagement by the 120 staff members in CI is automatic because the firm has been converted to an employee

stock ownership plan (ESOP). It takes effect in April. An ESOP means each person in the plan receives shares of CI.

Sixty-three percent of the staff is in production, leaving the 37-percent balance of executives, managers and assistants. The chief financial officer is Jeff Nicol, and the managers are: Glen Hampton, QA; Jacqueline Taylor, operations; Ofelia Sanchez, production; Javier Sanchez, manufacturing; Joseph Kusky, inventory; Kevin Callow, quoting; Gene Zitterkopf, documentation control; Robert Mack, shipping; and Nila Hill, inside sales.

The managers conduct weekly meetings that may be attended by anyone interested in the matters under discussion. "We promote employee suggestions and involvement," Yarbro said. "All input is considered. There are lots of positive changes and innovation that come out of the meetings that have done nothing but improve some of our processes."

CI grew rapidly in 2010, and the number of employees doubled. It could jump substantially again this year, possibly reaching 150-170.

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in addition to a plant tour. Assemblers spend four weeks learning processes and IPC codes.

The instruction has its benefits. "Once a worker is on the job the table leader does not have to spend extra time in training and knows where to put the person in the facility," Yarbrow said. "People also can leave before the end of training if they do not want to be here."

Harnesses and electromechanical assemblies are manufactured for such markets as audio, video, medical, avionics, automotive, solar, aerospace and instrumentation. CI can handle any quantity, from one to 20,000 or more, but high-volume

orders are filled in China at companies with which CI partners.

From a single wire with two connectors to a large harness with 258 breakouts and with costs ranging from 90 cents to \$12,000, CI covers a broad product spectrum. Wiring can be as small as 36 gauge for camera equipment used in filming "Advent Ghost," "Avatar" and the Super Bowl.

CI has 50 customers, with five new ones under consideration. Most customers are in the Pacific Northwest, although products are shipped throughout the United States and overseas.

One customer is FLIR Systems in

Portland. The firm makes night vision devices, thermal imaging systems, infrared cameras and infrared detectors for governmental, commercial and industrial markets.

PV Powered in Bend, Ore., specializes in commercial and residential photovoltaic converters. Warn Industries in Clackamas, Ore., makes winches for cars, trucks, fire and rescue vehicles and utility, commercial and industrial applications.

Insitu Group, a Boeing subsidiary in Stevenson, Wash., manufactures unmanned aircraft systems that gather intelligence, surveillance and reconnaissance data. Telecast Fiber Systems of Worcester, Mass., with an office in San Francisco, produces fiber optic systems for TV broadcast production and other audiovisual communication. Electro Scientific Industries in Beaverton makes fiber lasers, semiconductors, laser ablation systems and interconnect and micromachining products.

Customers are attracted to CI for its ITAR certification and compliance to ISO 9000:2000 and AS 9100:2009 (with certification in both later this year). "We have a very, very, very good reputation," Yarbrow said. "One major customer wrote in our annual customer survey that they throw at us what they think is impossible, but we do it."

Continued on page 46



New employees receive extensive training. In the custom design area a Custom Interface employee works on a custom designed harness.



