

This Issue Features:

- TACK Electronics
- Small Talk
- Time Away on Time-A-Weigh
- Wire Wisdom - Vertical-Tray Flame Tests



20 Years of Building Relationships at TACK Electronics

By Joe Tito
Wiring Harness News

Twenty years of growth is an impressive achievement for a business in any industry, but it represents a stellar accomplishment in the highly competitive wire harness industry. That's what's being celebrated this year at TACK Electronics Inc., in Grand Rapids, Michigan. From its humble beginnings in 1996, they are now a premier supplier of harness assemblies throughout the United States and Canada. TACK has a 20,000 square foot facility with 12,000 additional available for expansion, and has 40+ employees.

TACK is currently producing harnesses for Gaming & Amusement, Transportation, Communications, Medical, and other high-reliability applications. I recently spoke with Todd Maines, owner of TACK Electronics, to learn more about the company. Todd purchased the business from his parents, George and Linda

Maines in 2015. As TACK reaches the 20 year milestone this year, he was eager to discuss the history, philosophy, and future plans for the company.

While working for an electronics distributor, George recognized a niche for short lead time, low-volume assemblies that fell outside traditional contract manufacturing capabilities. To fulfill the need, George and his wife Linda started TACK in the garage of the family home in 1996. Todd outlined some of the difficulties in the beginning, saying, "the early years were more about surviving day to day, trying to stay afloat, and trying to partner with customers and grow with them."

George and Linda wanted their new company to reflect the family atmosphere that was so important to them. That's how they decided on the name. TACK stands for the initials of each of their children: Todd, Andrea, Charles (CJ) and Kim.

George quickly saw his propensity to build and grow relationships pay off. He



From left, Tina Maines, Todd Maines, Linda Maines, George Maines.

gained a foothold in the amusement equipment industry building bespoke harnesses for a jukebox manufacturer. That association quickly led him to some additional business in the vending industry. The jukebox products began to become less dependent on electrical harnesses, and TACK used their connections to branch into the gaming industry. "We've been partnered with one gaming company for over ten years now, and from there we have added additional manufacturers in that industry," Todd explained.

In recent years TACK has enhanced their quality and process control ability to gain an even deeper hold on the gaming industry, while branching into some higher volume wiring requirements. "One of the main reasons TACK is successful today is that we can seamlessly fill small to large orders with short lead times," Todd emphasized. He noted this ability has become increasingly important as a number of companies look back to domestic production after mixed success with overseas suppliers,

who have large order requirements and long lead times.

According to Todd, TACK has been building a strong engineering and management team to prepare the company for continuous growth. They have also greatly enhanced efficiency throughout the shop by using Cetec ERP. Through these additions, and various training programs, Todd asserted the company's ability to stay ahead of customer quality demands. "Last fall we got a grant from the state of Michigan to bring in a lean trainer for the whole company," he mentioned. "We also hired an IPC Trainer and have certified all employees to the A-620 standard."

TACK has been able to leverage these changes into the extension of several value-added services. "Our team can work with customers to determine more cost effective solutions, and we can analyze or reverse engineer existing products to offer recommendations." Todd relayed a recent situation with one

Continued on page 20

Kathy Freund Retires

It comes with mixed feelings as we announce the Retirement of Kathy Freund, our Advertising/Circulation Manager for over 18 years.

Kathy began her journey with *Wiring Harness News* when she answered an ad for office manager in 1998. She came on board at the same time the sales position was being filled. The salesperson left after two weeks, and Kathy quickly

said, "I can do that!" She began to effectively handle both the sales and book-keeping functions since that time.

Kathy helped *Wiring Harness News* succeed in several areas. In addition to helping advertisers effectively portray their businesses, Kathy helped build our strong presence at the EWPT Expo each year. Through her efforts, she has gained not only our respect and admiration,



Kathy with her pride-and-joy Mustang.
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but that of her customers.

When recently asked what she liked about the Wire Harness industry, Kathy answered saying, "When I first came to the industry it was male dominated. But I found that everybody was welcoming, and I've never felt shunned because I'm a woman."

Kathy hopes to do some traveling during the cold winters. "One of my best

friends lives in Florida and my other best friend lives in Arizona, so they're going to be seeing a lot of me!", she mentioned. But she does plan to return north to enjoy the beautiful Wisconsin summers.

We are so happy for Kathy, but we are sad to see her leave. Please join us in wishing her the best in the next steps of her journey.

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INSIDE

SEPTEMBER
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1 Tack Electronics

Read about TACK Electronics, a premier supplier of harness assemblies throughout the United States and Canada.

5 Time Away on Time- A-Weigh

Paul Hogendoorn has an amazing ability to see patterns and lessons in our everyday lives, and apply them in our businesses. In this issue, Paul takes a simple exercise in linguistics with his granddaughter and makes some excellent points about how we use information technology to communicate with our co-workers, suppliers, and customers.

7 Small Talk
Loren Smith shares with readers a few reasons wire harness manufacturers should feel entirely comfortable playing "small ball."

10 News Plugs
Read about the latest products on the market and points of interest about companies and people in the industry.

44 Wire Wisdom
Vertical-Tray Flame Tests: IEEE 1202, IEEE383, And UL 1685
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Classified

57-59..... Machinery, Job Line & Misc.
62Advertiser Index



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why do it twice when once is better

Time Away on Time-A-Weigh

By Paul Hogendoorn

Alpha. Bravo. Charlie. Delta. Echo.

I thought it would be fun to teach my granddaughter the phonetic marine alphabet. We spent a lot of time on the boat this summer, and she was fascinated with the 'old fashioned' ways still used to communicate. She was also interested in the maps I still use, the compass, and interpreting all the nautical markers on land and sea. I was equally fascinated that someone her age would be so interested in all those things - her generation has grown up with "gigabytes of data" on cell phone plans, google maps, and a host of other technologies that I personally consider overly broad and way too shallow.

Boats today have bow thrusters, stern thrusters, pod drives, joy stick controls, and GPS systems that will steer them away from danger and actually right to dock itself, automatically. (Where's the fun in that?) My boat is not that complicated and docking still requires some skill, and some assistance from someone on the dock to catch a line, especially when the wind is blowing.

"Copy that: whiskey one seven, stern in, port side tie up. Over." Now it was just a matter of negotiating a couple turns and a tricky little 270 degree maneuver in a tight space in front of the intended dock. With a simple radio confirmation of the previous instruction, everyone was all set; my granddaughter knew her role, as did the runner on dock



Paul Hogendoorn

W-17, there to catch my line. It was a windy day, and we'd have one chance to get it right. If not, we'd be driven in to the dock, or perhaps other boats. It wouldn't be catastrophic if we failed, but it would definitely leave a mark, and the goal is always to leave as few new marks on the fiberglass hull as possible.

Foxtrot. Golf. Hotel. India. Juliet.

She never had too much trouble with the first 10 letters, but I found it amusing that she didn't know what "foxtrot" meant. I told her it was an old dance, and that there'd be another dance used in another letter later on. Similarly, Juliet would also have a natural partner in the alphabet. Just a couple hints to help remember the weird collection of words.

Continued on page 6



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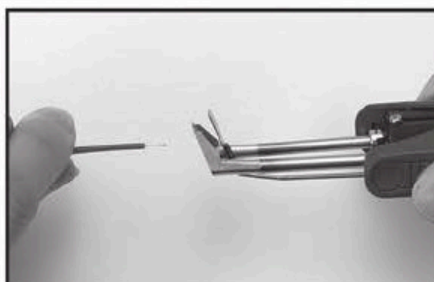
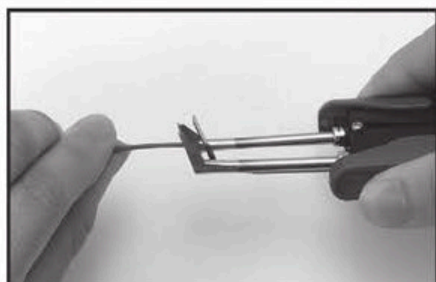
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Time Away on Time-A-Weigh

Continued from page 5 _____

She threw out the stern line at the perfect time, and the dock runner caught it. So far so good.

Kilo. Lima. Mama. November. Oscar. Some use “Mike” instead of “mama”, but my preference is “mama” because it pairs up nicely with “papa”, the next word in the sequence. Each one of the 26 words is specifically chosen so that it doesn’t sound like any other word. Some are one syllable, most two, and some three. None of them rhyme with each other, and I learned this summer, that most mariners use the same phonetic alphabet, regardless of their language.

Papa. Quebec. Romeo. Sierra. Tango, which is the other old dance my granddaughter didn’t know. After that, comes Uniform, but some prefer to use Utah.

The dock runner caught the line and put a quick hitch on the nearest cleat, allowing me to use my engines to gently nudge the bow towards to dock, close enough to toss the bow line. One minute later, the engines were off and we were securely tied, with no new scuff marks to buff out.


My vacation has been over for several weeks now, but these thoughts stayed with me. It was as fun for me to teach the basics as it was for my granddaughter to learn them, but there is another valuable lesson in there as well. We have so many layers of information technology available to us - and I don’t just mean cell phones, emails, texts and computers. We have different virtual meeting rooms, document sharing platforms, software

to schedule meetings and book rooms, and all sorts of special apps for coordinating business communications, not to mention social media. Everyone seems to get cc’d to everything. Some are tempted to call all of this information, but I think of it as mostly noise. I have missed really important messages because they are buried by dozens of unimportant messages heaped on top of them, or, because I was not using the same new ‘handy’ tool or app someone else chose to use to send me that message. To me, anything that keeps me from hearing what is critical for me to hear is not information, its noise.

Advanced information technology is good, but it’s important to remember the basics. Effective communication is not just an exchange of information, it’s making sure what needs to be known is known by those that need to know it, in a timely manner. More information technology doesn’t automatically result in better communication; it can have the opposite effect. Effective communication is concise, relevant, accurate and timely. (How does your information technology fit that description?)

Victor. Whiskey. X-Ray. Yankee. Zulu. Communications are important in business and in life, and it’s never a bad thing to revisit and review the basics. *“Thanks for the docking assist Lake City. This is ‘Time-A-Weigh’, over and out.”*

Paul Hogendoorn is co-founder of FreePoint Technologies. “Measure. Analyze. Share.” (Don’t forget to share!) He can be reached at paulh@getfreepoint.com or www.getfreepoint.com



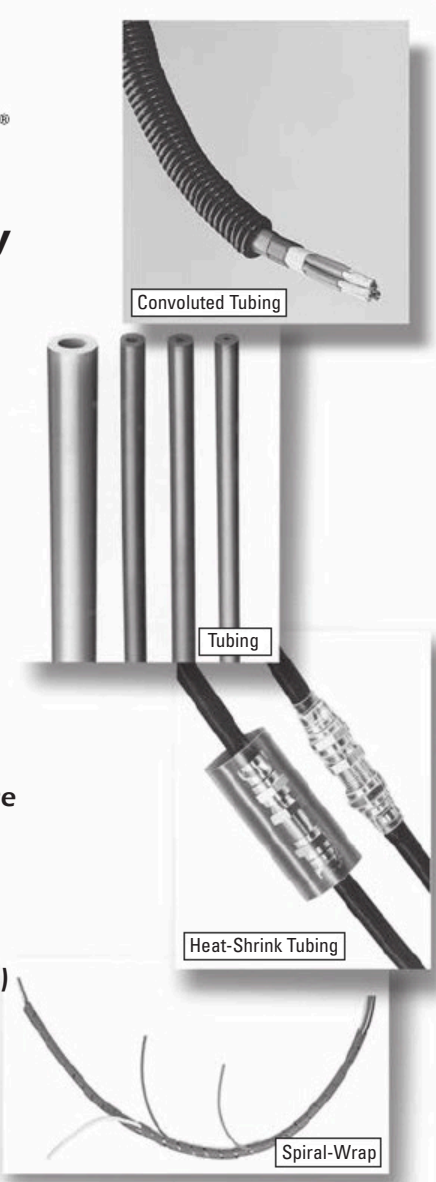
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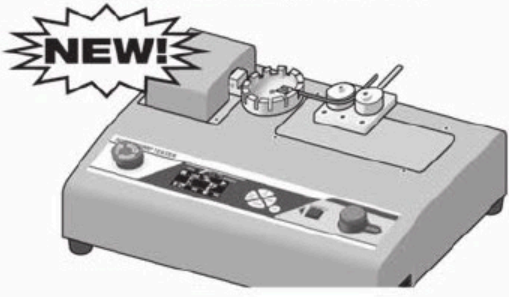
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"Small Talk"

By Loren Smith

Today's digital, interconnected world has been a business game changer in many ways, challenging the traditional perspective that "bigger is better." For example, technology has significantly leveled the playing field for key business service providers such as accounting firms, law firms and M&A firms. The advantages that large purveyors of services once held over the small guy have diminished, providing entrepreneurs with a greater variety of resources and plenty of lower-cost options. In fact, in many instances we could make the case that the small guy has an upper hand.

Let's examine, then, a few of the reasons wire harness manufacturers should feel entirely comfortable playing "small ball."

Cost

Large firms with relatively fixed overhead have an ongoing need for revenue to cover that overhead. M&A firms, for example, with extensive support services such as legions of young MBAs, research associates, accountants, lawyers, secretaries, and writers, need to generate volume and often charge substantial upfront fees to cover these services. Smaller firms, on the other hand, access these services by using the vast worldwide reaches of the Internet to find independent contractors or building a stable of affordable partners to rely on as needed.

Granted, a large firm might be preferable at times, such as when we are looking for



Loren M. Smith, CEO
Blue Valley Capital

one-stop shopping or dealing with a complex issue, but we reap savings when we have the time and ability to go small. An apt metaphor might be the choices we have with a home remodeling project. Hiring a general contractor is one route, but working directly with a competitively priced interior design consultant, painter, electrician and floor refinisher is likely to yield sizable savings.

Access

In the many years I have used professional services such as accounting firms and law firms, I have found hiring a small firm or

Continued on page 8



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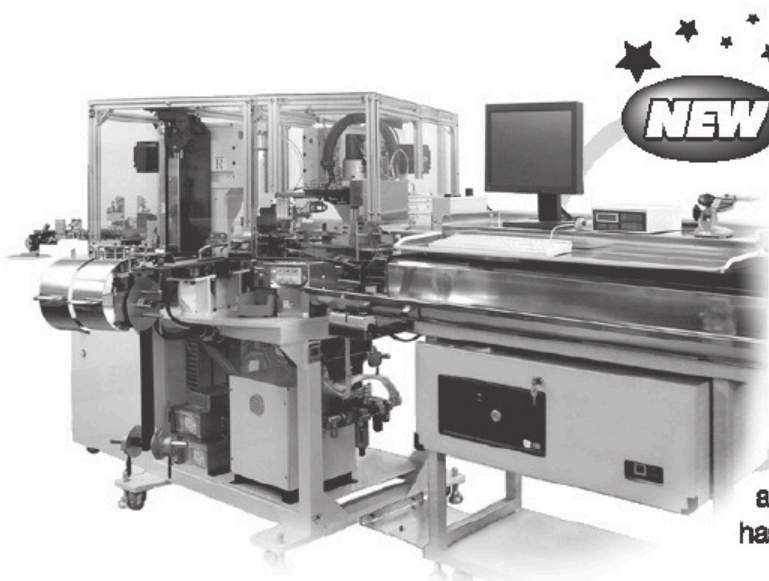
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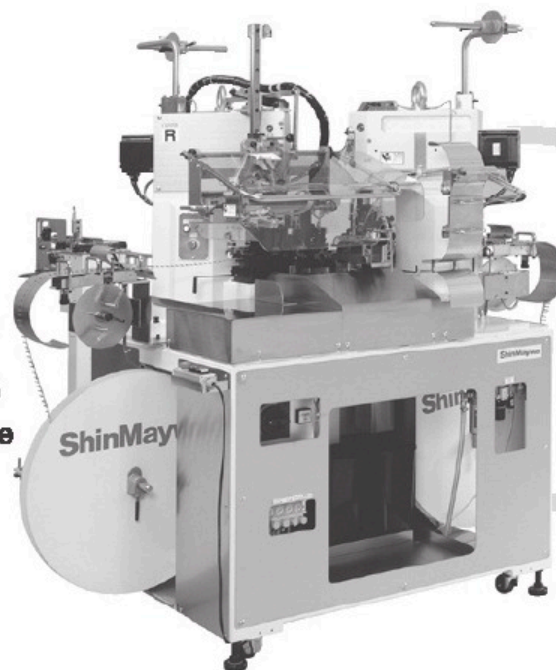
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“Small Talk”

Continued from page 7 _____

even an individual consistently satisfying. When we hire a major firm, we often deal with senior partners and do not know who is being delegated the bulk of the assignment. Furthermore, gaining access to that senior partner may not be as immediate as when we go small. Nimble firms, without layers of management, have great appeal.

Logic

We say that clichés become clichés because they contain elements of truth. But sometimes we need to apply logical thinking to a cliché to decide if it applies. Here I am thinking of the “it’s who you know” perspective and the process of selling a company. Recognizing that a large M&A firm will have extensive contacts could lead us to selecting that firm to land a buyer for our company. That firm should have an obvious advantage over a small firm, right?

Not really. Given the nature of the deal process, existing relationships with prospective buyers have limited or no value because it’s impossible to predict at any given time which prospective buyer might have an appetite for a particular deal. The only reliable process for

marketing a company is to contact virtually every prospective buyer out there (which can be done without revealing the name or location of the company) and then cultivating the prospective buyers that surface.

Three takeaways

1. Not everyone in business today applauds the digital world, but technology has given us many new advantages. Among them is the ease of identifying and verifying potential resources.
2. As a business owner, CEO or manager, you should not dismiss going small. The small outfit often brings marked advantages in affordability and access--and even commitment.
3. If you are a small harness manufacturer, shed any inferiority complex about comparisons to the big guns. Yes, they may have capacities you don’t, but you may be the nimble, dedicated provider customers want. Don’t shy away from playing that card.

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NEWS PLUGS

Schleuniger, Inc. to Exhibit Wire Processing Solutions at The Assembly Show

Schleuniger, Inc., a leading international manufacturer of high-precision wire processing machines, will be exhibiting at The Assembly Show, an assembly focused

trade show aimed at helping suppliers, buyers and users of assembly equipment in manufacturing plants connect, learn, share and explore all things assembly. This exclusive showcase will be held October 25-27, 2016 at the Donald E. Stevens Convention Center in Rosemont, IL. Schleuniger will be at booth #231 providing hands-on demonstrations of innovative solutions for stripping, cutting, crimping and marking all types of wire and cable.

For the first time at The Assembly Show, Schleuniger will demonstrate the

2015 Productronica innovation award winning, CoaxCenter 6000. The CoaxCenter 6000 is the first and only fully automatic machine for processing micro-coaxial and coaxial cables as well as single conductor wires. The machine's QCam 360 automatically monitors stripping quality, eliminating the need for time-consuming manual post-production monitoring processes. In addition, the CoaxCenter 6000 also achieves extremely high productivity. The output of this machine is at least three times higher than with manual and semi-automatic equipment and requires considerably lower personnel and handling requirements.

In addition, Schleuniger will be introducing its Wire Harness Assembly Lines to the North American market. Wire Harness Assembly Lines are typically used for high volume wiring harness assembly in automotive, appliance and other markets. In addition to the industry standard rotary type assembly lines, Schleuniger offers

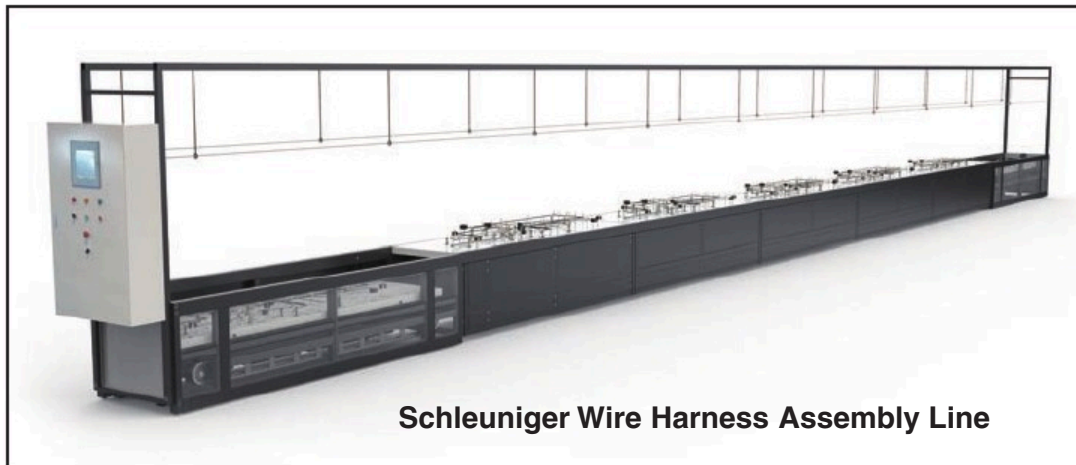
space-saving transverse type and horizontal lift type assembly lines, which save valuable floor space in factories due to their innovative design. Wire Harness Assembly Lines can be custom made to fit existing wiring harness boards or offered in a range of standard sizes. Both single and double sided versions are available. A simple user interface allows customers to set the line speed, keep track of the production rate and any stop time. All Wire Harness Assembly Lines can be customized with respect to the number of working stations, line speed as well as optional lighting and operator start/stop controls. With so many models and variations, Schleuniger can provide a Wire Harness Assembly Line for your exact requirements. Visit the Schleuniger booth to learn more and to see a miniature scale version of the horizontal lift-type wire harness assembly line in action.