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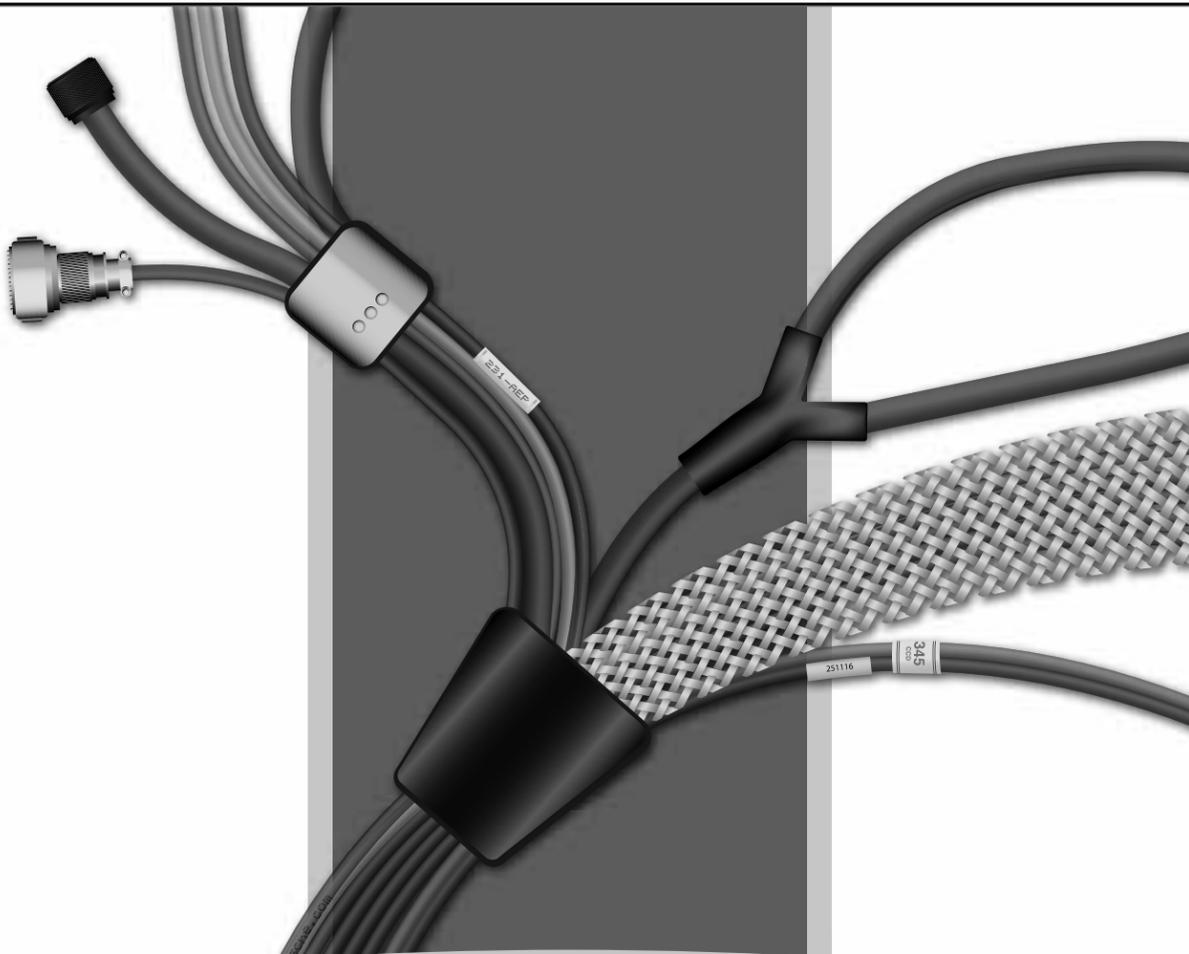
Continued from page 45



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produce the first article and four weeks for the production build. If all items are in inventory, the time is cut to 2-4 weeks.

"Some orders are driven by a supplier's ability to ship components," Drew said. "We do have flexibility in our system. Our purchasing department has done a good job getting suppliers in place."

CI is supplied by four primary distributors, and they have served the company well with quality and on-time delivery, according to Drew. Occasionally catalog houses are used.

Although the parts and components are not inspected upon receipt, they are during and after assembly. Discrepancies trigger closer examination of all aspects of inventory and production.

Quality is guided by policies laid out in a 55-page manual that details adherence to IPC/WHMA A-620 standards, documentation control, SOPs, work instructions and an MRP system. Random inspection of 10 percent of a run occurs during production.

Weekly quality reports are prepared. Lately they have shown internal quality at 22 defects per 10,000 pieces and external quality at 2.7 rejects per 10,000 items. "We are progressing solidly, and we strive to reach aerospace certification," Drew said. "We are putting more controls in place."

CI will be in a new custom-built facility in 2012. Since its founding 14 years ago CI has been in a leased 14,000-square-foot building. Growth necessitated the addition of a 5,000-square-foot leased building a block away and a 3,000-square-foot structure five blocks away for a total of 22,000 square feet.

The new building is 47,000 square feet and can be expanded to 70,000. The structure will accommodate growth of 12-15 percent yearly and will help to maintain profitability.

Not only will the building provide needed space but will symbolize the progressive attitude at CI, as noted by Yarbro: "If any company in this

economy isn't making changes and plans for growth, they probably are not going to be around. You have to see what's coming."

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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
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NEWS PLUGS continued

Schleuniger Offers the PowerStrip 9550 Automatic Cut & Strip Machine

The PowerStrip 9550 combines the utmost in precision and performance, covering a wide range of applications.

The proven precision and flexibility of Schleuniger's indexing cutter head technology has now been paired with powerful servo drives, state-of-the-art electronics and unparalleled user-friendliness. Thanks to intelligent force / speed management, the new PowerStrip 9550 easily processes wires as large as 2/0 AWG (70 mm²).

The PowerStrip 9550 processes the



PowerStrip 9550 Automatic Cut & Strip Machine

widest range of applications, from stranded wire to multi-conductor cables as well as coaxial and other shielded cables. This is accomplished by configuring each machine according to the customer's application requirements. Since the machine is modular in construction, various processing modules, such as the cutting head type, can be combined with various function modules, such as the 4-zone belt feed, resulting in a machine that is tailor made for each customer. All processing and functional modules can be retrofitted at a later date, making the PowerStrip 9550 a future-proof investment.

User-friendliness and short changeover times are other key benefits of this new cut & strip machine. It's completely redesigned user interface uses a large 10.5" color touchscreen with an intuitive menu structure, using self-explanatory

icons for fast and efficient programming. Time-consuming mechanical changeovers are a thing of the past. The PowerStrip 9550 is fully equipped with quick-change solutions for all wire-specific parts. It also incorporates the new SmartBlade™ system, where an exchangeable cartridge holds all blades and tools (e.g. the universal slitting unit) required to process a specific application. Precision and flexibility meet power, speed and user-friendliness – making the PowerStrip 9550 the first model in a new class of cut & strip machines.

More information can be found at www.schleuniger-na.com. Should you have any questions, please e-mail sales@schleuniger.com or call (603) 668-8117.

Ultrasonic Metal Welding Technology for the Solar Panel Industry Helping to Support America's Energy Independence

America's search for greater energy independence is receiving a helping hand from Sonobond Ultrasonics.

According to Melissa Alleman, the company's vice president, Sonobond's MS-5010PV Ultrasonic Photovoltaic (PV) Modular System is playing a vital role in the growth of the solar panel industry. She says, "All Americans like the idea of clean energy and less reliance on oil. So we are pleased that our ultrasonic technology is helping to accomplish these goals. Sonobond's Ultrasonic Photovoltaic (PV) Modular System is perfect for welding aluminum foil to the metallized glass on the photovoltaic cells that com-

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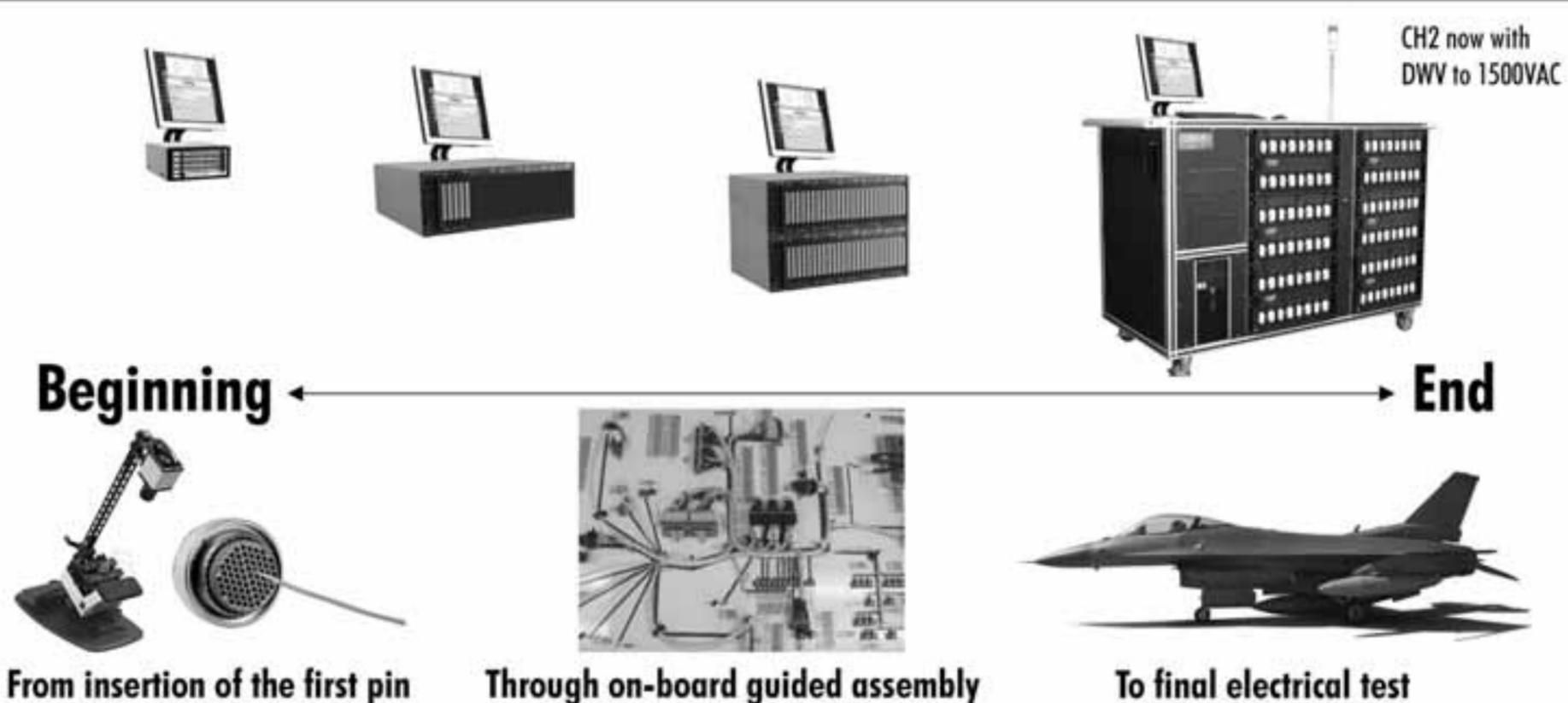
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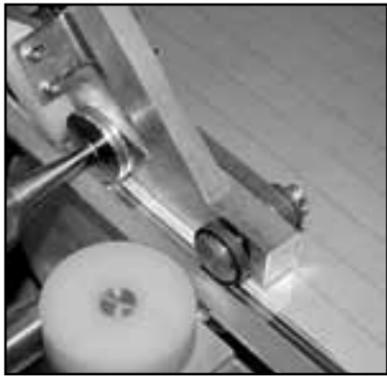
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Sonobond's MS-5010PV Ultrasonic Photovoltaic (PV) Modular System welds aluminum foil to the metallized glass on the photovoltaic cells that comprise solar panels. The resulting interconnects generate an array with excellent conductivity.