Schleuniger will also show its newest cut and strip machine, the EcoStrip 9380.

The EcoStrip 9380 offers the most complete feature set at an economical price point. It can be configured with rollers or belt transports and the configuration can be quickly and easily changed by the operator. The unique 3-position design of the optional belt feeding system further enhances the customer's capabilities and can be set for normal mode, roller mode or short mode processing – depending upon the application. The EcoStrip 9380 is also compatible with a wide range of accessories, including prefeeding, marking, stacking and coiling, which turn the stand-alone machine into a fully automatic processing line.

Schleuniger will also be demonstrating the Mercury-4 laser wire stripping machine, designed by Laser Wire Solutions. The machine strips wires and cables ranging in size from 50 – 6 AWG. This innovative machine does not require any mechanical adjustments to process different wire sizes. Using the color touch-screen, the operator selects the desired stripping parameters from the programmed library and all parameters (strip lengths, laser power and speed, etc.) are automatically set. Once the operator selects the required program, the machine is ready for operation. The Mercury-4 can strip cables inserted into the supplied fixture aperture to an end stop, or via a custom fixture plate. A camera allows the whole process to be monitored.

Also new this year, Schleuniger will demon-



Schleuniger Wire Harness Assembly Line

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Continued on page 13

Wire Crimp Pull Testing

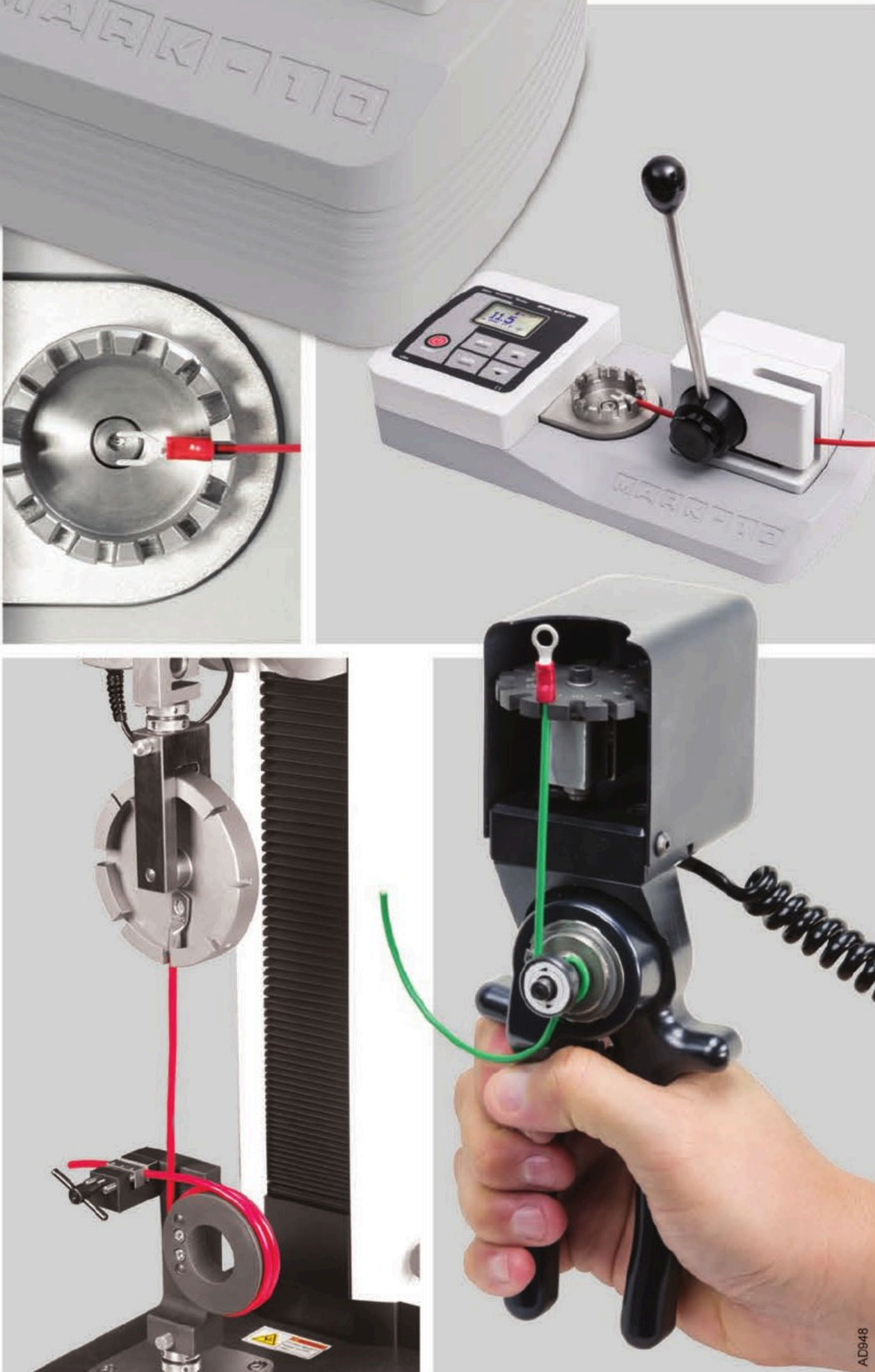


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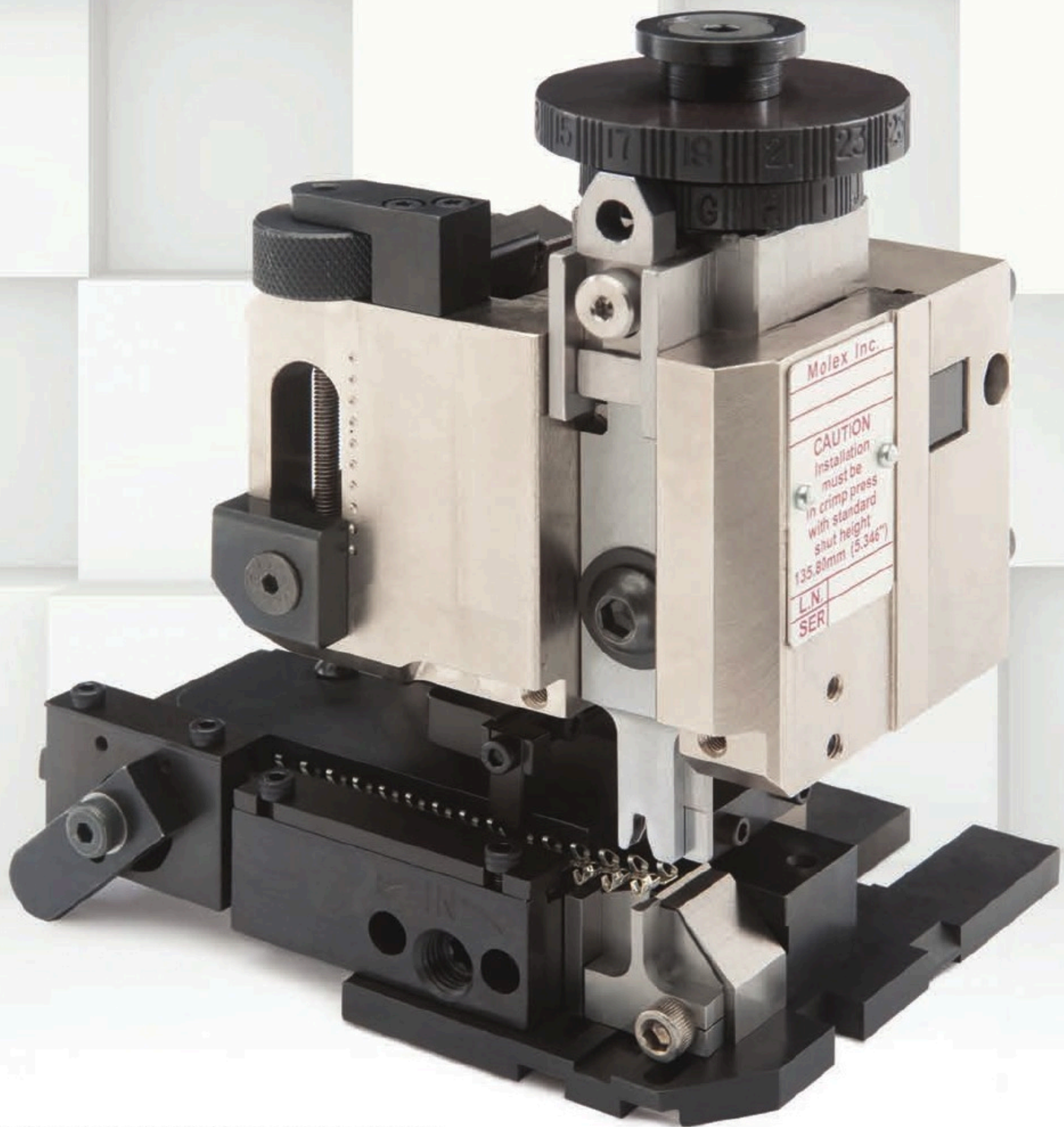
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NEWS PLUGS continued



Continued from page 10

strate the ShieldCut 8100. The ShieldCut 8100 can safely and quickly cut and remove the braided shield layer from most shielded cables, eliminating countless hours of manual labor. As the only machine of its kind, the ShieldCut 8100 fills a current market need for efficient processing of shielded cables.

In addition, the new UniStrip 2050 wire stripping machine will be on display. The UniStrip 2050 is a great solution for customers looking for a simple, low-cost pneumatic stripping unit for medium sized cables and wires. The fully pneumatic machine is extremely simple to set up and operate and excels with its compact design and ample stripping power.

Many additional products will be demonstrated including the CrimpCenter 36 S, MegaStrip 9650, RotaryStrip 2400, StripCrimp 200 and UniCrimp 200 as well as equipment from the UniStrip line of

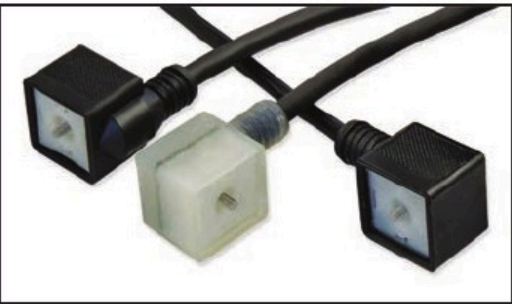


Schleuniger Coax Center 6000

wire stripping machines and CoaxStrip line of coaxial cable stripping machines. More information can be found at www.schleuniger-na.com/assemblyshow. Should you have any questions, please e-mail sales@schleuniger.com or call (603) 668-8117.

Canfield Connector Secures UL Listing for Innovative Connectors

Canfield Connector has received Underwriters Laboratories (UL) listing for a wide range of its 5F and 5J molded solenoid valve connectors, the first in the industry with integrated gaskets.



5F and 5J Connectors

The UL listing confirms the products' performance and safety features and represents an important benefit for customers who wish to achieve or maintain UL listing for assemblies or machines that use the connectors.

"Our integrated 5F and 5J connectors have delivered great value in the industrial marketplace, and the UL listing will make them even more attractive," said Todd Harmon, vice president at Canfield Industries, parent of Canfield Connector. "Their integrated design eliminates costly field work and the potential for gasket loss while providing reliable power to solenoid valves that manage the flow of fluids, air and other media.

Continued on page 15

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Sample Screen Report ▼

Line	HDR-64 B1	HDR-64 B2	Value	HiPot Results	DC Current	DC Voltage	DC Isolation	AC Current	AC Voltage	AC Isolation
1	28	28	16 mΩ	✓	< 1 µA	1499 V	> 1 G	0.150 mA	996 V	7 M
2	30	30	32 mΩ	✓	< 1 µA	1499 V	> 1 G	0.173 mA	996 V	6 M
3	32	32	63 mΩ	✓	< 1 µA	1499 V	> 1 G	0.189 mA	996 V	5 M
4	34	34	125 mΩ	✓	< 1 µA	1499 V	> 1 G	0.204 mA	996 V	5 M
5	36	36	249 mΩ	✓	< 1 µA	1499 V	> 1 G	0.204 mA	996 V	5 M
6	38	38	500 mΩ	✓	< 1 µA	1499 V	> 1 G	0.200 mA	995 V	5 M

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NEWS PLUGS continued



Continued from page 13

"With UL listing, these products can now fulfill the demands of customers who require UL-listed components in their fluid- and air-management systems," Harmon said.

The 5F and 5J connectors are proudly made in the United States under the Canfield Industries quality system that is certified under ISO 9001/2008. Learn more here or email us at customerservice@canfieldconnector.com.

Fiber Optic Center, Inc. Announces the Addition of the FiberChek Probe

Fiber Optic Center, Inc., (FOC), an international leading distributor specializing in helping their customers make cable assemblies, announces the addition of the FiberChek Probe from Viavi to focenter.com. All new handheld automates capabilities and autonomous operation to ensure best practices with time-saving workflows.

The FiberChek probe builds on industry-leading Viavi expertise in fiber inspection to deliver an all-in-one handheld solution for technicians at every skill level. Meeting all fiber inspection needs with built-in image viewing, auto-focus, pass/fail analysis, storage and recall, the FiberChek probe completely automates inspection workflows to ensure fast and accurate performance.

"Fiber networks have reached a point where inspection is an essential part of every technician's job—they no longer have any room for mistakes," says Matt Brown, director of the Viavi Fiber Inspection and Test group. "The FiberChek probe is a fully autonomous handheld device that automates each step of the inspection workflow at the press of a button."

Achieve fully autonomous inspection with an all-in-one solution

- Automate inspection workflows
- Ensure accurate and fast test performance
- Easily access the fiber connection anywhere
- Connect with other Viavi instruments and mobile devices

The integrated touch-screen display shows live images and analysis results with easy navigation and testing for desired acceptance criteria, including IEC-61300-3-35 standards or customer-specific requirements. In addition, the FiberChek probe also integrates with a wide selection of other Viavi test solutions and both iOS and Android

mobile devices via Wi-Fi, Bluetooth, and USB.

With FiberChek, technicians get a complete fiber-inspection solution in the palm of their hand. Whether used on its own or along with other devices, the FiberChek probe is the essential fiber tool for every technician. From new install deployments, network certification, troubleshoot-



FiberChek Probe

ing, moves, adds, and changes, installers can use FiberChek wherever they handle fiber because it includes all of the capabilities needed to complete jobs faster, correctly, and on time, the first time.

Technical questions on the FiberChek can be asked to FOC team at 800-473-4237.

Additional resources from the team include:

- FOC technical solution content: <http://bit.ly/29WTVgn>
- Glossary, Acronyms, Military Specifications for Connectors: <http://bit.ly/2a2EFn8>
- Q&A Resource: email technical questions to AskFOC@focenter.com
- Follow Fiber Optic Center @FiberOpticCntr

For further information contact: Fiber Optic Center, Inc., 23 Centre Street, New Bedford, MA 02740-6322. Email sales@focenter.com

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Left to Right



Mini (2 Post) Air
Left to Right



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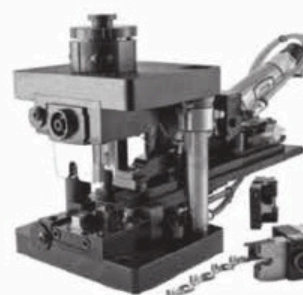
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Mini
End Feed



Med. Duty Air
End Feed
Quick Change Tool Pack

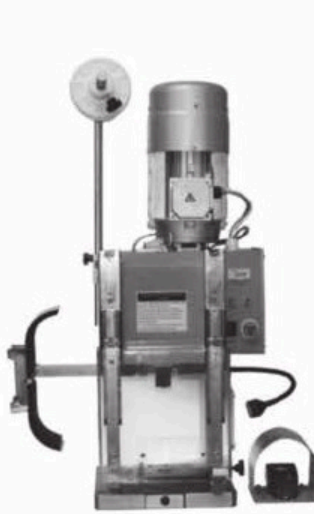


Med. Duty Slide
Quick Change Tool Pack

NEW ODYSSEY CRIMPING PRESSES



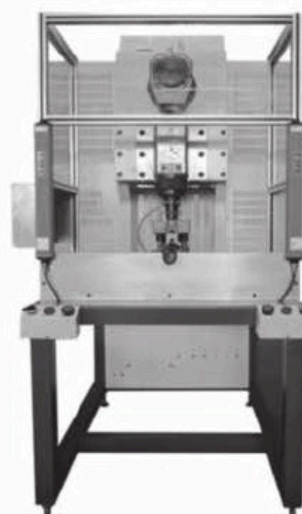
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NEWS PLUGS continued

New MultiMark “All-In-One” Printer Marking System

Weidmuller introduces the new MultiMark, a thermal transfer printer marking system with an innovative capability to meet a full range of customers’ labelling requirements for control cabinets or equipment build settings. The new all-in-one printer marking system incorporates a new range of marking solutions that would normally require several different printing devices.

The MultiMark printer marking system consists of the compact and modular THM MultiMark thermal transfer printer and an innovative line

of reel formatted MultiMark markers to fit onto modular terminal blocks, wire and cable, and equipment. Used with Weidmuller’s M-Print® PRO printing software, the THM MultiMark Printer gives the user the capability to produce virtually any type of alpha-numeric and symbol identification.

The THM MultiMark Printer is highly versatile. It prints markers and labels from the MultiMark marker family as well as continuous materials such as textile/polyester adhesive labels, heat-shrink wire/cable sleeves and PLC-field panel adapter labels. To print endless heat-shrink and adhesive labels, there is a printer option for adding an automated cutting and perforation tool. Incorporating this tool simplifies the process of cutting continuous materials into required lengths. An intuitive touch



Weidmuller’s new THM MultiMark Printer Marking System

display and easy-to-read status indicators – in 22 languages – make printer operation simple. Weighing in at just 7 pounds, the THM MultiMark Printer is highly portable and can be used for on-site and off-site custom marker production. It produces markers that are resistant to internal/external (industrial) influences with a print resolution of 300 dpi, for easy-to-read identification, and is capable of printing 250 markers per minute. The THM MultiMark printer marking system is ideal for users who have both small and medium custom print volumes and want a more efficient and cost effective means of producing custom markers for terminals, wire and cable, and equipment.

The MultiMark marker system includes 150 new marking products, which can be used to cover virtually all identification requirements in a control cabinet or equipment build setting. Weidmuller’s renowned Dekafix and WS modular terminal block markers, made with new composite material and designed as continuous strips, have been added to offer simple and efficient markers that are highly resistant to both vibration and shock. The rigid plastic base ensures that the marker can be reliably snapped into place, and the easy-to-grip elastic outer material makes installation easier.