prise solar panels.

Our equipment creates an ultra-reliable, solid-state metallurgical bond. The resulting interconnects between the PV cells generate an array with excellent conductivity."

Ms. Alleman goes on to say, "More and more manufacturers are relying on this Sonobond equipment because it is fast, efficient, and cost-effective. They are especially impressed by the fact that our high-frequency (50kHz), low amplitude Ultrasonic Photovoltaic Modular System does not distort materials or crack the glass panels in the PV cells. They also like our technology because it is easy to operate with only minimal training. In short, manufacturers of solar panels enjoy significant savings in terms of time, resources, and production costs."

Sonobond's MS-5010PV Ultrasonic Photovoltaic (PV) Modular system is designed for easy integration into the production lines of solar panel manufacturers.

The unit consists of an ultrasonic head with a rotatable welding disk and a power supply. The head has a keyed shaft which can be used to rotate the welding disk at the same speed as the advancing photovoltaic panel. In addition, the system's power supply features a solid-state frequency converter and automatic tuning control. This eliminates the need to manually adjust the frequency. Sonobond modules are typically placed at each side of the traversing panel. Manufacturers can choose either the standard 110-volt system or a 220-volt system. Power consumption is only 100 watts.

In speaking of Sonobond's hands-on approach to helping its customers, Vice President Alleman says, "We understand that

each installation is unique. So we work closely with manufacturers by providing in-depth technical support before, during, and after installation. Our commitment to customer service is second to none. It's an important aspect of providing first-class products that set the pace for our industry."



Sonobond's MS-5010PV Ultrasonic Photovoltaic (PV) Modular System

The Sonobond MS-5010PV Ultrasonic Photovoltaic Modular System produces seam welds by applying mechanical vibratory energy under pressure. The process takes just seconds, while using no fluxes, tapes, solder, or other consumables. Solar panel manufacturers find that this ultrasonic bonding process offers substantial advantages in the production of the solar cells used to make up solar panels. In addition to its speed, the process is environmentally-friendly, economical, and does not produce excessive heat.

For additional information about Sonobond's products or to learn about their free, no obligation Ultrasonic Welding Viability Test, visit the company's website at www.SonobondUltrasonics.com or call 800-323-1269.

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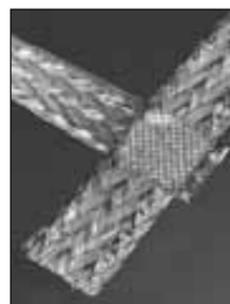
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NEWS PLUGS continued



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AG Devices, Inc. Provides Solutions and Services to OEM's and Cable Shops

AG Devices Inc, parent company to Flat Cable Solutions, was founded in the late-1960s by Arthur Goldsmith in La Fayette, N.Y. Rick Schaefer was employed at the firm in the 1970s before moving to Colorado to work for Ball Aerospace and then, two companies that developed the first 2.5" and 1.8" computer hard drives. He stayed in touch with Goldsmith and in 1994 bought his company and moved it to Colorado.

Flat Cable Solutions ships hundreds of thousand of individual pieces of over 450 individual flat cable assemblies and products to more than 600 OEM's and cable shops world wide. Flat Cable Solutions often provides a product to cable shops and OEMs for less than they can produce it in-house and usually a lot faster. Processes include stripping, tinning, slitting or separating, measuring, cutting, notching and terminating. Custom assemblies are available based on the customers' specifications.

Flat Cable Solutions can process standard and webbed flat cables between three-quarters inch and 20 feet long. Conductor count ranges from two to 100. Almost any gauge and pitch can be accommodated. Production runs go from one item to thousands.

Flat Cable Solutions is a division of AG Devices of Colorado Inc. AG is a premier manufacturer of flat cable assemblies, tooling, and the QuickProbe SMD tool.

For further information contact Flat Cable Solutions, 9595 Hwy 65, Austin, CO 81410. Phone (970) 835-4800. Email info@flatcablesolutions.com or visit www.flatcablesolutions.com. Visit Flat Cable Solutions in Booth #1505 at the Electrical Wire Processing Expo.

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NEWS PLUGS continued



Ground-Breaking Aircraft Wiring Repair Product Wins Innovation Award

Tyco Electronics (TE), one of the leading global providers of engineered electronic components, connectors and network solutions, was recently recognized by the US Naval Air Systems Command with an Innovation Award. The Naval Air Warfare Center Aircraft Division (NAWCAD) Commander's Awards were established to recognize outstanding teams and individuals that support NAWCAD's goals and objectives.

The Aircraft Wiring Systems Team, in collaboration with industry partner TE, as well as fleet maintainers, developed an innovative cold-applied splice (CAS) wiring repair product and tooling that reduces aircraft wiring repair time by more than 70 percent. The innovative process also eliminates all the support equipment

previously required for legacy repair methods.

Wire splicing, to replace segments of damaged wire or install new segments of wire, is the most common type of repair on wiring systems for all type/model/series aircraft. The man hours and budget savings the new cold-applied splice can provide to both military and commercial aerospace applications are therefore immense.

"This innovation is projected to save 77,000 maintenance-man-hours (MMHRs) per year for the Navy, and over 308,000 MMHRs per year across the [Department of Defense]," said Oliviu Muja, Wiring Systems Branch, Naval Air Systems Command, in the award citation.

Current aircraft are filled with literally miles of wire, which transfer power and signals to and from vital flight critical systems. Damaged or degraded wiring can have an immediate effect on safety-of-flight, combat capability and readiness. The new tool and splice methodology provides a permanent installation with

electrical characteristics that either meet or exceed current specification requirements and can be applied to the entire inventory of military and commercial aerospace manned and unmanned vehicles, including Allied and NATO partners.

The cold-applied splice's one-piece construction offers wire termination, as well as environmental sealing in a single step. Sealing is provided without the need for adhesives, tapes, grommets or

other methods traditionally used in aerospace and defense applications. Because no heat is needed, the splice can be applied in potentially hazardous places, such as in fueled aircraft.

For more information on the TE cold-applied splice, contact TE's Product Information Center at 800-522-6752.

Follow TE on Twitter for all the latest product news @TycoElectronics.



Tyco Electronics was recently recognized by the US Naval Air Systems Command with an Innovation Award for the development of a cold-applied splice (CAS) wiring repair product and tooling.

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NEWS PLUGS continued



Fourth Generation Stripax®

Weidmuller is pleased to introduce the new fourth generation Stripax® and Stripax® 16 tools for cutting and stripping flexible and solid conductors with PVC insulation, multi-conductors and thin ribbon cables. For over 30 years, the original Stripax® has set global standards as a cutting-edge stripping tool. By adhering to a process of continuous improvement, the new fourth generation Stripax® tools incorporate numerous design changes, ergonomic practical improvements, and innovations suggested by Weidmuller customers. These updated Stripax® tools display the same high quality and reliability as previous versions, with new features for

improved handling in industrial processes.

The design changes to the new Stripax® tool increase its capability for stripping a variety of PVC insulated wire ranging from 28...8 AWG. Previous models were equipped to handle up to 10 AWG wire. The Stripax® 16 has undergone all of the design changes and innovations as the standard Stripax®, with the exception of the expanded cross section capability, and is still the best choice for processing larger gauge PVC insulated wire from 10...6 AWG.