For further information contact Weidmuller, 821 Southlake Blvd., Richmond, VA 23236. Phone (800) 849-9343 or FAX: (804) 379-2593. Visit www.weidmuller.com

Siemon is Now Offering 3 Additional Colors for SFP+ Twinax Cable Assemblies

Siemon Interconnect Solutions, a business unit of Siemon that provides custom network infrastructure solutions to OEMs, value-added resellers and system integrators, is pleased to announce the addition of 3 colors (red, white and blue) to our current line of black SFP+ cable assemblies. The additional colors will help

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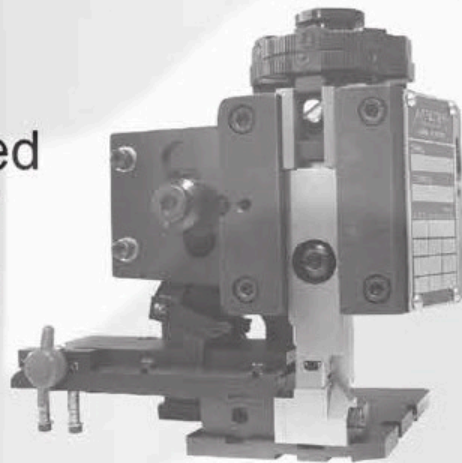


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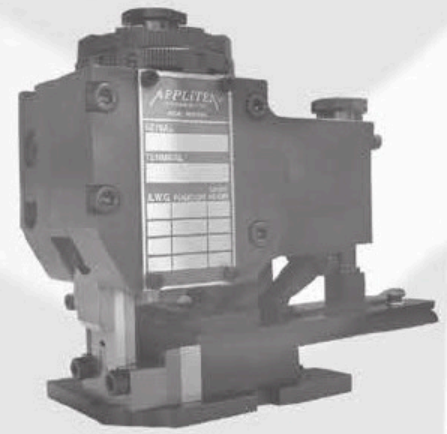
Crimping Applicators

Applitek and all of its employees are proud of the fact that we are one of the oldest independent applicator manufacturers in the United States. Our Company was founded on designing and manufacturing quality products using our in-house capabilities. To this day the tradition continues and we are prouder than ever to say "Still made in the USA"

Mini style applicators with mechanical feed mechanisms are supplied in a variety of feed configurations. Adaptable to most crimping presses.

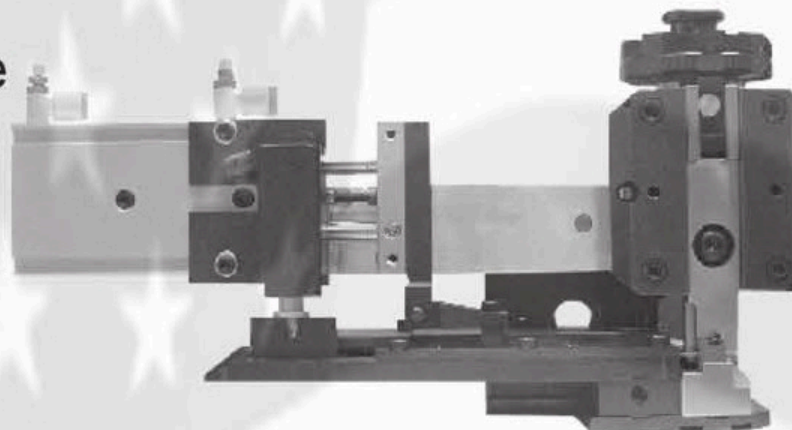


Model 1700

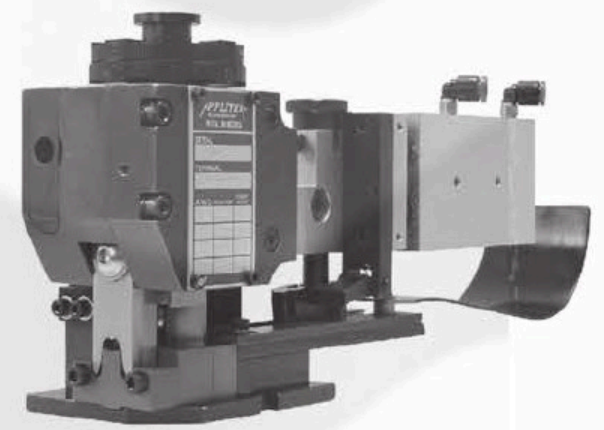


Model 2000

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

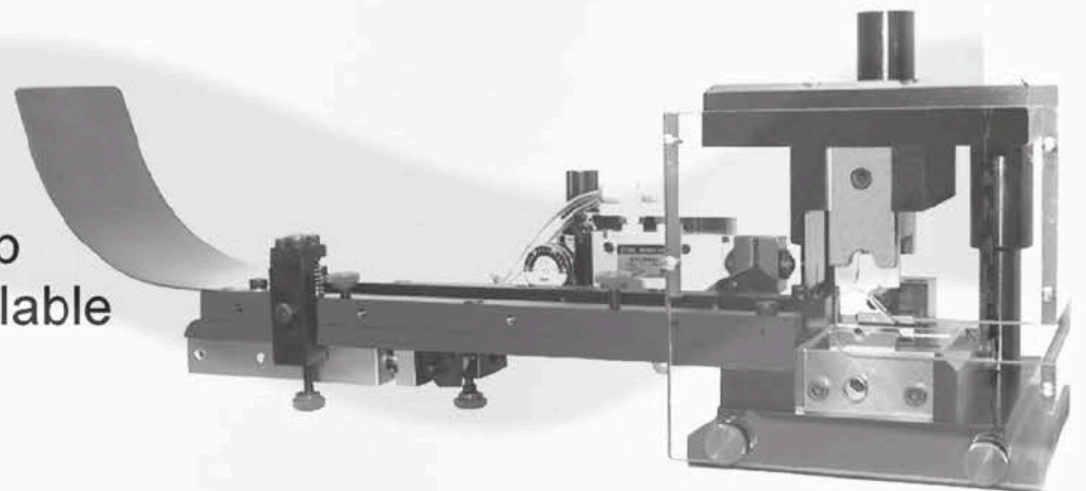


Model 1500



Model 2100

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



DSA Series

Applitek has a solution for all your termination requirements. That's why many major wire harnessing companies and Original Equipment Manufacturers use and specify Applitek applicators. Our base applicator frame designs have proven themselves over the years with their reliability and have been able to accommodate over 3000 different types of terminals.

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NEWS PLUGS continued

Continued from page 16

facilitate color coding by differentiating various networks and/or applications while retaining the same features and benefits as our current product line.

"We saw a need to expand our SFP+ high speed cable portfolio with color-coded cables," says John Sawdy, Senior Signal Integrity Engineer for Siemon Interconnect Solutions. "Our customers want to be able to easily distinguish their cables in specific applications. These cables will allow them to do so."

Ideal for switch-to-switch and switch-to-server connections within the data center, these cable assemblies have been tested for interoperability and meet industry standards, providing customers with a best-in-class cabling solution.

SFP+ active and passive copper cable assemblies from Siemon were developed specifically as a cost-effective alternative to optical transceiver modules for short reach links in high-speed interconnect applications such as Top-Of-Rack (TOR) switching, high performance com-

puting (HPC), and network storage markets. These assemblies support data transfer rates up to 10+ Gb/s per lane, meeting or exceeding current standards specifications.

These SFP+ fully-shielded assemblies combine twin-axial shielded cable configuration with robust die cast housings for enhanced support of high frequency data rates. These SFP+ assemblies are impedance matched to ensure interoperability and minimize EMI leakage through their fully-shielded design.

The active cables use signal processing within the connector back shells to extend the length that copper cables can reach beyond the limits of passive copper solutions. Now the same SFP+ cables that customers have come to trust are offered in four distinguishable colors.

Decrease confusion and increase organization in the data center with Siemon's passive and active SFP+ and Cisco compatible SFP+ colored DAC's.

For more information on Siemon Interconnect Solutions' Cisco compatible and 3rd party compliant SFP+ passive and active DAC's visit website: www.siemon.com/sis/data-center-solutions/hsi.aspx

Contact Siemon Interconnect Solutions, 101 Siemon Company Drive, Watertown, CT 06795

SAKI America Expands Sales Team with 3 New Representatives

SAKI America, an innovator in the field of automated optical inspection equipment, announces the expansion of its sales network with the addition of three new representatives. Assembly Solutions, JW Sales, and Marketing Engineers of Ohio, Inc. (MEO) will provide sales support for Saki's complete line of 2D and 3D automated optical, solder paste, and x-ray inspection systems.

Assembly Solutions (www.assemblysolutions.biz), based in Bellevue, WA, will handle sales in Washington, Oregon, and Idaho. Assembly Solutions has been representing the Pacific Northwest electronics manufacturing industry since 1988 and specializes in manufacturing, inspection, test, and quality products.

JW Sales (www.salesjw.com), based in Lakeville, MI will handle sales in Minnesota, Iowa, North Dakota, South Dakota, Missouri, Nebraska, Kansas, and Western Wisconsin. JW Sales has expertise and over 50 years of combined experience in all areas of the electronic assembly market, covering electronics, medical, and cable assembly.

MEO, based in Ohio, will represent Saki in Ohio, Western Pennsylvania,

Continued on page 22

*** FOR SALE ***

- 1 - AMP 'K' Press, Part #2-565435-2-BA
- 1 - ARTOS MTX10 Multi-Task Wire Processor
- 1 - ARTOS MTX5 Multi-Task Wire Processor
- 1 - ARTOS CS337 Cut & Strip Machine (Australia)
- 1 - ARTOS CS336 Cut & Strip Machine
- 1 - ARTOS CS326 Cut & Strip Machine (Australia)
- 1 - ARTOS CS29 Cut & Strip Machine, #42774A
- 4 - ARTOS CS26, CS26A Cut and Strip Machines
- 1 - ARTOS CS7 Cut and Strip Machine
- 1 - ARTOS C8 Measure and Cutoff Machine, 2000
- 1 - ARTOS 45-145 Wire Stripper w/Foot Pedal
- 1 - ATS Crimp Press, Series T3000, with Applicator
- 1 - AUTOJECTOR HS30-S Injection Molding Machine
- 1 - AUTOSPLICE SAS/2 Binding Machine
- 1 - BLUE M Oven, Model POM-1406G1
- 1 - CAMI M2U Basic Cable Tester
- 3 - CARPENTER Model 70B Strippers
- 1 - ERASER Model C200 Wire Stripper, Part #AR-4901
- 1 - EUBANKS 4000-04 Tandem Cut and Strip Machine w/extra Blade Sets
- 3 - EUBANKS 8000-01 Cut and Strip Machines
- 1 - HANSCOM Tie Wrapper, Model 250 Tyer
- 1 - IDEAL 'Stripmaster' Model 940 Wire Stripper, Part #45-940
- 2 - J.B. HYDE 24-C, 48-C Braiding Machines
- 2 - KAWA Splicing Machines, Model KW-IT, New
- 1 - KINGSLEY Model MCM-650 Sleeve and Tube Marker
- 2 - KODERA Model C556 Seal, Crimp and Tinning Machines
- 2 - KOMAX Gamma 333PC Automatic Crimping Machine
- 1 - KOMAX Gamma 333LCD Automatic Crimping Machine
- 1 - KOMAX Alpha 411 Automatic Crimping Machine
- 1 - LOCTITE Model 10-50 Posi-Link Volumetric Dual Cartridge Dispensing System
- 1 - METRONIC Alpha Jet C Inkjet Printer, currently set up for black ink, approx. 2006/07
- 1 - MECHTRIX Model MPF-30 Prefeed
- 1 - MORGAN Injection Molding Machine, Model G-100T
- 5 - MORGAN Injection Molding Machines, Model G-125T
- 1 - NEW ENGLAND BUTT 72-Carrier Braider (w/flat strap capability)
- 1 - NEW ENGLAND BUTT 56-Carrier Harness Braider, 24" Capstan Wheel
- 3 - NEW ENGLAND BUTT 48-Carrier Harness Braiders, rear delivery chutes
- 1 - NEW ENGLAND BUTT 32-Carrier Harness Braider, 24" Capstan Wheel
- 1 - NEW ENGLAND BUTT 16-Carrier Harness Braider, 24" Capstan Wheel
- 1 - PANDUIT CP-861 Crimp Press
- 1 - SCHLEUNIGER Model 207 Coax Stripper
- 3 - SCHLEUNIGER CC1000 Coilers
- 1 - SCHLEUNIGER CP1500 Heavy Duty Coiler
- 1 - SCHLEUNIGER CS9100 Cut/Strip Machine with a PF2000 Prefeed
- 1 - SCHLEUNIGER CT32 Crimp Press, 2008
- 1 - SCHLEUNIGER EC9300 EcoStrip Cut/Strip
- 1 - SCHLEUNIGER ES9320 EcoStrip Cut/Strip, 2006
- 2 - SCHLEUNIGER JS8300 Jacket Strippers
- 1 - SCHLEUNIGER Model MC252 Micro Coax Stripper
- 1 - SCHLEUNIGER PT26 Pull Tester, 2008
- 2 - SCHLEUNIGER US2100 Bench Strippers
- 4 - SCHLEUNIGER WS1000 Wire Stackers
- 2 - SCHLEUNIGER Uni-A Applicators
- 1 - SPECTRUM 'Sienna 210S' Radial & Axis Laser Wire Stripper (modified to Model 210D)
- 1 - T&B Electric Hydraulic Pump, Model 13810
- 2 - TOYOJAMCO Auto Crimping Machines, Model JN01S-ST, 1997, w/2 - Model LPC220SJS 2T Presses, 30mm stroke
- 1 - TOYOJAMCO Auto Crimping Machine, Model JN01H, 2000, w/1 - Model LPC220SJS Press, 19.6kN, 30mm stroke; with Solder Unit, Model SF-310A



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20 Years of Building Relationships at TACK Electronics

Continued on page 20

customer's current panel build. "We were able to create a wire harness that replaced the panel assembly," which he noted saved the customer money, and created a weight-saving, more dependable result.

We also touched on TACK's venture

into inventory management services to further help customers. These programs can include Kanban, letters of intent, and blanket orders. Todd mentioned they can design and build high volume batches, then stock and ship when needed. They can also produce smaller runs and repeat orders as needed. "By coupling inventory management systems

with our supplier relationships, we have been able to help customers decrease costs, increase on-time delivery, and build solid business relationships," he pledged.

We shifted to the subject of marketing, and how TACK is obtaining new business. "It's definitely been transitional over the past couple of years," he said. "Initially it was word of mouth and referrals, but we now exhibit at some targeted trade shows and attend others in the industries we serve." TACK recently exhibited at the Advance Manufacturing Expo in Grand Rapids, and it was a resounding success. "It created a lot of awareness for our company, and we

were able to develop many new relationships, and strengthen some with current customers who happened to be at the show." Todd was pleased when he discovered the founder of his mentorship group was the keynote speaker.

Todd's quest for personal development led to his involvement with WHMA, and he eventually became an association board member. He is also involved with some business mentoring groups in the Grand Rapids area. More important than all the training and personal development, Todd is most thankful to have the vast industry knowledge and business acumen of George and Linda at his disposal. "My parents have

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TACK Electronics employees celebrated the company's 20th Anniversary.

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always taught me that hard work and perseverance are the keys to success,” he noted. “They still provide guidance and advice, yet sup-

port my decisions and vision for the future.” He expanded on this saying, “I’m trying to continue their legacy of growing a business that

customers can depend on, while providing a clean, safe, and comfortable work environment for our employees.”

One word that appeared on TACK’s website, and came up often in our conversation, was relationship. TACK places a high degree of importance on the relationships they have built with their customers. It’s the foundation upon which George and Linda Maines built TACK Electronics, and it’s a tradition Todd Maines has heartily embraced. As Todd concluded, “as long as they know they can depend on us, and we won’t let them down, we will have established a partner for life.”



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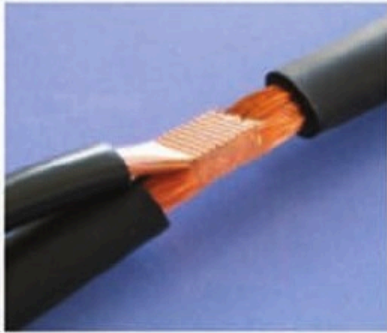
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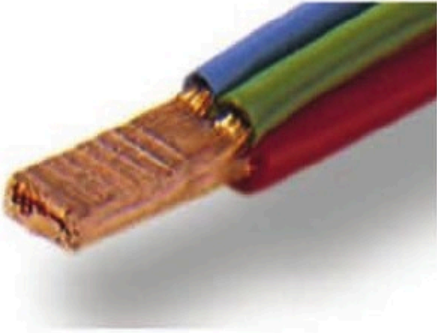


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NEWS PLUGS continued



Continued from page 16

nia (area codes 814, 724, and 412), West Virginia, and Kentucky.

"We are excited to welcome our new representatives as part of the SAKI America team," said Satoshi Otake, general manager of SAKI America. "They have prestigious line cards, good working relationships with their customers, and strong process capabilities and industry knowledge."

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Artos Engineering Introduces Servo-Driven TU-16 for Easy Closed Barrel Crimping

Artos Engineering Company, a Brookfield-based manufacturer of wire processing equipment, has introduced the new servo-driven TU-16 Bench-top Crimping System to provide a new level of performance, quality and control in bench-top crimping. "With the servo-driven TU-16, we've achieved the next level in bench top crimping systems," says John Olsen II, Artos Engineering Company president. "We've combined ease of adjustment, effortless changeovers and automatic quality control so that our customers can maximize productivity."

The TU-16's servo drive system allows a quick change from a standard single cycle to a split cycle operation, for effortless insertion of wires into closed barrel terminals by repeating an accurate position of the terminal barrel for reduced variation. The capture position of the press is easily learned by simply jogging the press to the desired location, and the TU-16 retains that position in memory. The operation stroke is also easily adjusted from 40 to 30mm with the flip of a switch.

Designed for use in low-volume runs, custom wire configurations and as an automatic system applicator die test unit, the TU-16 features an integrated LED light source focused on the work area and an easy-open safety shield for tool-free access to the quick-release die. Quiet electronic controls offer both a forward and reverse jog mode for set-up and resetting of the crimping unit; an optional crimp force monitor ensures crimp consistency and quality and an optional micro-adjust crimp height handles sizes down to 0.0001 inch.

The TU-16 also serves as a complement to machines such as the Artos Cr.22, as it enables efficient testing and debugging of the applicator die set-up before the settings are replicated on a large automated system.

The quiet electronic control operates on a simple and accessible single-phase 220-volt supply and the TU-16 includes a standard pneumatic feed kit for operation of air-feed applicators. About Artos Engineering Company. For more information, visit www.artosengineering.com.

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For more information on Panduit wire harness solutions, visit www.panduit.com/wireharness-wh
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Reel Power Wire & Cable

Tulsa Power and Reel-O-Matic are pleased to announce their move to a new world class, larger facility located in Oklahoma City, OK. The new 100,000 ft² building allows for increased manufacturing floor space along with improved work flow and production capabilities. The two companies will now operate under the name Reel Power Wire & Cable dba Reel-O-Matic and Tulsa Power. Reel Power Wire & Cable is owned and managed by Reel Power International, Inc.

“By combining the expertise of the engineering teams, operations and sales group of these two companies, they can be more responsive, with a stronger focus on customer service and managing their substantial growth. These divisions were running out of room in their former locations so this investment made good sense,” said Don Moreau, SVP Sales & Marketing of Reel Power Wire & Cable. “The new facility has been designed to provide a much improved work flow allowing us to increase production to meet growing demand.”

Reel Power (Tulsa Power and Reel-O-Matic) serves the wire & cable industry, with a strong focus of continually providing new product innovations. The company leads in the manufacture of wire, cable, and flexible material handling equipment.

Reel Power designs and manufactures machinery for reeling, coiling and measuring of wire, cable, pipe, rubber, plastic,

tubing, conduit, wire rope, fiber optic material, and any other flexible material. Expertise includes payoffs, take-ups, re-reversers, winches, spoolers, measurers, coilers, and warehouse solutions that include racking and design capabilities.

Customers include cable and wire manufacturers and distributors, telecom companies, oil and gas companies, automotive companies, crane and plastic pipe companies. The company manufactures and sells both standard and custom engineered products.

Reel Power International, Inc operates one other company, Reel Power Oil & Gas dba Radoil and Tulsa Power Oil & Gas which services the oil and gas industries. This division recently relocated their manufacturing facility into a brand new, state-of-the-art facility in Houston, TX.

Reel Power International is the parent company of three industry-leading brands: Tulsa Power®, Reel-O-Matic® and Radoil. Our product offerings are diverse, but the goal of every product is the same: To make users’ operations more efficient, productive, profitable and safe.

Standard and custom solutions. Across our three brands, you’ll find a wide range of products designed for drilling, reeling and winding operations. And if you don’t find what you need in our catalogs, we can custom-design the perfect solution for your business.

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The Reel Power Wire & Cable facility in Oklahoma City, OK is the new home for Tulsa Power and Reel-O-Matic.

product. To ensure the highest level of quality and safety, all of our products are developed by degreed engineers. And each of our brand companies is backed by the most experienced engineering organizations.

A commitment to innovation and growth. As the challenges and needs of the industries we serve evolve, so do our

solutions. We continue to identify challenges, design innovative solutions and manufacture quality products that decrease delays, and save time and money.

For more information visit:
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NEWS PLUGS continued



Bruce Rodewald Joins EPLAN Americas as New President and CEO

EPLAN Software & Services, the global provider of leading engineering software solutions, has appointed Bruce Rodewald as President and CEO of EPLAN Americas. He succeeds the retiring Raymond Gaynor, who had led the Americas division since 2011.