Adjusting the Stripax® tools to precisely strip any PVC wire within the compatible cross section range has been made simpler. Sliding gauges set the insulation depth and a longer strip length of up to 1". A unique new feature called "partial stripping" can be activated to leave the cut piece of insulation on the end of the wire. When preparing a flexible stranded wire, this feature prevents the strands from

fanning out, and simplifies the insertion of the conductor into wire end ferrules and other contacts.

While implementing new ergonomic improvements, special concern was given to maintaining the size and weight aspects of the Stripax® tools in order to keep fatigue at a minimum. A new detachable grip plate allows for precise and effortless tool operation by all users, regardless of hand size. Even with the addition of the grip plate, the tools remain small and light at 7 1/2" long and .38 lbs. Additional practical improvements to the Stripax® tools include a hinged protective cover on the cutting edge to prevent accidental damage to multi-conductors, removable clamping jaws to simplify blade replacement, and an integrated injector that prevents stripped insulation from sticking between the wire stop and the blade. The sleeker, more modern-looking tool also features a new Weidmuller ESG device



Weidmuller's New Fourth Generation Stripax Tool

marker frame, allowing for personal identification.

The new fourth generation Stripax® and Stripax® 16 tools are currently available using the same part number as previous models. For more information on these innovative tools, please visit the official Stripax® web site at www.stripax.com or contact your authorized Weidmuller representative. In addition to stripping tools, Weidmuller offers tools for dismantling, cutting, crimping, screwing and testing. All of these comply with the latest relevant standards and offer maximum precision and productivity.

Dynalab Test Systems Announces Enhancements to NX View

Dynalab Test Systems is pleased to announce significant enhancements to NX View. NX View is a software application that resides on a PC. Using a USB or serial connection between the PC and an NX Wire Harness Tester, NX View displays information from the tester on the PC's monitor. In addition to enhanced presentation of error messages, NX View shows the operator which connectors and cavities are associated with the displayed error using actual images of the connectors. This results in realistic, high impact visual information that effectively guides the operator through the wire harness testing process.

NX View now offers the following additional features:

- Data Collection – the NX Tester can generate a report for every wire harness that is tested and transmit the report to NX View, which stores the report on the PC.
- Fixture Board Display – NX View can display an image of the fixture board, highlighting the fixture blocks associated with the displayed error. This enables the operator to quickly identify the location of the error condition.
- Status messages – NX View can display as many as six custom messages transmitted from the NX Tester. A common use of this feature would be to display the number of wire harnesses tested.
- Instructional informa-



The "quick take-up" terminal retention feature



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tion – NX View now offers greater flexibility for displaying instructional information, which can originate from a variety of sources: documentation files, graphic files, movie files – anything that can be displayed in a web browser can be displayed on NX View.

- Flexible display – NX View now supports a flexible window docking feature, allowing the user to customize the display for maximum productivity.

- NX button controls – the four user interface buttons on the front of the NX Tester can now be accessed directly through NX View, eliminating the need for

the operator to directly interact with the NX Tester.

- Flexible cavity labeling – NX View now offers greater flexibility for displaying labels of connector cavities.

NX View is available for a free 60 day demo. For additional information, contact Dynalab Test Systems at +614-729-6550 or email sales@dynalab-inc.com.

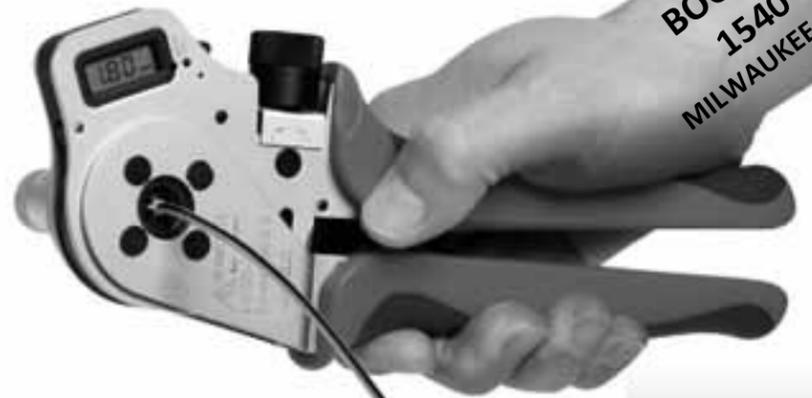
Dynalab Test Systems will be demonstrating the new features of NX View and NX Testers at the upcoming Electrical Wire Processing Technology Expo on May 18-19 in Milwaukee, WI.

More information and NX View screen shots can be viewed on Dynalab's website at: www.dynalabtesters.com/nxview



Dynalab Test Systems Offers Enhanced NX View Software

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CALENDAR OF EVENTS

Wiring Harness Manufacturer's Conference (WHMA) Westin San Diego **March 2-4, 2011** San Diego, California

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 suppliers' technology exhibits. *For further information visit www.whma.org or call (952) 253-6085.*

Aircraft Electronics Association Annual Convention Grand Sierra Resort **March 22-25, 2011** Reno, Nevada

The 54th Annual AEA International Convention & Trade Show is a unique opportunity to connect with manufacturers, distributors, technicians and business leaders as we shape the future of avionics together. *For more information visit www.aea.net/convention.*

IPC/APEX Expo 2011 Mandalay Bay Resort & Casino **April 12-14, 2011** Las Vegas, Nevada

The largest show for the electronics interconnect industry. You will see everyone from designers and printed circuit board companies to electronics manufacturing service companies to OEMs to suppliers. This even includes a premier comprehensive technical conference, professional development courses and networking activities specifically for designers, engineers, manufacturing personnel, managers and senior officers. *Contact MaryMacKinnon@ipc.org for details.*

Electronics East Boston Convention Center **April 21-22, 2011** Boston Massachusetts

Electronics New England brings you fact to face with the technical experts who can help you streamline your electronics manufacturing process and stay competitive. Electronics New England is one of the high-level pioneer discussion forums for the electronics sector. *Contact Canon Communications at 310-445-4200 for details.*

Interwire 2011 Georgia World Congress Center **May 3-5, 2011** Atlanta, Georgia

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. Interwire is ranked as one of the 200 largest trade shows in the U.S. by Tradeshow Week magazine. Interwire is the venue where buyers, sellers, researchers, and speakers connect with new contacts and colleagues. The show crosses dozens of vertical industries including automotive, construction, aerospace, transportation, and communications, among others. *Visit www.wirenet.org for exhibitor and attendee information.*

Del Mar Electronics Show Del Mar Fairgrounds **May 4-5, 2011** Del Mar, California

A high value design and manufacturing show, this event serves the electronics, medical and biotech industries. The Del Mar show's technical program offers key insights to manufacturers who have serious concerns over advanced electronic components in the medical dvies. In addition, the show will play host to an impressive list of exhibitors.

MEDCon – Medical Electronic Device Conference/Expo Navy Pier, Chicago **May 16-18, 2011** Chicago, Illinois

The Medical Electronic Device Conference & Expo focuses on specific needs of electrical and design engineers for medical devices. The conference addresses key challenges in designed next generation devices. *See www.medicaldevicesexpo.com.*

National Electrical Wire Processing Technology Expo Frontier Airlines Center **May 18-19, 2011** Milwaukee, Wisconsin

The National Electrical Wire Processing Technology Expo features new products and services for electronic cable assemblies, cord sets, wiring harnesses and other products within the wire processing industry. Meet over 100 world-class suppliers and service companies in the wire and cable processing industry. Discover the secrets to solve your wire processing problems. *Visit www.expoproductions.com for exhibitor and attendee information.*

Jl Cable Versailles, France **June 19-23, 2011**

This international conference on insulated power cables, was last held in 2007. Presenting a comprehensive forum about power cables as well as exhibits JI Cable'11 should prove very useful to the following segments of the cable industry: researchers, engineers, decision-makers, raw materials suppliers, manufacturers, installers and users. *Contact JI Cable 11 at www.jicable.org.*

60th IWCS Conference Charlotte Convention Center **June 19-23, 2011** Charlotte, North Carolina

For 60 years, the International Wire & Cable Symposium and Conference has been the premier technology event in the wire and cable and connectivity industry. The IWCS, a non-profit organization, presents an annual event in which the latest technologies in product design, materials, applications and processes are presented in a symposium format. Additionally, the IWCS program includes Professional Development Courses providing tutorials on basic and emerging technologies, presented by industry experts. The event also features the latest developments from industry suppliers in a Suppliers' Exhibition. *For further information contact Pat Hudak, IWCS, www.iwcs.org, phudak@iwcs.org or tel. 732-389-0990.*

2011 Automotive News Europe Congress Pullman Cologne **June 29-30, 2011** Cologne, Germany

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Assembly & Automation Technology Expo McCormick Place North **September 20-22, 2011** Chicago, Illinois

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For further information visit www.aatexpo.com

IPC Midwest Renaissance Schaumburg Hotel & Convention Center **September 21-22, 2011** Schaumburg, Illinois