Rodewald brings to EPLAN over 24 years in industrial business development and corporate sales leadership. A mechanical engineering graduate of Western Michigan University and former captain with the US Army Corps of Engineers, he has taken on progressively more important leadership roles in the field of industrial software and information technology since moving from the military to the private sector in 1991.



Bruce Rodewald, President and CEO of EPLAN for the Americas

“Design automation is the present and the future,” says Rodewald. “EPLAN products deliver a significant advantage to our clients. They provide solutions to master all critical stages of a project in the most productive fashion, from quoting and pre-planning, through all aspects of

product design, then on through the product’s final assembly and delivery. EPLAN’s demonstrated ability to shorten our industrial partners’ time to market is providing them with rapid payback of their investment and lower operating costs on a continual basis. And EPLAN positions their design group for success in the emerging Smart Factory environment.”

Rodewald thanked his predecessor for his contributions to EPLAN’s growth in the Americas. “Ray Gaynor has offered stabilizing leadership to the team over the past five years, and we thank him for his service to the company. We wish him all the best in his future endeavors.”



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Mando Can Do.



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.

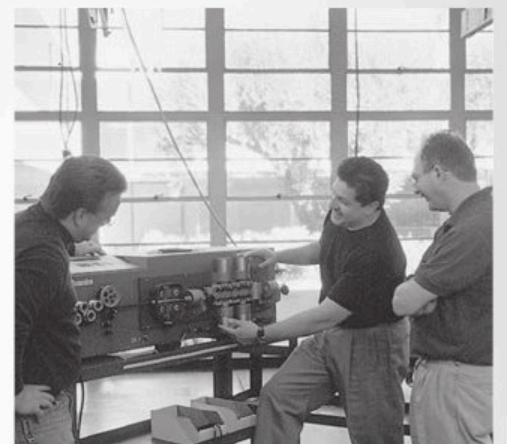
George Price, vice president of J&M Products, for example, writes how Mando takes time to answer questions, explain machine operation and even gave “tips on stripping some shielded cable that others said could not be done.”

“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.

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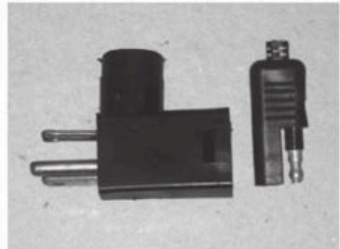
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NEWS PLUGS continued

CAMI Research, a WHCC Top Product Winner, Reports Milestone Continuity Measurement

CAMI Research Inc. (Acton, MA), a 2015 Wire Harness & Cable Connector Top Product winner, reports that a customer has successfully tested simultaneous, multipoint continuity in a two-mile long, multicore cable (rated at 10Ω/1000ft) using a CableEye M3UH tester.

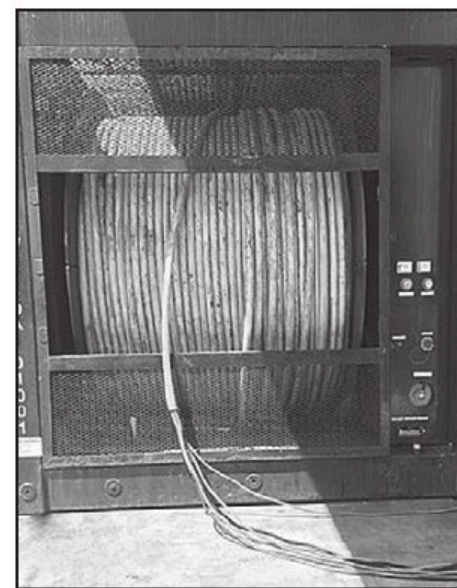
Priced in the low thousands range, the test has more traditionally been carried out with testers x10 more expensive. New to the product line in 2015, the M3UH continuity tester offers a down-shifted resist-

ance threshold (viz. 0.1Ω to 5MΩ ±0.1Ω) compared to that of the M3U.

By similarity, the same outcome is achievable with model M3U. All CableEye models, including HiPot, have out-of-the-box options to adjust dwell time to compensate for inherent cable capacitance thus enabling measurement of 'long' cables.

Energy (oil, gas, renewable), commercial building wiring installations, submarine, entertainment and more.

CAMI Research produces expandable and upgradable diagnostic Cable & Harness Test Systems for assembly, prototyping, production, and QC of standard or custom cables. CableEye® Testers display, and document basic electrical prop-



Two mile-long cable tested with CAMI CableEye

erties such as continuity, resistance, dielectric breakdown, insulation resistance, miswires, and intermittent defects.

To request a catalog, please go to camiresearch.com or call (978) 266-2655.

AMP-O-LECTRIC MODEL G II TERMINATOR

TE Connectivity's (TE) Model G II is the latest and most advanced design in the long-standing series of their AMP-O-LECTRIC machines for terminating wire using reeled terminals and contacts. This unit is designed and built to continue the tradition of work-horse terminators from TE.

The new terminator improves key performance areas for operators. For operator convenience, TE improved access to, and significantly updated, lighting in the under cabinet and target area. A variable speed option was also added to provide more flexibility for those complex applications that benefit from slower ram and feed speeds.

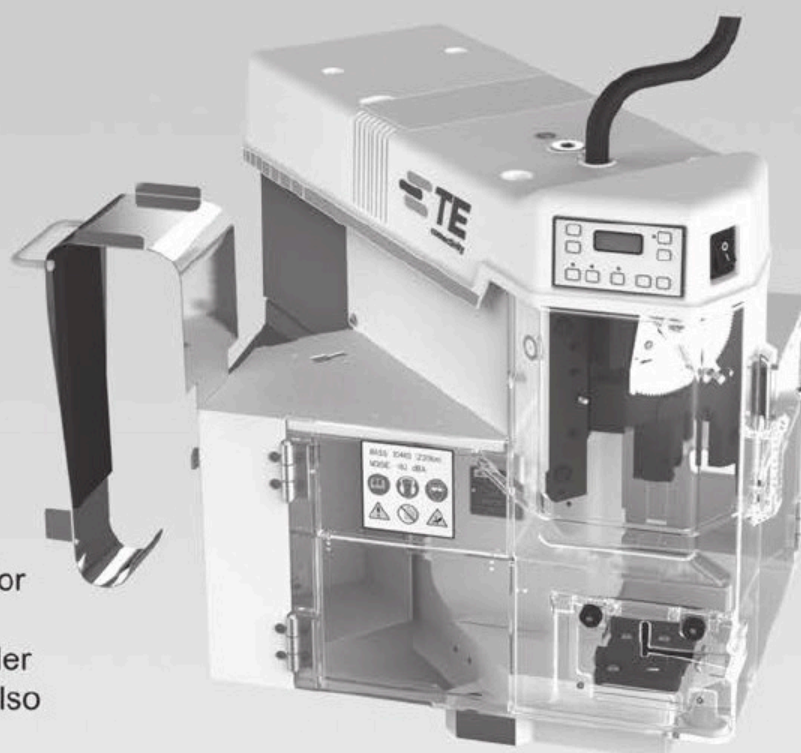
The Model G II terminator is one of the quietest machines available and the improved guarding meets applicable CE and domestic safety requirements. The improved guarding also creates open access for quick and smooth installation of both end-feed and side-feed applicator styles.

User Friendly

At the push of a button, you can power the motor on or off, jog forward or reverse, switch to split-cycle operation, turn the work light off or on, power the air feed on or off, or reset the batch counter. And, it's all reported on an LCD display. The controls will also detect and report errors in the machine, and stop cycling when a bad crimp is detected by the CQM II. The operator must then push the reset button to continue. The Model "G II" will accept all existing TE miniature applicators.

Product Features

- Quiet operation
- Improved guarding and lighting
- Tool-less changeover of applicators
- Precision manual adjust for crimp height
- Total and batch counter
- Accepts all existing TE applicators, with minor modifications
- Reduced maintenance requirements
- Split-cycle operation
- Standardized 1 5/8 [41.3] stroke
- Operates on either 120 or 220 VAC, 50 or 60 Hz



HELUKABEL Continues Global Expansion

HELUKABEL, one of the world's leading cable manufacturers, has opened a new branch in Portugal, its 26th branch worldwide. Cables and wires, predominantly for industrial applications, from conventional control cables to highly flexible data cables, will soon be stored in a 6,500 square foot warehouse in Coimbra, located between the industrial centers of Lisbon and Porto. The branch will initially be run by a sales and logistics team of four employees.

"There is a thriving electrical industry in Portugal, and developments in the mechanical engineering and renewable energy industries are also very promising. Applications in these industries are increasingly becoming more sophisticated, which is in turn making the requirements on cables and connection technology higher as well. HELUKABEL's top-quality, internationally certified products, together with our local service network, will allow us to perfectly meet these increasing demands," said Eduardo Soares, director of the branch.

"Portugal is an interesting market for us. We believe that the positive economic growth from the last two years will continue over the long term. We need to be close to the customers in order to have a better understanding of the local requirements," added Marc Luksch, Managing Director at HELUKABEL. "Furthermore, our customers in African countries where the official

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HELUKABEL Portugal Facility

language is Portuguese, such as Mozambique, Angola or Cape Verde, will benefit from our local presence in Portugal," he continued. Phone: +351 239 099596

Tripling the floor space in South Africa

The HELUKABEL branch in South Africa moved to a new location in May in order to offer an even wider range of products to its local customers. The move to the new location on the outskirts of Johannesburg has tripled the branch's floor space. They are now storing cables and wires for the African market in a storage space measuring over 43,000 square feet.

New location in the Netherlands

The HELUKABEL branch in the Netherlands has moved to a new location near Eindhoven. This has doubled the number

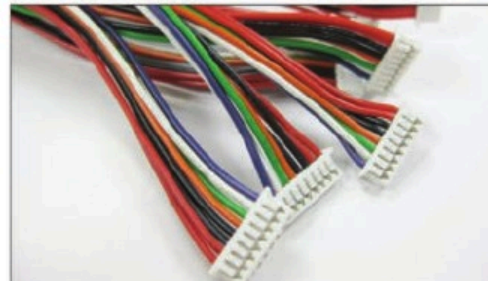
of pallet bays to more than 2,200. HELUKABEL will use the extra storage space to meet the increased demands in particular for country-specific products.

HELUKABEL USA, Inc. is the wholly owned U.S. subsidiary of HELUKABEL GmbH, a leading international manufacturer of cables and wires with 26 locations throughout the world. In its 45,000-square-foot, suburban-Chicago facility HELUKABEL USA stocks over 4,000 cables, wires and accessory line items for a multitude of industrial and commercial applications across a wide range of vertical market segments. Direct access to a 1.72 million-square-foot, fully automated warehouse with 33,000 line items, enables HELUKABEL USA to provide extremely short delivery times.



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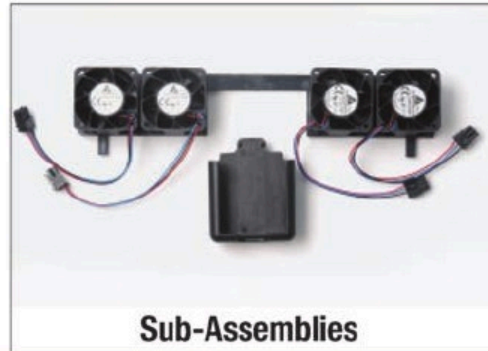
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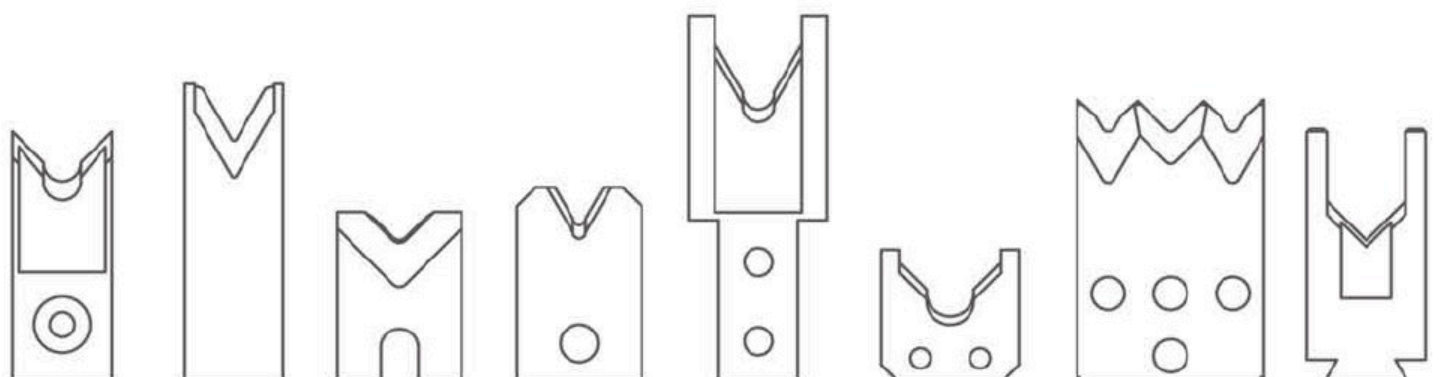
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NEWS PLUGS continued

**Schleuniger Wins ASCO Award 2016 for Best Business Transformation**

This year's ASCO Award for Best Business Transformation goes to the Schleuniger Group. This honor is awarded to the

best and most sustainable business transformation in Switzerland.

The Schleuniger Group and its consulting agency Helbling Business Advisors AG have received a great honor: The Association of Management Consultants Switzerland (ASCO), granted the ASCO Award 2016 for Best Business Transformation to Schleuniger and Helbling. ASCO has been honoring the best and most sustainable business strategy with this annual award

since 2006. Schleuniger earned the award with its The Way Forward strategy, which it developed in 2014 with the support of Helbling Business Advisors. The strategy stipulates how Schleuniger is to generate sustainable organic and inorganic growth. The organic growth is supported by numerous specifically defined initiatives that are to be implemented within clearly determined deadlines.

The high-caliber jury that announced the winner of this year's ASCO award consisted of eight representatives from the Swiss business world, most of whom are members of executive boards and boards of directors. They included, amongst others, Prof. Dr. Rudolf Minsch, Chief Economist of economiesuisse (the Swiss business association), Christiane Leister, owner of the Leister Group and Member of the Board of Directors of Leister AG, as well as Hans-Peter Ueltschi, Chairman of the Board of Directors of Bernina AG.

In her laudatory speech, jury member Christiane Leister particularly emphasized that Schleuniger has gained fast and impressive benefits from its The Way Forward strategy. She explained that the

quantitative and qualitative achievements are transparent and traceable.

The prestige this award becomes apparent when glancing at some of the previous winners: these include UBS, F. Hoffmann La-Roche, Siemens Building Technologies, the Kistler Instrumente AG, which, like Schleuniger, is active in the automotive sector, as well as other major players. Schleuniger CEO, Christoph Schüpbach, said that the award represents an impressive affirmation that with its The Way Forward strategy, his company is on the right course for sustainable and profitable growth. "I believe that the award will encourage us to pursue the defined path with even more consistency and, in particular, to implement the individual initiatives of our product-market strategy as planned and within schedule," Christoph Schüpbach emphasized.

Development and production are located in Switzerland, Germany and China. Schleuniger is always close to its customers - with four Sales and Service companies in the US, Germany, China and Japan as well as with 40 distributors worldwide.

Wire & Cable Management Solutions

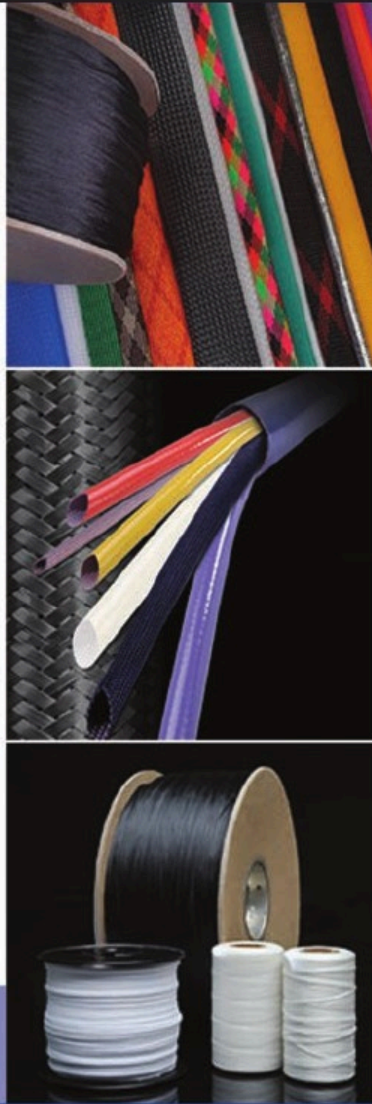
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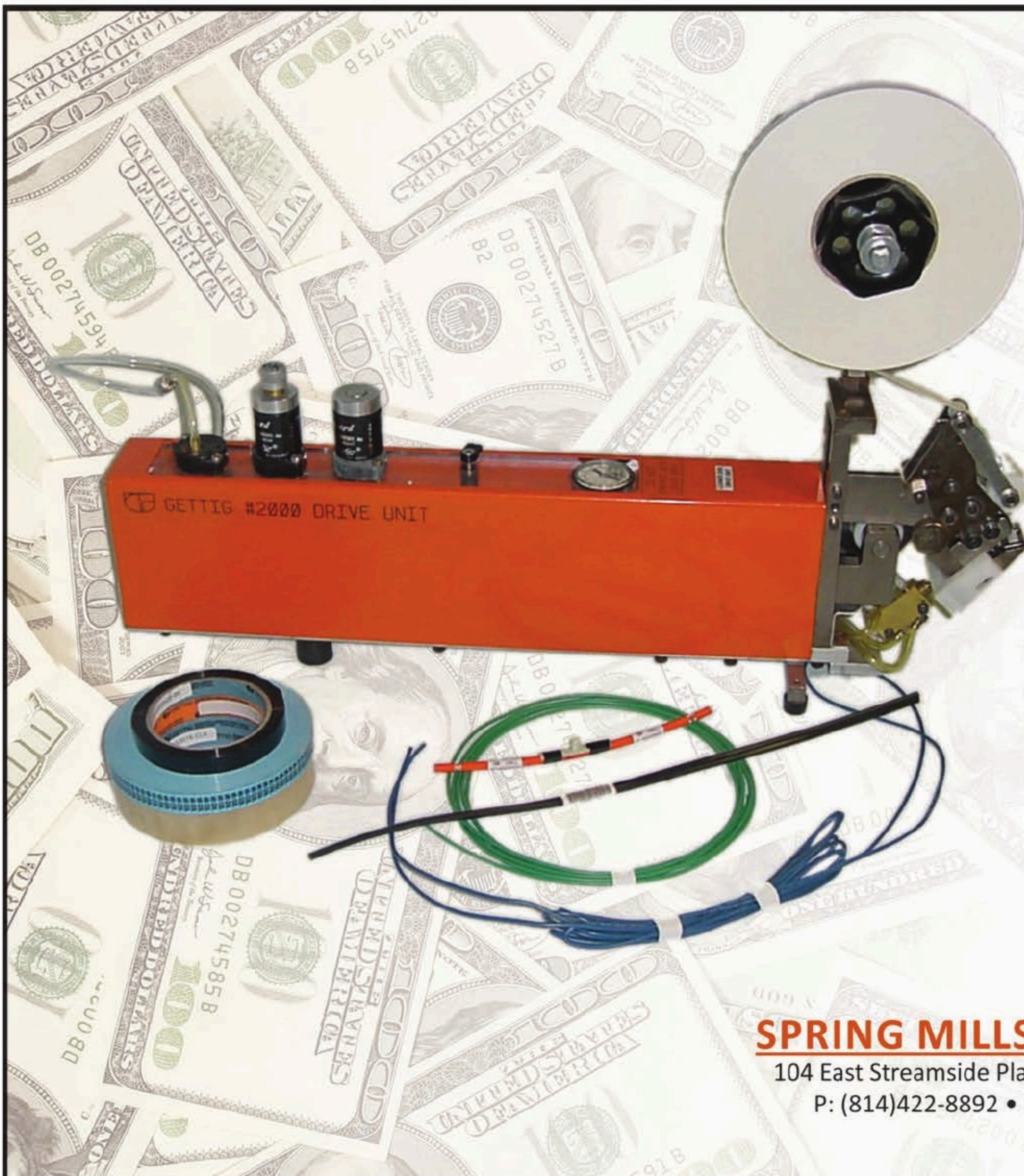
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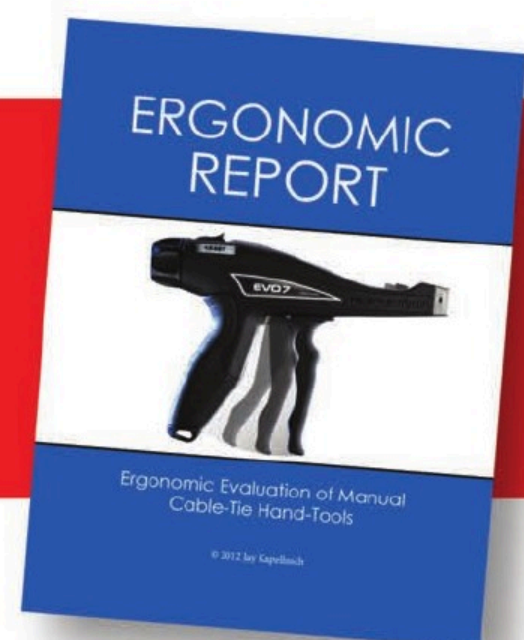


An independent ergonomic study of cable tie hand tools found the EVO 7 requires an amazing **21.7% less** grip force than other tools.

EVO7

Study participants rated the EVO 7:

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"The displays and software are similar from machine to machine. This makes integrating a new piece of equipment into production a smooth transition."
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To Be Precise.



MultiStrip 9480 Unmatched Versatility

The MultiStrip 9480 cut & strip family offers six machine versions to cover a wide range of applications and budgets. Its high speed indexing cutter head and programmable rotary incision capability set the benchmark for high precision processing of coaxial and other shielded cables. Designed with efficiency in mind, the SmartBlade system and magnetically held guides increase output and maximize production by reducing changeover times.

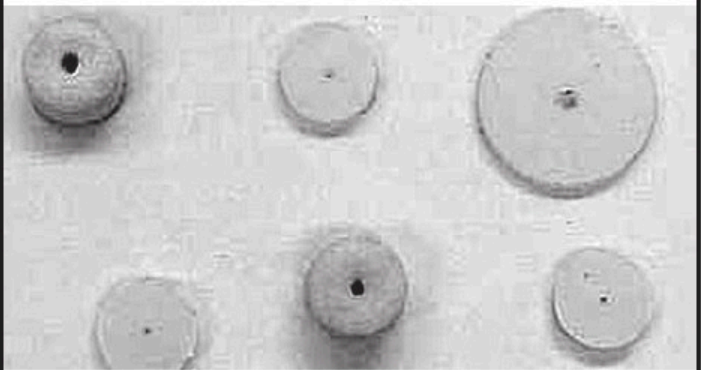
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*"The training provided by Schleuniger employees exceeded our expectations. We are beyond impressed. They quickly got us up and running and most importantly comfortable with technology we had little prior experience with." **C.H., Jabil***

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NEWS PLUGS continued

Heilind Electronics Exhibited at the 2016 Intersolar North America Show in San Francisco

Heilind Electronics, a leading global distributor of electronic components, showcased its photovoltaic (PV) products at Intersolar North America – the most attended exhibition event in the solar industry. The company displayed a variety of PV connectors, contactors, grounding products, wire management devices, and more.

As a premier supplier of Balance of System products to the solar market, Heilind stocks an extensive inventory of PV items from Amphenol, HellermannTyton, Heyco, Panduit, SOURIAU, TE Connectivity, WAGO, Weidmuller, and Wiley.

The exhibition was held at the Moscone Center West Hall, adjacent to the InterContinental San Francisco Hotel.

Founded in 1974, Heilind Electronics, Inc. (www.heilind.com/www.heilindasia.com) is one of the world's leading distributors of connectors, relays, sensors, switches, thermal management and circuit protection products, terminal blocks, wire and cable, wiring accessories, and insulation and identification products. Heilind has locations throughout the U.S., Canada, Mexico, Brazil, Germany, Singapore, Hong Kong, and China. Follow Heilind on Facebook at facebook.com/Heilind and on Twitter at twitter.com/Heilind.

E Connectivity's NECTOR M Power Connectors Available From Newark element14

Newark element14 today has added the NECTOR M power connectors from TE Connectivity (TE), a global leader in connectivity and sensors, to its product portfolio. The NECTOR M power system's "plug and play" design provides the construction industry with a flexible and efficient alternative to hard-wired electrical connections for commercial, industrial and architectural lighting installations, power distributions and more.

The NECTOR M power connector portfolio consists of a full range of 3-, 5-, 6- and 7-pole pluggable electrical installation components. The 3-pole system is ideal for residential and commercial spaces, while the multi-phase 5-pole system delivers

power and signal connections for lighting control applications and the multi-phase 7-pole system can be applied to emergency lighting systems.

The modular design of the system's pin and socket connectors provide customers with flexibility when designing permanent electrical installations. Its multiple branch circuit capability makes cabling easier, and the round design requires less space, simplifies routing during field installation, and reduces installation time.

In addition, TE has introduced the IP67 rated NECTOR M sealed power system, ideal for outdoor and high humidity applications, such as greenhouses or parking garages.

TE's NECTOR M power system is available from Newark element14 in North America, Farnell element 14 in Europe and element14 in Asia.

For more information about TE Connectivity's product offerings, visit: <http://www.newark.com/te-connectivity>

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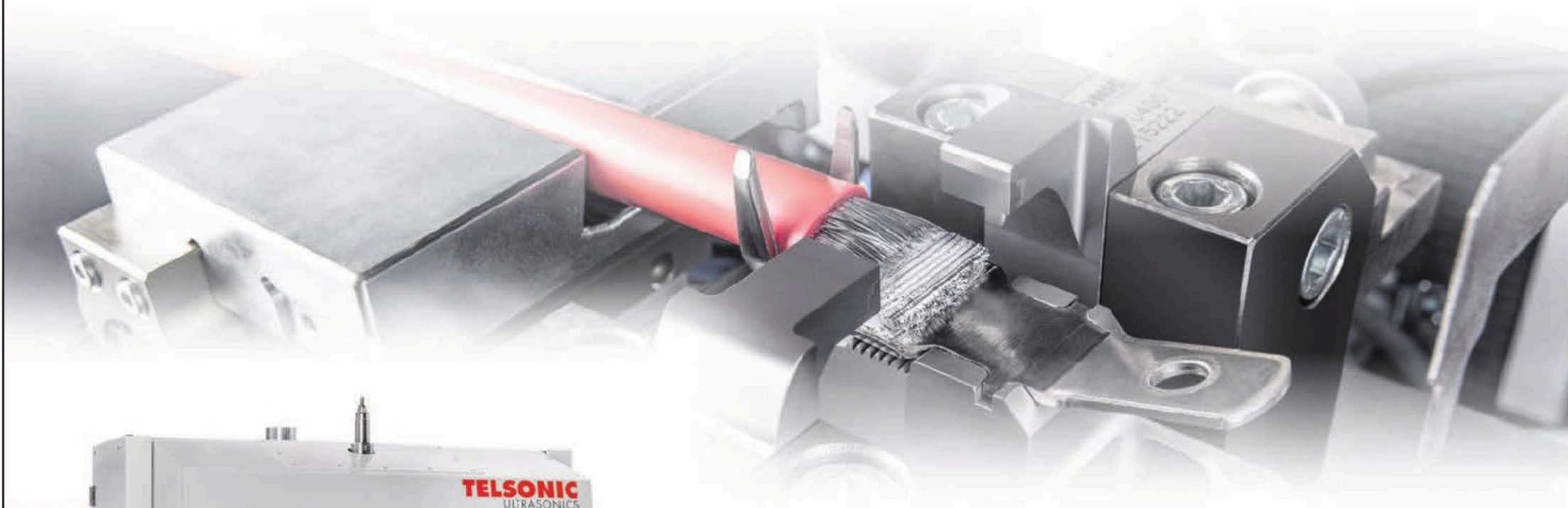
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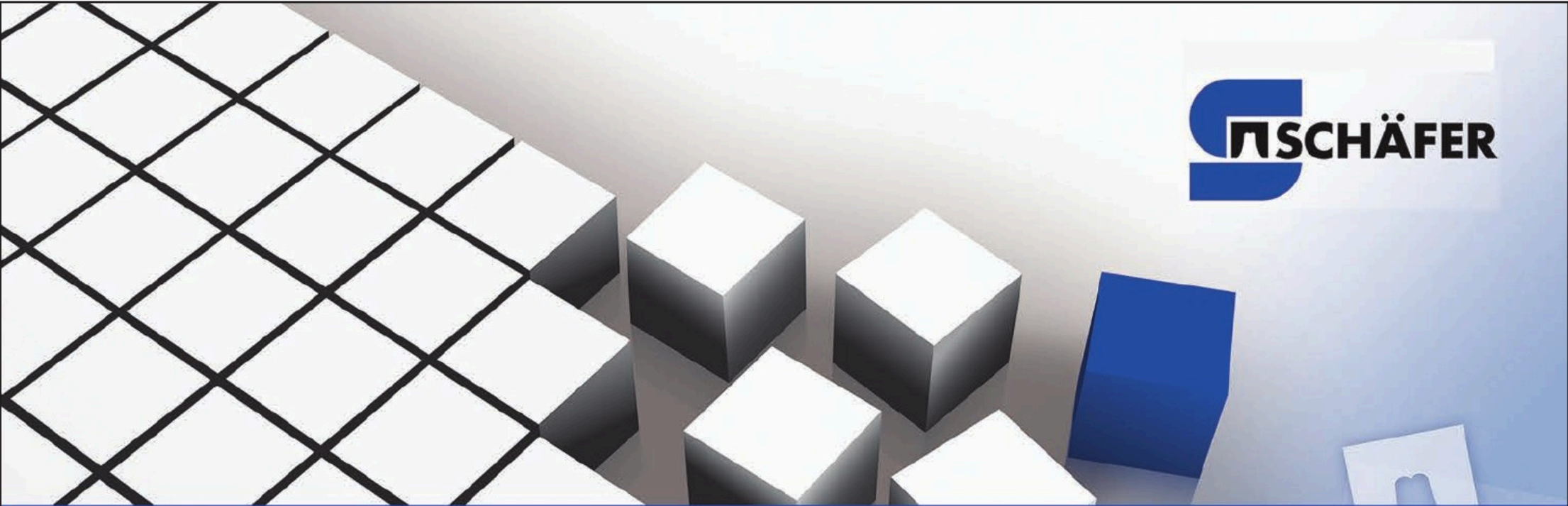
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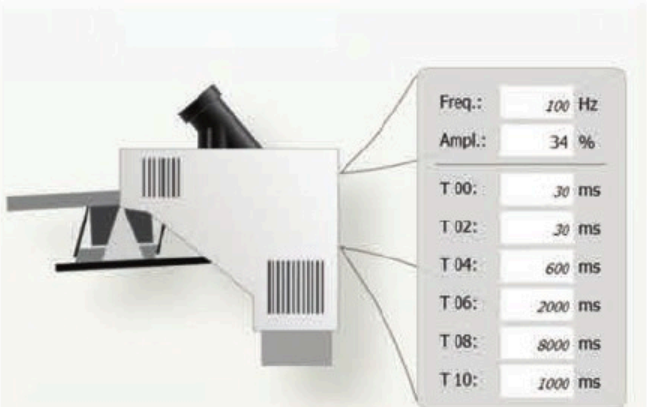
WireStar20



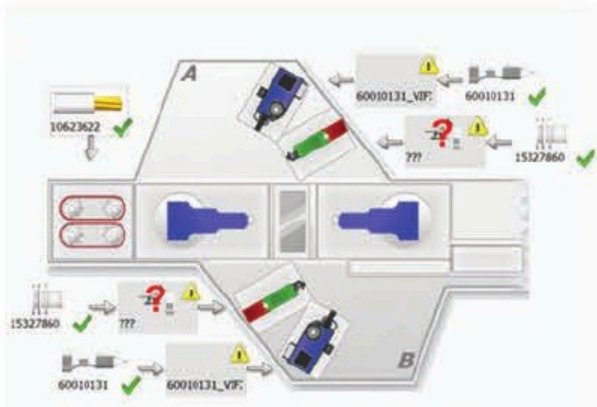
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Matching of components



Mobile process control

NEWS PLUGS continued

Zuken and Aras Partner to Deliver Ideal EDM/PLM Environment

Zuken®, and Aras®, a leader in enterprise Product Lifecycle Management (PLM) software, have entered into a partnership to develop a new approach for managing cross-discipline product development processes that include electrical and electronic design data from design creation to manufacturing. The new solution will span enterprise processes across the lifecycle, as well as detailed electrical design and manufacturing.

The partnership will deliver functionality that couples a domain-specific work-in-process (WIP) library and design data management system, with the enterprise PLM platform. The result will replace traditional “zip-up-the-directory” functionality with significant new capabilities that include where-used traceability for IP blocks and components, merging of design and manufacturing processes, and enhanced ECO processes.

“Zuken and Aras see a future where the electronic and mechanical design processes are coordinated more effectively to enable true systems engineering,” said Peter Schroer, CEO of Aras. “We believe that by working together we can provide a more holistic approach to support the business of engineering.”

Zuken will provide DS-2™, an engineering data management (EDM) solution for managing work-in-process library and design data for circuit/board development. DS-2 is a domain-specific solution for managing native design data across multiple sites in a project-oriented fashion.

Kazuhiro Kariya, Managing Director and Chief Technology Officer at Zuken, Inc.

“Manufacturers are using digital solutions in increasingly sophisticated ways to dramatically boost productivity,” said Kazuhiro Kariya, Managing Director and Chief Technology Officer at Zuken, Inc. “We are partnering with Aras to enable new processes for multi-disciplinary collaboration across the enterprise.”

Aras will provide Aras Innovator, an enterprise-level PLM platform and suite, for the complex sys-

tems engineering processes in product development, manufacturing, quality and the supply chain. The combination will provide engineers across the organization with improved data integrity and more efficient processes from design through to manufacturing.



Kazuhiro Kariya, Zuken



Peter Schroer, CEO of Aras

The new solution is planned to be available early in the 2017 calendar year.

For further information visit www.zuken.com and www.aras.com

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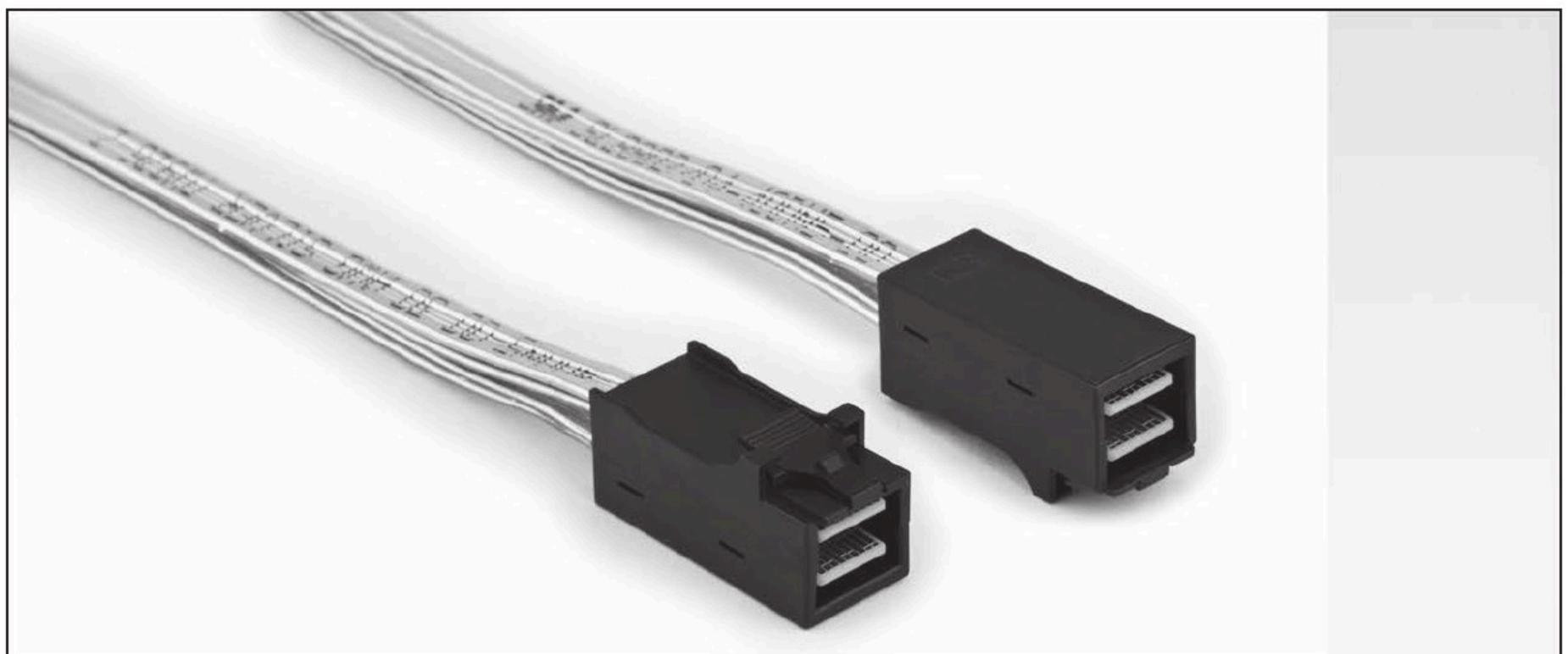
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NEWS PLUGS continued


**Fiber Optic Center, Inc.
Announces the Hernon®
Tuffbond® 302 Epoxy Adhesive
Packaged by ÅngströmBond**

Fiber Optic Center, Inc., (FOC), an international leading distributor specializing in helping their customers make the best cable assemblies in the world, announces the addition of Hernon® Tuffbond® 302 epoxy adhesive, packaged by ÅngströmBond, to their extensive epoxy line.

Tuffbond® 302 consistently performs under temperature cycling from -54C to 85C. It is a high viscosity material that flows well and cures fast. Known as a '5 minute epoxy', it does not absorb humidity exhibiting moisture chemical and heat

resistance. Tuffbond® 302 is used in the fiber optic industry for potting and encapsulation. It is also recommended for bonding metals, wood, ceramics, etc., and can be used for potting and encapsulation of electrical and electronic components.

Product Benefits include:

- Fast cure at room temperature (about 5 minutes)
- Low shrinkage
- 100% reactive, non-solvent system
- Easy mixing ratio of resin and hardener
- No fuming on gelation

Refer to the full datasheet for Typical Properties, both uncured and cured, storage, and applications: <http://bit.ly/2bE5GzI>

For safe handling information on this product, consult the Material Safety Data



Tuffbond® 302 Epoxy Adhesive

Sheet (SDS) tab on the product page: <http://bit.ly/2aYDod0>

Technical questions on Tuffbond® 302 can be asked to Kelly Barker, Fiber Optic Center, Inc.'s Epoxy Technical Manager at 508-264-5600 or email: KBarker@focenter.com

Additional resources from the FOC team include:

- FOC technical solution content: <http://bit.ly/29WTvgn>
- Glossary, Acronyms, Military Specifications for Connectors: <http://bit.ly/2a2EFn8>
- Q&A Resource: email technical questions to AskFOC@focenter.com

Fiber Optic Center, Inc., (FOC), is an international leader in distributing fiber optic components, equipment and supplies and has been helping customers make cable assemblies in the world for over two decades. For further information contact: Fiber Optic Center, Inc., 23 Centre Street, New Bedford, MA 02740-6322

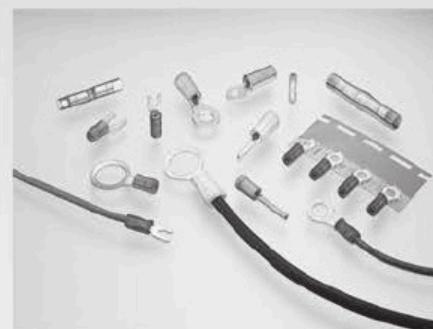
UNIFORM TERMINATION JUST GOT EASIER - AND FREE

TE Connectivity's (TE) PIDG, PLASTI-GRIP, SOLISTRAND and FASTON Terminals and Splices are designed for complete and uniform reliability in the most difficult circuit environments. The many millions of TE terminals that are still deployed twenty years after installation are a testament to the rigorous testing and research that went into their design and manufacturing. Many of the TE PIDG terminals meet or exceed the requirements of SAE AS7928, Type II, Class 1 and 2.

TE's design of the crimping dies and construction of the terminal allows for uniform insulation thickness under crimping pressure, transmitting pressure evenly to the center of the crimp area. This produces a crimp and terminal that are alike in appearance and performance. PIDG products are available as rings, spades, flanged spaded, slotted rings, splices in several other varieties and sizes.