IPC — Association Connecting Electronics Industries® will hold its annual IPC Midwest Conference & Exhibition in 2011 at the Renaissance Schaumburg Hotel and Convention Center in Schaumburg, Ill. The event will be produced solely by IPC and will feature a two-day exhibition, a technical conference and industry standards development meetings. "IPC is responding to exhibitors' needs for a regional and cost-effective exhibition and we believe the IPC Midwest Conference and Exhibition in Schaumburg does just that," explains Anthony Hilvers, IPC vice president of industry programs. "The Renaissance Center provides world-class conference and exhibition facilities with easy expressway access convenient for electronics manufacturers and suppliers in Wisconsin, Indiana, Michigan, Iowa, Minnesota and Illinois," adds Hilvers. *For further information visit www.IPCMidwestShow.org.*

Productronica 2011 New Munich Trade Fair Center **November 15-18, 2011** Munich, Germany

19th International trade fair for innovative electronics production. productronica is the world's leading trade fair for electronics production. It is the largest exhibition of its kind, and it covers the entire process chain in electronics manufacturing. Its diverse range of exhibitors and visitors give it a unique international character. Productronica is an exceptional gathering for market leaders and newcomers alike. *For further information visit www.productronica.com.*

**If you have an event you would like to have listed here, send it to Marilyn Magowan
marilynmagowan@yahoo.com**

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May 18 & 19, 2011

Wed May 18 9:00am - 4:00pm • Thurs May 19 9:00am - 3:00pm

Frontier Airlines Center • Milwaukee, Wisconsin



YOUR BEST RESOURCE TO SUCCEED IN THIS ECONOMY

Get the competitive edge you need in today's awakening economy. See all the suppliers, solutions and technology you need to innovate your product, maximize results, improve quality, and reduce time to market. In just two days, you'll discover new technologies that will make an immediate and profitable impact on your business—at the 11th Annual Electrical Wire Processing Technology Expo.

See machines onsite and under power. Take advantage of offerings of over 100 world-class suppliers and service companies, under one roof. Meet all the industry experts and applications personnel who will answer your most challenging questions. You can't afford to miss this Expo! It's where the industry comes to connect.

Visit Us Online at: www.ElectricalWireShow.com

- ▶ Register to Attend the Show
- ▶ Take a Look at the Floor Plan
- ▶ Learn about Exciting Technical Seminars - View the Schedule
- ▶ Make your Travel Plans
- ▶ See the List of Exhibitors



BUSINESS CENTER & LOUNGE

Take a load off your feet at the Wiring Harness News Business Center and Lounge. Have a snack. Meet with a new vendor. Network with your peers.

- Free chair massages
- Fax and copy services
- Internet/e-mail access
- Leer at your competitors
- Drink with the staff of Wiring Harness News up on the scenic overlook

WHO SHOULD ATTEND?

If you're a decision maker who designs, specifies, purchases, installs, sells, maintains or manufactures electronic manufacturing equipment or you're in the wire and cable processing industry, this Expo is for you!



Network with your peers during sponsored breaks throughout the day and at the After Hours party. This year Artos Engineering Company celebrates its 100th Anniversary! Come help celebrate at the party.



SEE TECHNOLOGY ON DISPLAY

See machines onsite, under power and in production mode.

- Cutting & stripping machines
- Crimping machines
- Wire harnessing
- Connectors & accessories
- Electronics
- Fiber optic processing machines
- Cable assemblies
- Spoolers/dereelers
- Wire soldering equipment
- Assembly equipment
- Fasteners

FREE ADMISSION ONLINE



www.ElectricalWireShow.com

You don't have to be BIG to act S.M.A.R.T.



S.M.A.R.T. as in:

**Simple,
Maintenance Friendly,
Affordable,
Reliable and
Top Quality**

*Add the new touch screen for fast and **simple** setup and operation.*

Choose roller or belt drives on the same machine.



Introducing the very S.M.A.R.T. Gamma 263.

Like other Komax crimp-to-crimp machines, the new Gamma 263 offers well-know, **reliable** processes... but in a much smaller footprint.

Designed for one and two-sided crimping and one-sided seal loading, the new Gamma 263 is compact in size only, offering big features like:

- integrated **quality** monitoring systems and optional crimp force analysis (CFA/CFA+)
- a second integrated encoder for maximum accuracy of stripping and wire lengths
- an optional WPCS (Wire Processing Communication Standard) interface allowing Komax machines to be networked and easily integrated into existing production processes.

The new Gamma 263 is very **affordable** when it comes to delivering high output for the money.

Meet the S.M.A.R.T. Gamma 263 at the Electrical Wire Processing Expo, Milwaukee, May 18-19, Booth 1119.

komax

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