PIDG Terminals & Splices

- Terminals are made of high conductivity copper
- Most product is UL and CSA approved - Insulation is UL 94V-2 rated
- Product is rated for use up to 105 degrees C and 300 Volts for terminals and 600 Volts for splices
- PIDG terminals have copper sleeve for improved wire insulation support
- The body has serrations for maximum contact and tensile strength
- Insulation sleeves and the corresponding tooling are color-coded by wire-size for easier identification



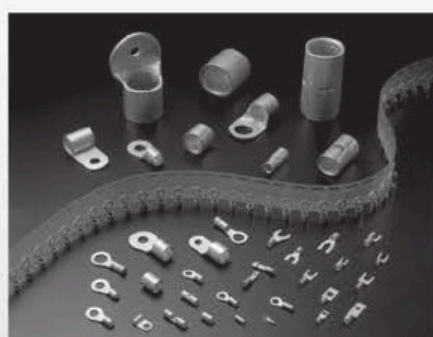
PLASTI-GRIP Terminals & Splices

- Vinyl insulation sleeve provides good dielectric strength and supports the wire insulation so that no bare wire is exposed
- Most product is UL and CSA approved
- Most product rated to 105 degrees C, with an operating voltage of 600 V
- Insulation is 94V-0 rated
- Funneled wire entry on terminal prevents turned back wire strands and permits rapid wire insertion during high speed production
- Serrations in the crimp barrel provide maximum contact and tensile strength after crimping



SOLISTRAND Terminals & Splices

- Constructed of fine grade high conductivity copper for optimal electrical performance
- The brazed seam increases metal strength around the entire barrel area assuring withstanding harsh industrial environments. It also prevents pinched and stubbed wires.
- Product is rated for 170 degrees C maximum and therefor suitable in all standard applications.
- Applied with "W" crimp tooling



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Indium Corporation Features InFORMS® Reinforced Solder Preforms at IMAPS 2016

Indium Corporation will feature its reinforced indium and solder alloy fabrications, InFORMS®, at IMAPS 49th International Symposium on Microelectronics (IMAPS 2016 - Packaging the Connected World), Oct. 10-13, in Pasadena, Calif.

InFORMS are reinforced solder preforms that maintain a constant bondline thickness, thus significantly improving thermal cycling reliability. This is a key requirement in many applications, including die-attach and baseplate-attach for IGBTs.

In one study where InFORMS were used to solder a DBC and baseplate of an IGBT, the following was achieved:

4X improved thermal cycling reliability compared to a preform-only approach

2X improved thermal cycling reliability compared to a preform + Al wirebond stitch approach

Low-voiding of <1%

Lower cost of ownership – an InFORM is a drop-in replacement for a standard preform or solder paste, requiring no additional process steps or equipment

InFORMS provide engineers with an enhanced material for the development of new, or the improvement of existing, applications.

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NEWS PLUGS continued



Sonobond's Ultrasonic Battery Assembly Capabilities Scheduled for International Display

Sonobond's ultrasonic battery assembly prowess was featured at trade shows in China and Michigan this year. The company's participation in two events is indicative of growing worldwide interest in battery solutions for renewable energy storage, notes Sonobond President Janet Devine.

"Increased demand for affordable and efficient battery storage, as well as rechargeable batteries, has stimulated manufacturers' awareness of our reliable, eco-friendly, high-conductivity, ultrasonic assembly methods," explains Devine.

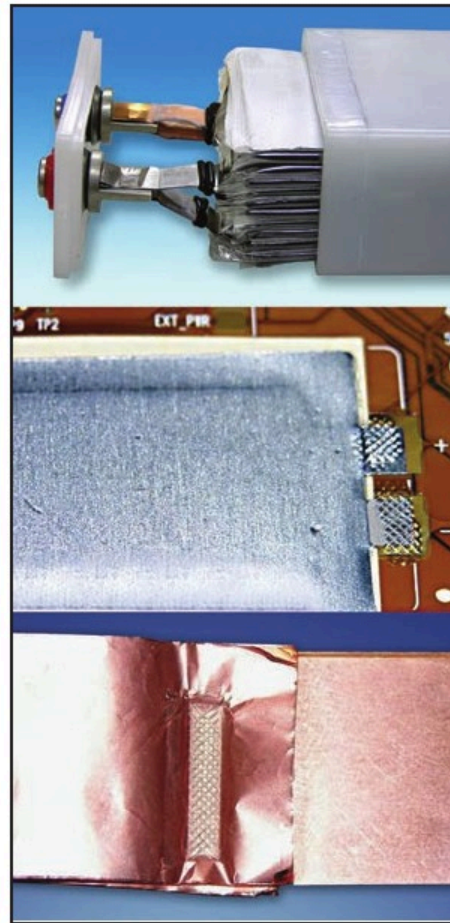
The China International Battery Industry Fair took place August 23 – 25, at the Shanghai New International Expo Center in Shanghai, while The Battery Show Exhibition & Conference occurred in September in Novi, Mich. Both trade shows attracted leading global suppliers of materials and equipment related to the battery industry.

Providing Eco-friendly Assembly for Alternative Energy Storage

Sonobond is already supplying ultrasonic assembly solutions to manufacturers developing new and

innovative battery storage systems.

"Currently, wind and solar account for only about 6 percent of the United States' electrical power generation. But, as reliance on alternative sources of energy increases, storage batteries will become essential as backup, providing power when there is no wind or sun," says Devine.



Sonobond's ultrasonic metal welding technology provides a cost-effective, environmentally friendly method for attaching multiple layers of foil to battery terminals, even for the assembly of new, re-chargeable batteries designed to store electrical energy from alternative and conventional sources.

"In fact, some battery manufacturers are developing new formats for home and utility-sized energy storage systems that could eventually make wind and solar more consistent power resources. And some battery manufacturers hoping to commercialize new types of rechargeable batteries – that may eventually provide backup power, as well as grid-scale distributive storage to maintain peak power – are employing Sonobond's ultrasonic assembly technology."

She adds that the company continues to provide welding units to manufacturers seeking environmentally friendly methods for assembling existing lithium-ion and NiMH rechargeable batteries used in applications such as all-electric and hybrid automobiles, medical technology, and military and telecommunication fields.

Unique System Ensures Reliable Welds

Sonobond's ultrasonic metal spot welders require no external heat, current, fluxes or fillers and product no arcs, sparks or fumes. Instead, the welders create durable bonds by employing the company's unique, patented Wedge-Reed ultrasonic bonding system that combines high vibratory force and low amplitude coupling. Using shear mode vibration parallel to the welding surface –

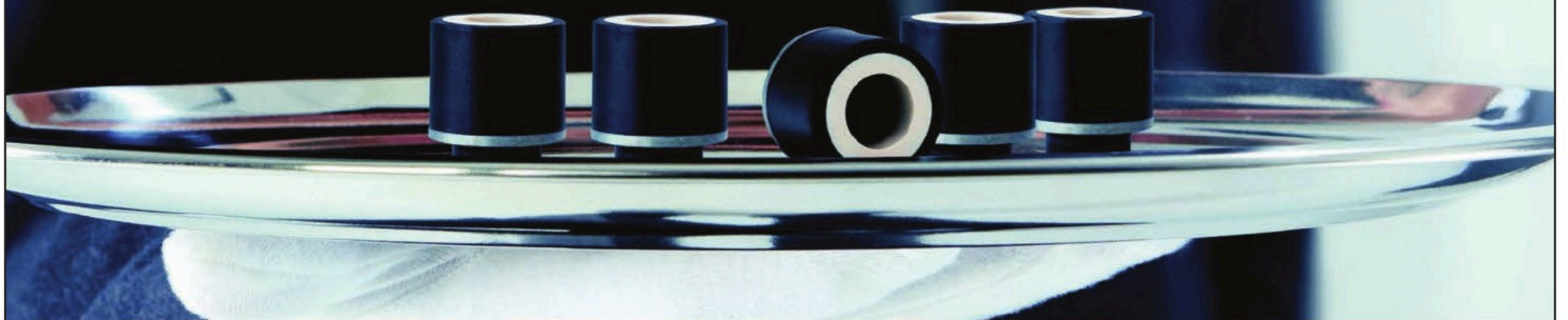
Continued on page 42

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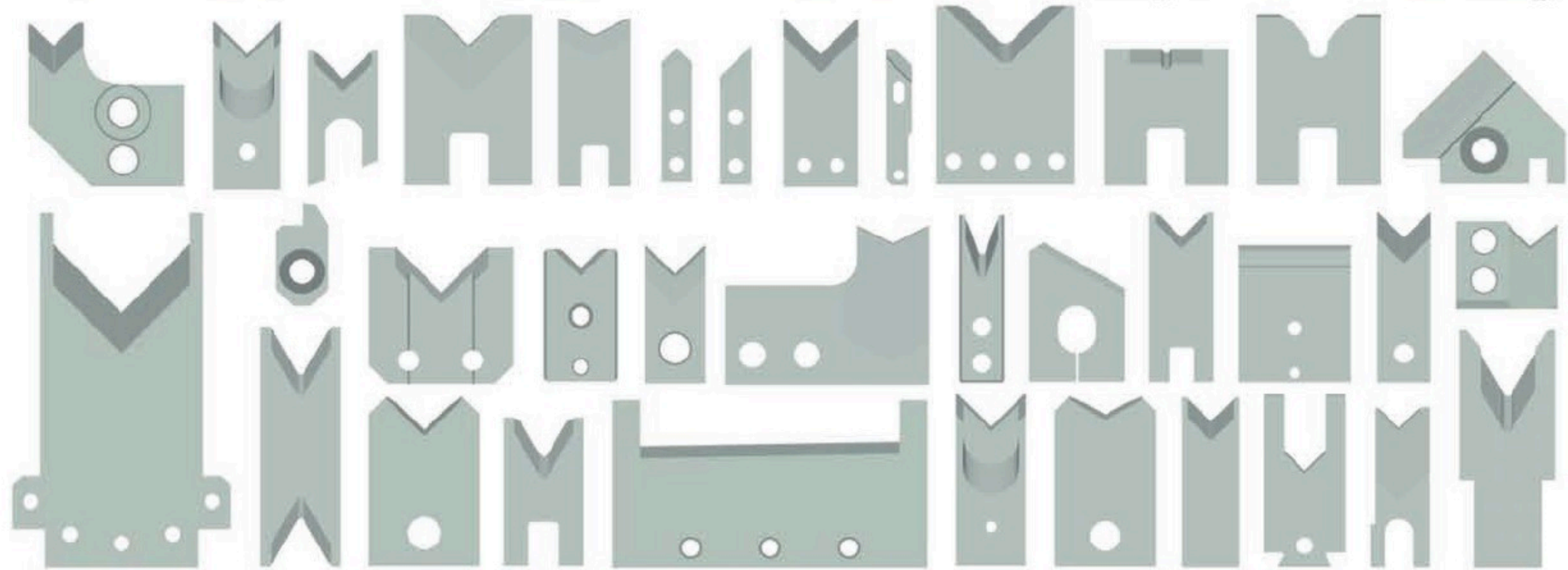
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- MPF-35 Prefeeders for high speed fully automatic wire processing machines



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| • Artos | • KM Digitech | • Kodera | • Makfil | • Schleuniger | • Toyojamco/JAM |
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Mechtrix Equipment

Mechtrix has designed a number of unique machines to solve specific wire processing problems. These machines range in complexity from our patented center stripping machines to terminal paper winding machines. These machines include:

- | | |
|---|--|
| • Wire Prefeeding Equipment | • Terminal Carrier Strip Cut-off Devices |
| • Heavy Duty Benchtop Wire Stripping Machines | • Terminal Paper Winding Machines |
| • Automatic Center Stripping Machines | • Terminal Applicators |





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By combining the resources, expertise and technologies of DSG-Canusa heat shrink products and Shawflex wire and cable, we're able to offer a complete range of custom cable and advanced heat shrink technologies to simplify installation and to protect your electrical systems.

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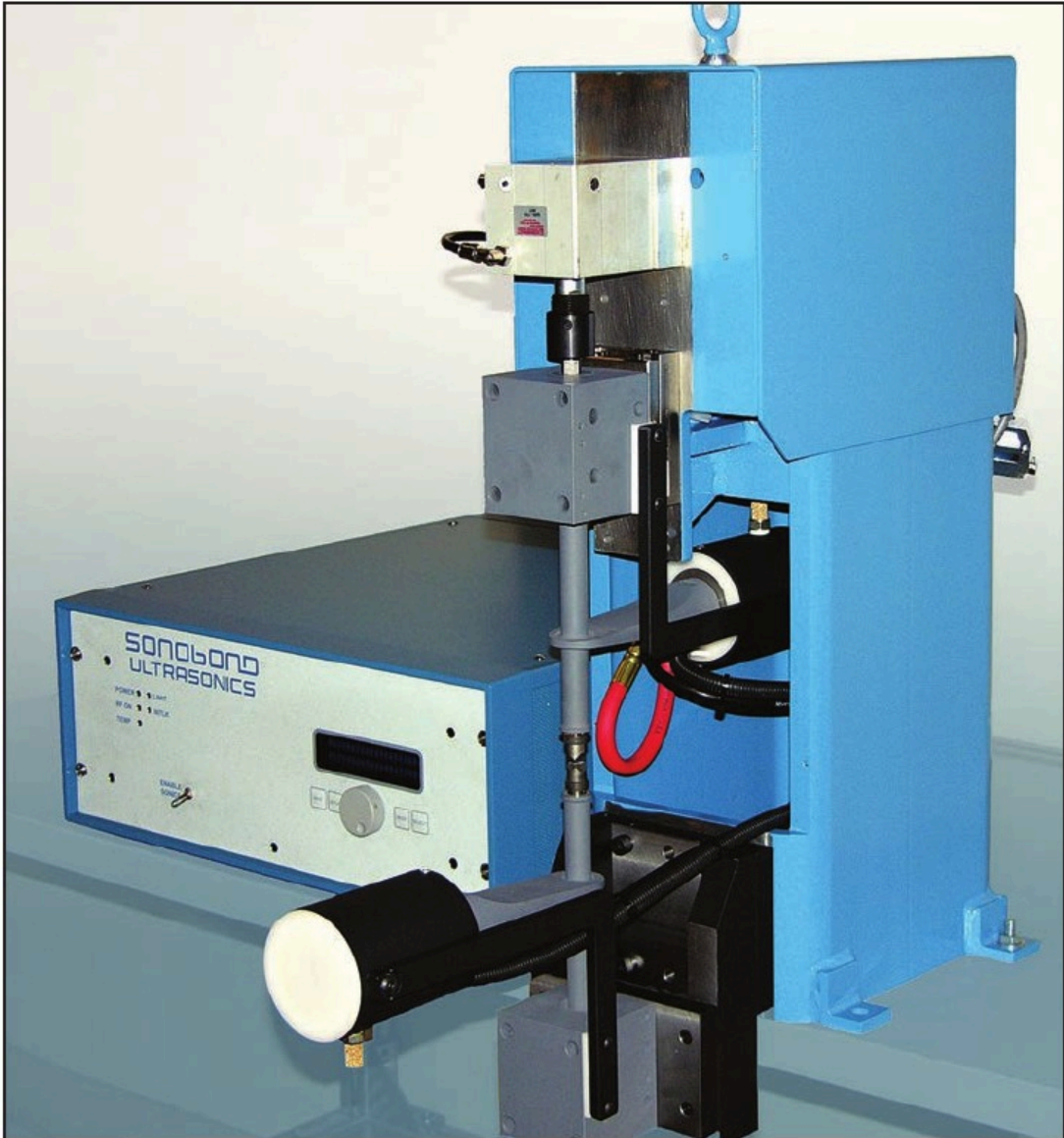


See how ShawFlex wire & cable and DSG-Canusa heat shrink products can protect your operations valuable assets and equipment systems at shawcor.com/connection-systems/



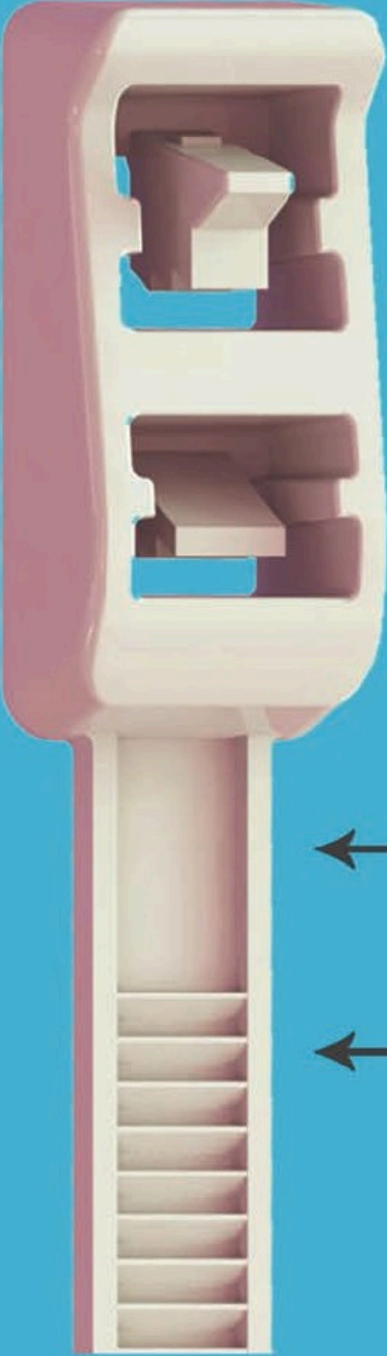
Continued from page 40 _____

while the line of force is directly over the parts to be welded – achieves precise, dependable, solid-state and highly conductive welds. Sonobond's is also the only ultrasonic assembly system that can weld most oxidized and tinned metals in one pulse without pre-cleaning.




In addition to assembling newly designed rechargeable batteries, Sonobond's Dual Head Ultrasonic Spot Welder is ideal for manufacturing existing lithium-ion, NiMH rechargeable batteries and pouch cells. The machine can weld foils as thin as seven microns without tearing, is the first ultrasonic machine that can join up to 100 layers of copper or aluminum foil, and welds most oxidized and tinned metals in one pulse without pre-cleaning.

2-in-1 DualZip Cable Tie



- RELEASABLE & REUSABLE LOCK**
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 - Quick release tab
 - Re-use hundreds of times
- PERMANENT LOCK**
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 - Won't damage bundled items



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Ultrasonic Spot Welding Equipment

Sonobond offers two ultrasonic spot welder models that weld multiple layers of foils to tabs or terminals, accommodate battery pouch assembly and HV termination welding. The SonoWeld® 1600 and Dual Heat Spot (DHS) Welders weld foils as thin as seven microns. Also, the Dual Head Spot Welder is the first ultrasonic welder that can join up to 100 layers of copper or aluminum foil without tearing, and in just one pulse. The units use outputs of 1,500, 2,500 or 3,500 watts. Both models have digital displays that allow weld control to be selected by time, energy, or distance. Each unit has a power supply with a built-microprocessor featuring automatic frequency control, overload protection, and storage and recall of up to 250 protocols.

The SonoWeld® 1600 and Dual Head Spot Welders employ heat-treated, tool steel Taper Lock Tips that can perform up to 30,000 welds before redressing is required and as many as 100,000 welds before being easily removed and replaced. As with all Sonobond equipment, the spot welders require only minimal training.

Achieving New Electrical Grid Storage Capability

“It’s estimated that the market for batteries providing stationary energy storage will increase from about \$1 billion today, to approximately \$6 billion by 2020,” notes Devine. “Sonobond fully expects to help manufacturers achieve that goal, which potentially promises to make our energy grid cleaner and more resilient.”

Free Ultrasonic Viability Test

To assist battery manufacturers in determining the benefits of ultrasonic welding for their particular applications and requirements, Sonobond offers a free Ultrasonic Welding Viability Test. Using materials provided by the manufacturer, Sonobond produces no-cost, no-obligation sample welds. If Sonobond’s equipment is incorporated into the customer’s production process, service and technical support are provided before, during and after installation.

For more immediate information or details on submitting materials for a free Ultrasonic Welding Viability Test visit www.sonobondultrasonics.com

^{1,2,3} Murray, Charles “Renewable Energy’s Secret Weapon,” Design News, December 29, 2015, www.designnews.com

CableEye® Adapts To Your Needs!

Setting the screen language is only one way in which the flexible, intuitive CableEye cable and harness test system adapts to meet your needs.

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- If you need to protect your stored cable data from inadvertent erasure or tampering, set each operator’s log-in privilege as needed.
- If you need to integrate your testers in an automation environment, we can provide a LabView interface, an API, and import/export tools.
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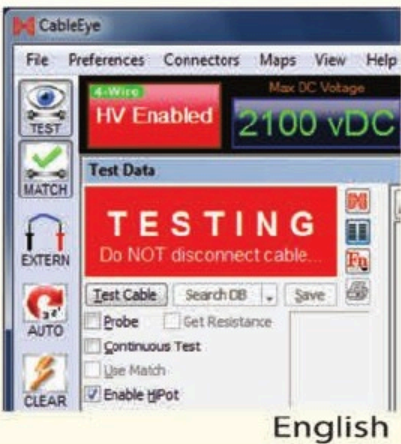
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See for yourself how CableEye will increase your productivity –

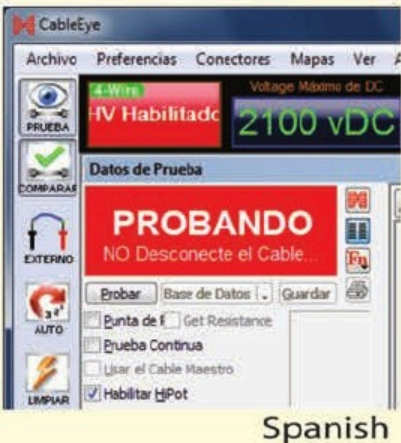
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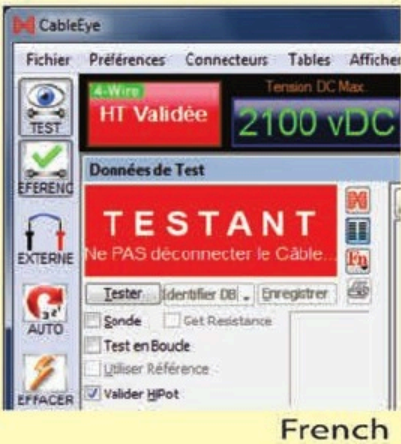
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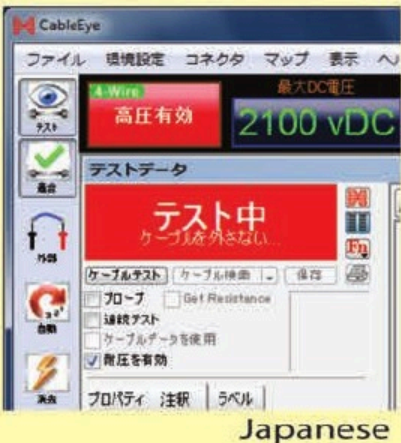
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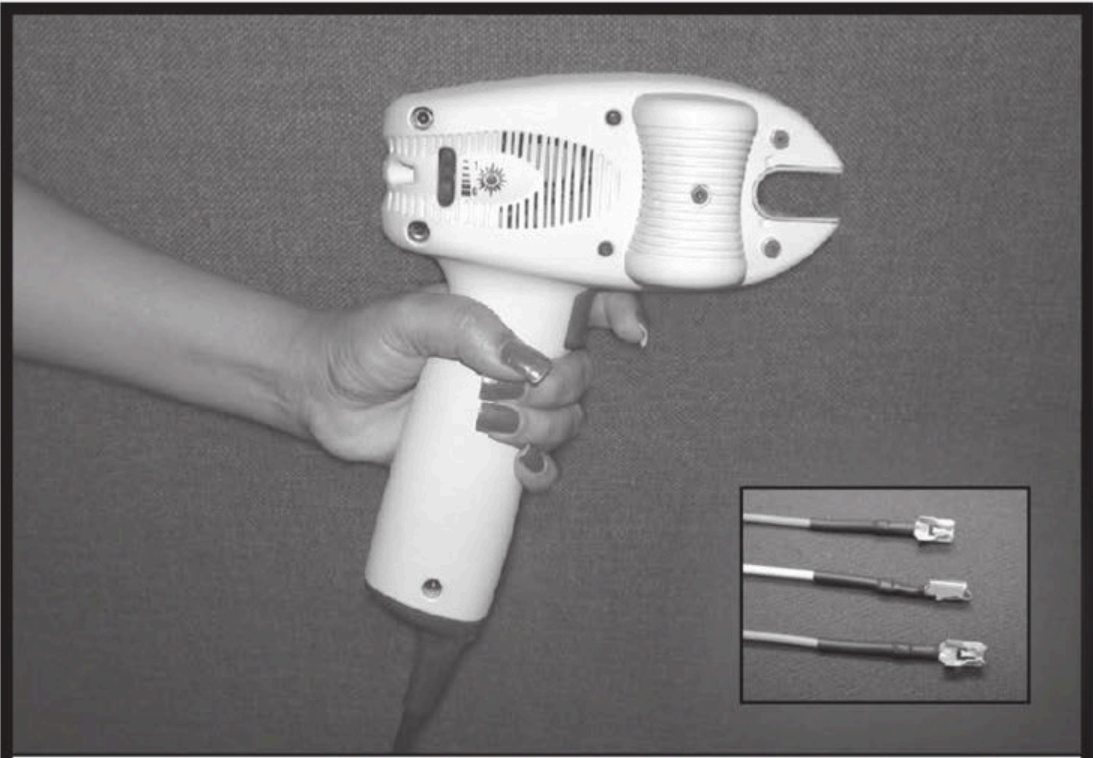
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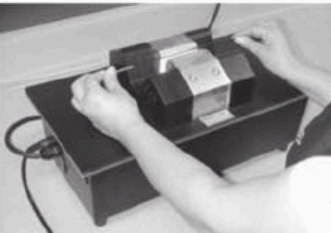
Our Gun out-shrinks the competition
5 seconds vs. 12 seconds*

The Focus-Lite™ FLG3™ by Judco Manufacturing, Inc., is the solution to all your heat-shrink operations. You can say goodbye to the high labor cost, excessive heat, and inefficiencies of other methods. The Focus-Lite™ reduces the time necessary to shrink most types of heat shrink tubing. It also improves the process control and overall quality of your shrink operation. The FLG3™ can be used for high volume benchtop applications and is completely portable and mobile for board mounted harnesses and tight space assemblies.

Focus-Lite™ technology uses radiant energy to shrink heat-shrink tubing in a fraction of the time of traditional methods.

Here's why it works: Dual Quartz Halogen bulbs are focused to direct all of the usable radiant energy to the cable/wire diameter covered by shrink tube. This allows for 10 times the average energy expended by the bulbs to be delivered to the target zone. What you will see is an amazing difference in shrink time!

The Focus-Lite™ is equipped with an adjustable timer for repeatable shrinking, time after time. It also has a dimmer switch that controls the power for sensitive components. Visit our website at www.judco.net and see our full line of Focus-Lite™ products.



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VERTICAL-TRAY FLAME TESTS:
IEEE 1202, IEEE 383, AND
UL 1685

Vertical-tray flame tests are commonly used in the wire and cable industry to analyze cable flame propagation for industrial control and power cables. These tests specifically examine the flame spread on cables installed in a vertical test chamber, simulating real-world industrial cable conditions when installed in a cable tray or other support systems.

Standard cable flame-propagation tests benefit cable manufacturers, electrical distributors and end-users. These procedures provide consistent, repeatable results and measurable test acceptance criteria that allow the selection of the correct product for the application. The standard flame tests commonly specified in the industry are UL 1685, IEEE 1202, and IEEE 383.

Overview of the UL 1685 Standard

UL 1685 Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables is an industry standard that provides the test methods for two types of vertical flame tests:

- UL Flame Exposure

- FT4/IEEE 1202 Type of Flame Exposure

The UL version and the FT4/IEEE 1202 version both measure flame propagation by testing groups of cables. These tests vary in the cable loading, spacing, burner angle, flame spread and optional smoke requirements. UL cable standards provided in Table 1 allow control and industrial cables to meet one of the UL 1685 vertical flame tests to be UL listed.

Cable Standard	Cable Types
UL 13 Power Limited Cables	PLTC, CL3, CL2
UL 1072 Medium Voltage Cables	Type MV-90, MV-105
UL 1277 Tray Cables	Type TC
UL 1569 Metal-Clad Cables	Type MC

Table 1: UL Control and Instrumentation Cable Standards Containing Vertical Flame Tests

The UL Flame Exposure test of UL 1685 measures the flame spread in groups of cables in a steel ladder tray. The tray is 12 inches wide, 3 inches deep and 96 inches long. The rungs measure 1 inch in the direction parallel to the length of the tray and are spaced 9 inches apart. The tray is mounted vertically on the floor of the test chamber or on an optional tray base and the center of the tray is filled with cable samples in one layer spaced 1/2 cable diameter apart. A mixture of air and propane

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ON MACHINE
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Operation 1
Start Week 1 End Week 8
WVO-1218
Operation 2
Start Week 1 End Week 8
WVO-1219
Operation 3
Start Week 1 End Week 8
WVO-1220
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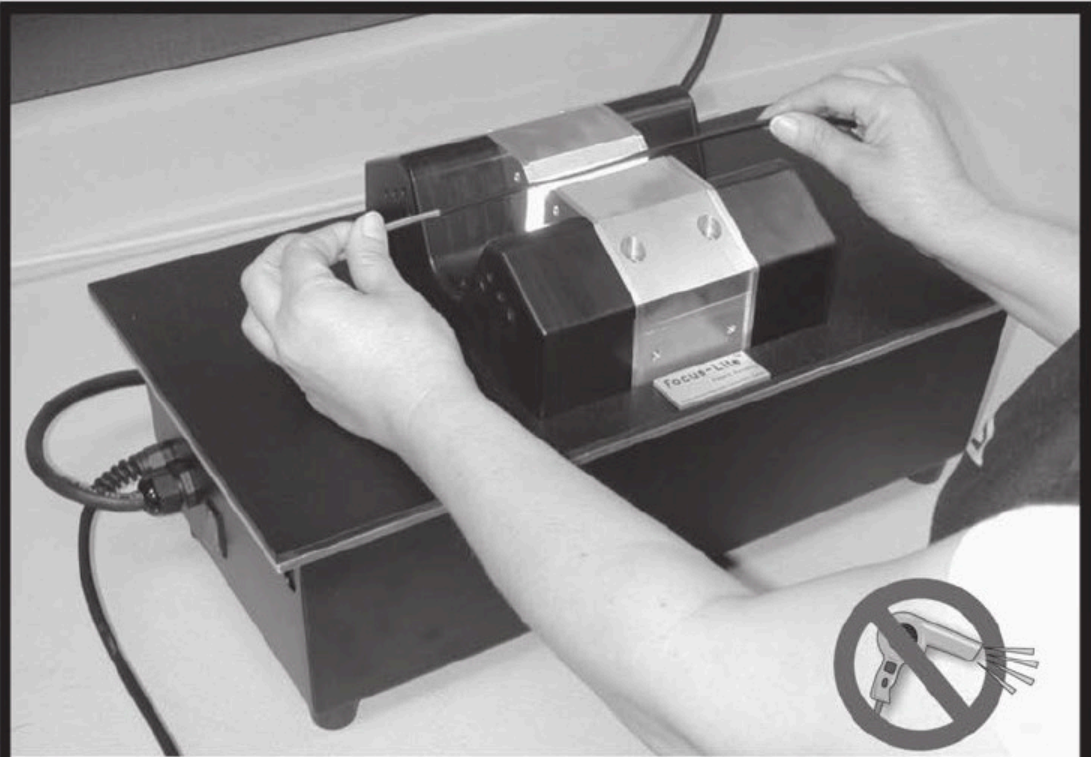
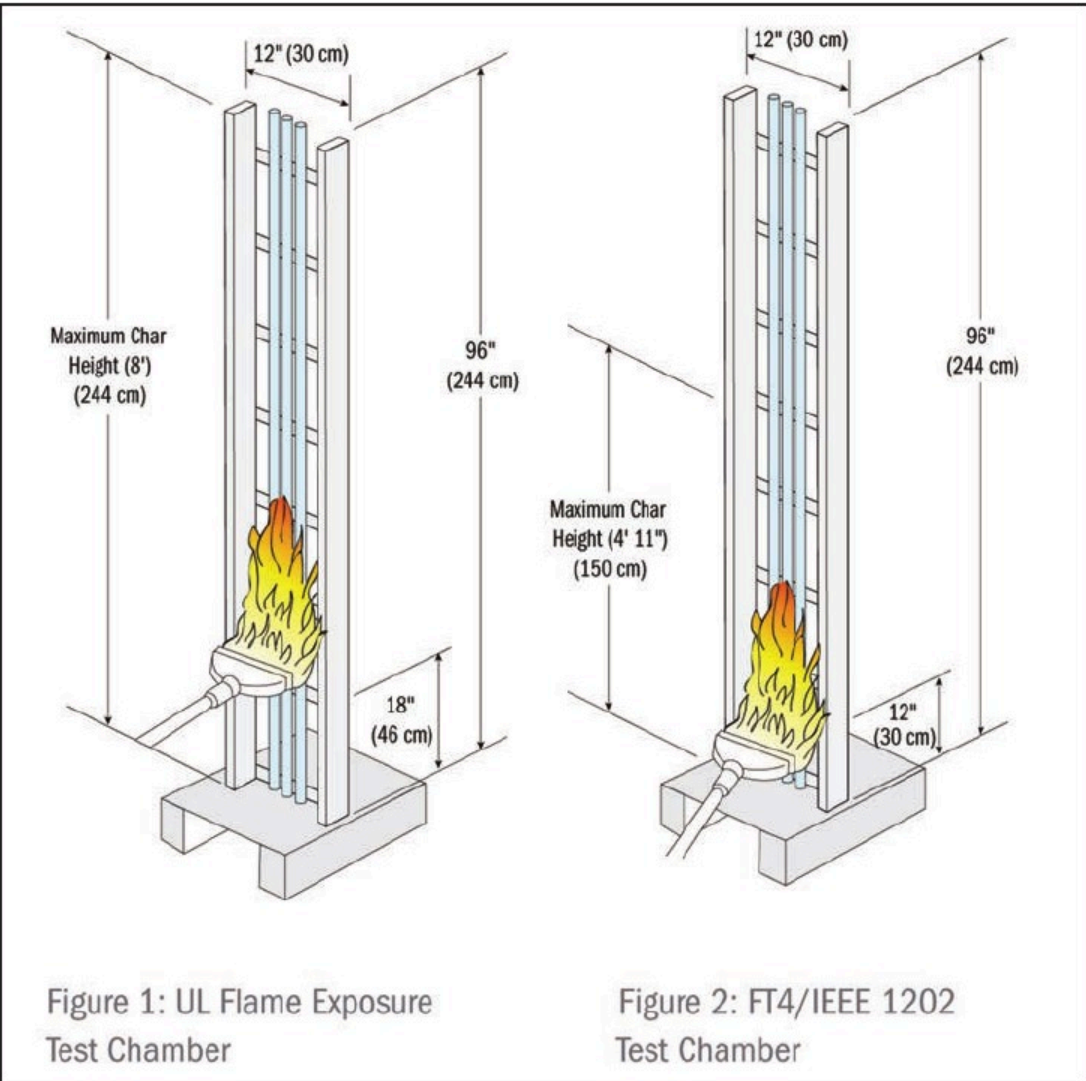
is burned using a ribbon burner. The burner is placed horizontally 3 inches from the surface of the cable, 18 inches from the bottom of the tray and midway between two rungs. The power output of the burner is 70,000 Btu/hr. The flame is applied for twenty minutes and then removed.

A cable passes the vertical-tray test if the cable char height is less than 8 feet. A cable may continue to burn after the burner is shut off; however, the test is not complete until the cable stops burning.

The UL Flame Exposure test also contains an optional smoke test. Cables that meet the smoke test have to meet the following requirements:

- a) The total smoke released is to be 95 m² or less
- b) The peak smoke release rate is to be 0.25 m²/s or less

Continued on page 47



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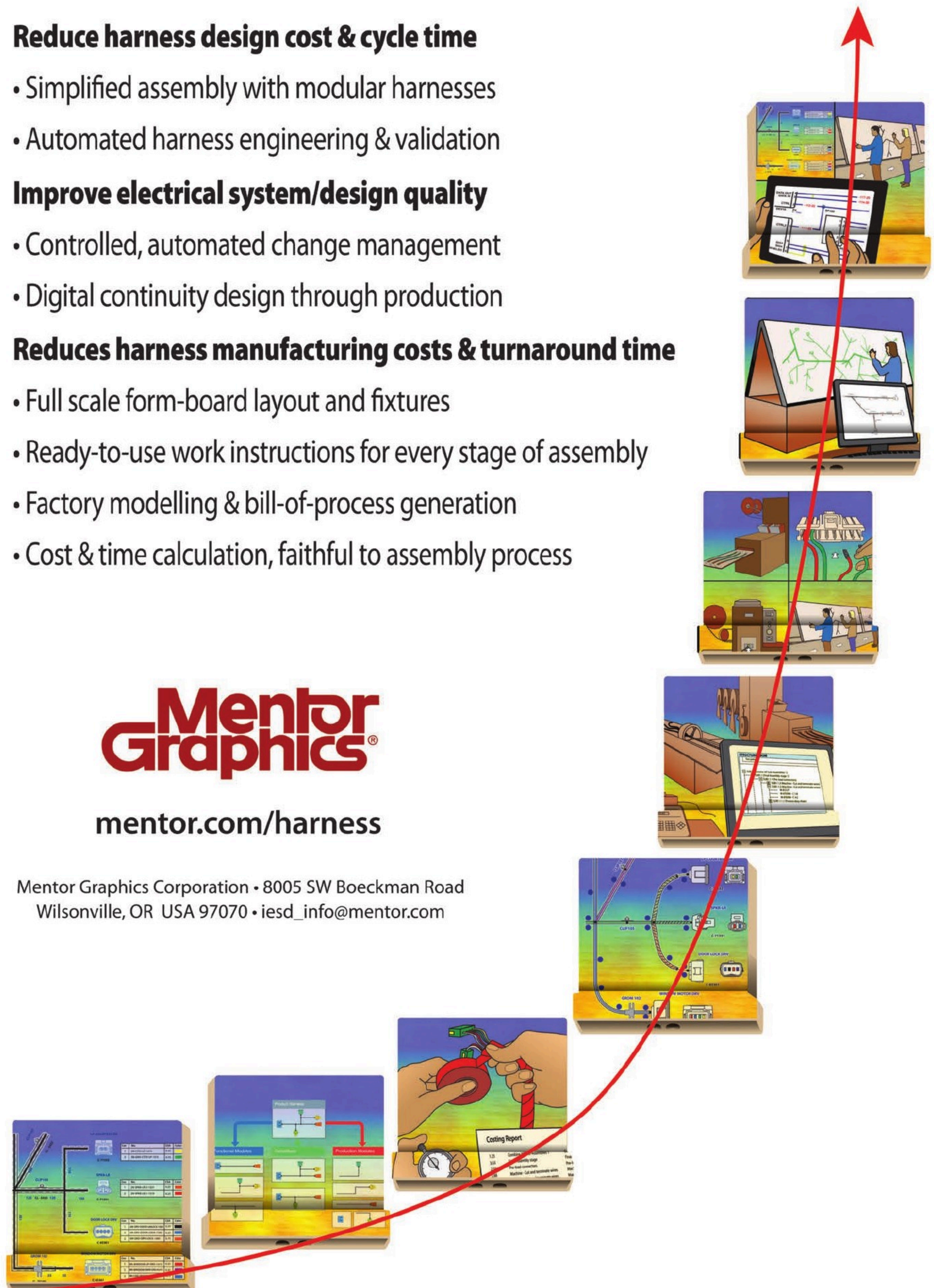
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Continued from page 45

UL 1685—FT4/IEEE 1202

The FT4/IEEE 1202 flame exposure version of UL 1685 is similar to the UL Flame Exposure version but contains a few variations. This test measures the flame spread in groups of cables in a steel ladder tray.

The tray is 12 inches wide, 3 inches deep and 96 inches long. The rungs measure 1 inch in the direction parallel to the length of the tray and are spaced 9 inches apart. The tray is mounted vertically on the floor of the test chamber or on an optional tray base. The tray is filled with cable samples. Depending on the outer diameter of the cable, different spacing requirements apply. A mixture of air and propane is burned using a ribbon burner. The burner is placed at a 20° angle 3 inches from the surface of the tray, 12 inches from the bottom of the tray. The power output of the burner is 70,000 Btu/hr. The flame is applied for twenty minutes and then removed.

A cable passes the vertical tray test if the cable char height is less than 4 feet, 11 inches. A cable may continue to burn after the burner is shut off; however, the test is not complete until the cable stops burning.

The FT4/IEEE 1202 also contains an optional smoke test. Cables that meet

the smoke test have to meet the following requirements:

- The total smoke released is to be 150 m² or less
- The peak smoke release rate is to be 0.40 m²/s or less

IEEE 383 Flame Test Reference

IEEE 383 is a Class 1E Nuclear Standard and provides requirements for cables and installations used in nuclear power generation facilities.

IEEE 383 previously contained a flame test in the 1974 version but was updated in 2003 and again in 2015. In 2003, the flame-test procedure was removed from the standard. Instead, IEEE 383-2003 Section 8 points users to IEEE 1202 as shown below:

Cables shall be flame retardant in accordance with the requirements of IEEE Std 1202-1991 or NFPA 262-2002. Switchboard cables, coaxial, twinaxial, and triaxial cables shall as a minimum pass the UL VW-1 flame test.*

Many existing cable specifications reference IEEE 383 in the cable flame-performance section for historical reasons. Based on the above reference, cables that meet the IEEE 1202 flame test meet the flame-requirements of IEEE 383.

*Source: IEEE 383-2003 Section 8

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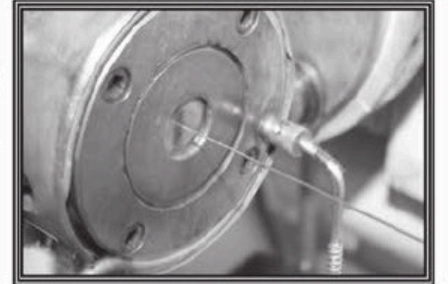


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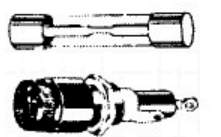
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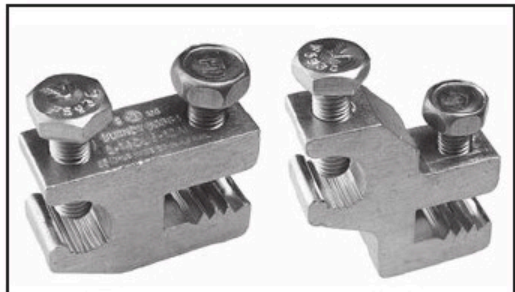
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NEWS PLUGS continued



BURNDY® Introduces Aluminum Lay-in Lugs for Solar Panel Applications

BURNDY® is pleased to announce new additions to their grounding product line. The new aluminum lay-in lugs are most suitable for solar panel applications. The connectors are for use with frames with a



Aluminum Lay-in Lugs for Solar Panel Applications

maximum thickness of 1/4 inch. They may also be used for cable to bus or cable to steel connections where the lay-in feature is necessary. Manufactured using high strength aluminum alloy, these connectors have the versatility to be used with aluminum and copper conductors. The serrations are provided to establish better contact and cut through oxidation, ensuring low contact resistance and high conductivity. The anodization on aluminum rails is nonconductive and electrical current cannot pass through this layer. BURNDY's cup point screw penetrates this layer allowing current to flow into the aluminum connector and consequently current flows to the conductor.

The connectors are UL467 and UL2703 Listed. The connectors accommodate copper cables from 14 AWG to 6 AWG and Aluminum cables from 12 AWG to 6 AWG. The connectors are also available in bulk.

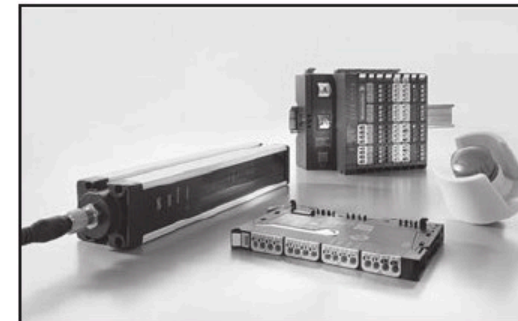
For further information please contact BURNDY® at 47 E. Industrial Park Drive, Manchester, New Hampshire, 03109, or visit website at www.BURNDY.com

NEW u-remote Safe Power-Feed Modules. Integrated Safety – No Safety Controller Needed

Weidmuller announces the release of the newest addition to their award-winning u-remote distributed I/O module line-up – the u-remote Safe Power-feed Modules. Unique to the market today, these compact safety modules feature integrated functionality to safely switch off power to all modules that are within a safety segment, eliminating the need for a safety controller. These modules meet stringent machine safety standards that include SIL 3 CL and Category 4 PL e, and can help increase efficiency and reduce wiring costs in applications by eliminating costly home run wiring while providing

immediate feedback on the status of the safety circuit.

The new UR20-PF-O safe power-feed modules safely switch off the power to all output modules when supplied from the safe power-feed slice. This function creates a “safety segment” that is managed locally by the UR20-PF-O safe power-feed module. The safety rated input works



Weidmuller's u-remote Safe Power-feed Modules

together with pulsed inputs to detect broken wires and short circuits. These safe power-feed modules go beyond standard safety relays by providing real-time feedback on which safety circuit is down. Since this functionality is built into the modules, there is no need for expensive safety controllers and complex safety programs.

Weidmuller's UR20-PF-O safe power-feed modules can be used in complex automation solutions by cascading multiple safe power-feed modules together.

Available in 1 input, 2 inputs, or 2 inputs with delay, the UR20-PF-O safe power-feed modules can offer cost savings for a wide range of safety-related equipment. For example, consider the case of an emergency stop button along with a light curtain: the u-remote standard output modules used within the u-remote “safety segment” contribute to even more cost savings when compared to the traditional safety cards for every output. One UR20-PF-O module can manage up to 12 switchable output modules versus the more expensive system design that requires a safety module for each output module.

With safety levels of SIL 3 CL as per DIN EN IEC 62061, and Category 4 PL e as per DIN EN ISO 13849-1, Weidmuller's UR20-PF-O safe power-feed modules offer the highest possible degree of machine safety protection.

For further information contact Weidmuller 821 Southlake Blvd. Richmond, Virginia 23236. Phone: (800) 849-9343 FAX: (804) 379-2593 Visit: www.weidmuller.com

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You can be sure your dies will fit your long-term needs, because they are completely compatible with all tools in the SDE system. They move with you as your needs grow.

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NEWS PLUGS continued



Cable Strength Member to Connector Analysis

Technical Horsepower Consulting, LLC. (THC), an international leader in consultation and technical training in the areas of optical cable, optical sensors, and cable/connector interface, announces the date and times they will be presenting Wayne M. Kachmar's paper, "Cable Strength Member to Connector Analysis."

The 65th IWCS International Cable & Connectivity Symposium is being held in Providence, RI October 2-5, 2016. IWCS organizes the International Cable & Connectivity Symposium for the exchange of information about product, material and process innovation for cabling and con-

nectivity solutions and for the development of industry professionals through education and scholarships. Online registration for the 2016 IWCS Conference is now open. (<http://bit.ly/29gZQyF>)

Technical Horsepower Consulting, LLC's presentation by Wayne M. Kachmar is scheduled for Wednesday morning, October 5, 2016, 8:00 AM – 11:25 AM. Mr. Kachmar will be presenting session #13. He is the fourth presenter. The location of the presentation will be announced at a later date.

The IWCS International Cable & Connectivity Symposium covers new technologies in wire, cable and connectivity products, processes and applications and generates over 100 papers and presentations in 20 sessions over three days.

For further information please visit www.iwcs.org.

UNIQA-PRO SINGLE CRIMP WIRE PROCESSOR

This lead making machine combines a proven platform, with a cost-effective, multiple station design and a wide range of customer options.

TE Connectivity's UNIQA-PRO Single Crimp Wire Processor is an ideal cost-effective solution for companies looking to ramp up production from multiple bench top machines without making the large capital investment of a double ended lead maker. With this single ended-lead maker, you will be able to save labor costs by measuring, cutting, stripping both ends, and crimping one end of a wire lead all with a single machine.

Features:

- 20% smaller footprint than a typical double ended lead maker.
- The UNIQA-PRO can ramp up your throughput by approximately 4X over a standard wire prep. and benchtop applicator.
- User-friendly PC control.
- Available in three different models to fit your needs: Basic machine with a passive wire collection system, basic machine with a passive wire collection system, crimp force monitor, and terminal scrap chopper, and a high force machine with an active wire collection system, crimp force monitor, and terminal scrap chopper.



Applications:

- Appliance industry
- Medical equipment
- Wire sizes ranging from 12 AWG – 26 AWG
- Anywhere manufacturers want to keep labor costs down without a large capital investment



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Fiber Optic Center, Inc. Announces the fibersect™ from Phenix Fiber Optics at ECOC 2016

Fiber Optic Center, Inc., (FOC), an international leading distributor specializing in helping their customers make cable assemblies, announces the fibersect™ from Phenix Fiber Optics for demo at ECOC 2016, stand 706, in Düsseldorf, Germany September 19-21, 2016. The fibersect™ rapidly removes the epoxy from the face of the MT ferrule during MTP/MPO connector processing.

The fibersect™ (<http://bit.ly/24TpGzl>) quickly cuts off the epoxy from the face of all MT ferrules (4, 8, 12, 16, 24, 48, and 72 fibers) during MTP/MPO connector processing. The resulting flat cut, very close to the ferrule face, presents the ideal surface for polishing, and markedly improves end face geometry. There are improvements throughput and first pass yield by eliminating manual steps and minimizing polishing, resulting in significant savings in production. Adapters can be switched to cut either 0° (flat) or 8° angled MT ferrules and other adapters are available to cut all single fiber ferrules and connectors. The small footprint and battery power of the fibersect provides exceptional portability and ease of use in the production environment.

The fibersect™ advantages include:

- cuts all MT ferrules, 4 to 72 fibers
- cuts flat
- one button solution
- superior end face geometry
- palm size portability

- no core cracks
- battery powered
- no more hand cleaving
- no more denubbing
- no more air polishing
- a fraction of the laser cost
- savings in production

The simplicity is in a three step process. STEP ONE: Insert the ferrule in the slot, STEP TWO: Press the red button to start the cut, and STEP THREE: Cut is completed.

The field of fiber optics has evolved dramatically over the past 40 years, and Roger Robichaud, founder of Phenix Fiber Optics, has been a pioneer in this evolution. In 1978 he founded Orionics, the original manufacturer of fusion splicers and OTDRs in the United States. Phenix Fiber Optics was created in 2005 to pursue research in fiber instrumentation to address the advancing needs of today's industry. The fibersect™, the newest instrument, exemplifies the achievement of these goals. It provides a faster, simpler, safer and environmentally sound method of cutting multi-fiber ferrules.

Technical questions on the fibersect™ can be asked to the FOC team at 800-473-4237.

Additional resources from the FOC team include:

- FOC technical solution content: <http://bit.ly/29WTvgn>
- Glossary, Acronyms, Military Specifications for Connectors: <http://bit.ly/2a2EFn8>
- Q&A Resource: email technical questions to AskFOC@focenter.com

Fiber Optic Center, Inc., (FOC), is an international leader in distributing fiber optic components, equipment and supplies and has been helping customers make assemblies for over two decades. In these key technology areas, FOC is "at least as technical as the manufacturer" about the products they sell. Striving to "make the business part easy," they offer outstanding and personal customer service, low or no minimum purchase order values, and from-stock delivery on industry-leading products and technology. FOC is the industry connection to the most innovative optical products, technologies and technical experts who integrate their manufacturing knowledge and vast experience into customers' worldwide operations. @FiberOpticCntr



Phenix Fibersect Mechanical Connector Cleaver

For further information contact: Fiber Optic Center, Inc., 23 Centre St, New Bedford, MA 02740-6322
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NEWS PLUGS continued

**BURNDY® introduces new Bolted Wedge In-Line Disconnect Switch**

BURNDY® is pleased to announce the new Bolted Wedge In-Line Disconnect Switch, combining an innovative bolted-wedge hybrid connector with industry standard components to bring the most reliable performance to switch/distribu-

tion line connections. The Bolted Wedge In-Line Switch features recognized and proven MindCore Technologies blade components, as well as Advanced Rubber Products Inc. insulators attached to a BURNDY-designed yoke plate assembly. It is ideal for use in gloving and hot stick applications when paired with an industry standard loadbreak tool.

The Bolted Wedge In-Line Switch utilizes dual insulators to minimize switch movement during opening and closing of the blade. Installation steps are kept to a minimum as the switch can be snapped

directly onto the line and secured with the BURNDY conductor pivot retainer. This retainer acts as a third hand to free up the line worker's hands to safely install the connectors.

The innovative BURNDY bolted wedge connectors utilize bolted technology to provide a highly reliable mechanical and electrical connection and combines it with sliding wedge technology to ensure the connection stays tight even if the line experiences high mechanical loads.

The hybrid design also takes some of the guess work out of tightening the hardware. Simply tighten the bolts near the recommended tightening torque and the hybrid system takes over.

In addition to improving the safety and reliability of the connection, the new Bolted Wedge Connector system also increases the range of conductors it accommodates. Two switches now accommodate conductors ranging from 1/0 ACSR up to

556.6 (26/7) ACSR. This increase in range taking ability reduces the number of different SKUs required by a utility for switching applications.

Headquartered in Manchester, New Hampshire BURNDY has over 90 years of dedicated customer support in both service and product. Our customers need to look no further than BURNDY for all their connector, tool, and accessory needs with our BURNDY Engineered Systems of coordinating dies, connectors and tools. The three elements have been specifically designed to work together and engineered to meet stringent, accepted quality standards – providing the user complete confidence in the integrity of the connection.

Contact us at 47 E. Industrial Park Drive, Manchester, New Hampshire, 03109, call Customer Service at 1-800-346-4175, or visit website www.BURNDY.com



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Cirris Introduces New Software Package, Power User

Cirris Systems presents an all-inclusive software package called Power User. Built for owners of the Cirris CH2, this package combines all extra features of easy-wire into a one-time purchase.

Through Cirris easy-wire Software, users define connectors, wires, cables, and other information necessary for testing. For more complicated testing, some users require extra features such as custom instructions, LUA scripting, and other add-ons. Rather than purchase each feature one at a time, customers can now acquire all easy-wire features at once.

Customers with Power User have access to all areas of easy-wire. Every feature is made available for the customer to utilize. Need custom scripts for specific tests? Want to automate the test process through Digital I/O? The features obtained through Power User give companies the ability to test with far greater efficiency and accuracy.

Customers who choose to purchase Power User also have access to certain future releases, such as custom scripts (Normally each script would have to be purchased individually). Customers with Power User can be sent the scripts without extra charge or hassle.

CH2 users who would like to learn more about Power User can visit

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NEWS PLUGS continued



Continued from page 52

Interstate Connecting Components, a Division of Heilind Mil-Aero, is Now Stocking TE Connectivity's Harsh Environment CII FC-325 Series Relays

Interstate Connecting Components, a division of Heilind Electronics and a leading distributor of harsh environment connectors and backshells worldwide, has added CII FC-325 Series relays from TE Connectivity (TE) -- a global leader in connectivity and sensors.

These non-latching relays are constructed with a double make/break contact design for added durability. Additionally, features like hermetic sealing, a corrosion-

protected metal can, and an all-welded enclosure make FC-325 Series relays more reliable than similar alternatives.

TE Connectivity CII FC-325 Series relays are qualified to MS27418 -- and at 25A, they accommodate higher current ratings than standard M83536 mid-range versions. FC-325 Series relays are ideal for applications like launch systems, power distribution, fuel pumps, navigation and weapon systems, aircraft cabins, and ground support equipment.

Founded in 1985, Interstate Connecting Components (<http://www.connecticc.com>) is an AS9100C-certified value-added distributor of the entire spectrum of electronic connectors, fiber optic connectors, backshells, tools, cable marking systems, and connector contacts. A division of Heilind Electronics, North America's largest interconnect distributor, ICC specializes in the military-aerospace market and offers T'DA® 2-day assembly on D38999, M28840, and many other mil-spec connector lines. Follow ICC on Facebook at [facebook.com/connecticc](https://www.facebook.com/connecticc) and on Twitter at twitter.com/connecticc.

Unidrive M Variable Speed Drives Eliminate Reliability Issues and Increases Speed Production by 300%

A leading coil processing equipment manufacturer has introduced variable speed drives from Control Techniques, an Emerson business.

Athader, based near San Sebastian in northern Spain, manufactures coil processing lines, mainly slitting lines and levelling and cut-to-length lines for steel, stainless steel and aluminium material.

Equipment manufactured by the company, which is part of the Bradbury Group, is destined for customers that include steel coil processors, rolling mills and profile and tube manufacturers, 80% of which are located outside of Spain.

Until recently, in order to match customer specifications, Athader used a number of different brands for its drive requirements. However, the company was becoming increasingly frustrated with reliability issues. When a coil processing line line experiences a breakdown situation, there is a high probability of production losses for the customer, as well as the potential to damage mechanical parts. As a result, Athader's preference is to use drives, motors and global solutions supplied by Emerson. According to the company, because a number of its machines are bespoke in line with specific customer needs, the adapted solutions provided by Emerson are fundamental to business success.

This is important considering the type of machines manufactured by Athader, such as steel winders/unwinders, stacking machines, rolling machines, longitudinal and transversal shears, packaging machines and cutting systems. With regard to the latter, a rotary shear device for high thickness coil is expected to work at 100 m/min, while a flying shear system for very high yield stress material (with a high pressure rating of 1100 Mpa) works at 50 m/min. Despite these elevated speeds, precision must be to within ± 0.2 mm.

Aside from the high performance and reliability of Unidrive M variable speed drives, Athader says that the products

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provide impressive speed and response, which in turn allows high dynamic application control with repeatable precision. The intelligent modules used with the drives permit the company to manage comprehensive programs requiring motion in several axes and profiles synchronised with high precision. This involves fast and accurate movements that serve to minimise the number of rejected items and maximise production uptime, all without inducing stress on the mechanical parts.

Athader favoured the straightforward integration capability of Unidrive M, thanks principally to a complete set of communication modules that support most traditional field buses and the latest Ethernet-based technologies. Among the recent applications at Athader was the development of a transversal cutting line for steel bands up to 25 mm thick and 1800 mm wide. The Emerson solution includes a control cabinet (8 x 800 x 2200 mm modules) and three control desks (entry, main and exit). The cabinet includes a total of 19 AC drives in a DC bus configuration that ensures stability and optimised energy consumption.

Moving through the cutting line in sequence, the uncoiler is served by a single Unidrive M701 (45 kW) featuring an Si-Application option module and dedicated unwinder software. From here, the unwound coil moves into two levellers, each of which relies on two Unidrive M700 units in parallel (180 and 160 kW respectively) with accompanying software. In addition, four Unidrive M200 drives (from 5.5 to 7.5 kW) are deployed for auxiliary elements. The next station, a flying shear, features one Unidrive M700 (110 kW) with Emerson's dedicated software, along with a single Unidrive M200 (5.5 kW) for the conveyor. In addition, a total of 10 Unidrive M200 drives (from 0.55 to 5.5 kW) control further parts of the system, such as inspection

and evacuation conveyors, stackers and stores. The cabinet also features two Emerson SPMC2402 DC rectifiers working in parallel.

The complete line is controlled by a Siemens PLC, while adjustment and supervision is made via a 15" colour touchscreen.

Two networking configurations are featured: Profinet connects the PLC with drives, encoders and remote I/O, while Ethernet allows the checking and changing of system parameters via a remote PC, including the parameters of the Emerson drives. This capa-

bility makes for easy fault-finding and element replacement.

Athader states that working with Emerson's solutions support has allowed the company to optimise its machine designs. For instance, production speeds have increased by more than 300%, from 200 to 600 m/min for longitudinal systems. In addition, the machines can now process a wider range of materials, from 12 mm band thickness (500 MPa) in the past, to the current 25 mm thick (1100 MPa).

As a result of this evolution, Athader's latest generation of machines offers a more intuitive environment for the operator. Furthermore, commissioning time has been reduced from 6 weeks to 3-4 weeks, while machine-side and remote control are better facilitated thanks to user-friendly software and Ethernet technologies.

Before commencing the project,

Athader sought a technological partner which would allow the company to progress its development efforts more quickly, which has certainly turned out to be the case. Aside from the high quality of its products and solutions, Athader was attracted to Emerson because of its expertise, proactive attitude, hands-on approach and open collaboration with its technicians.

Moving forward, Athader expects to introduce more products from the Emerson portfolio into its production, including high efficiency induction motors, high dynamic AC motors and geared motors.

For further information visit www.emersonindustrial.com/automation.

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Wardwell Harness Braiding Machine



The Wardwell Harness Braider is the ideal machine for over braiding on harnesses. It works equally well with wire materials or with textile and synthetic threads. The improvements to this type of standard machine include: a motor driven capstan take-up for accurate coverage of the harness, a new tubular frame, a self lubricating horn gear, a new operator station and sound reduction, among many others.

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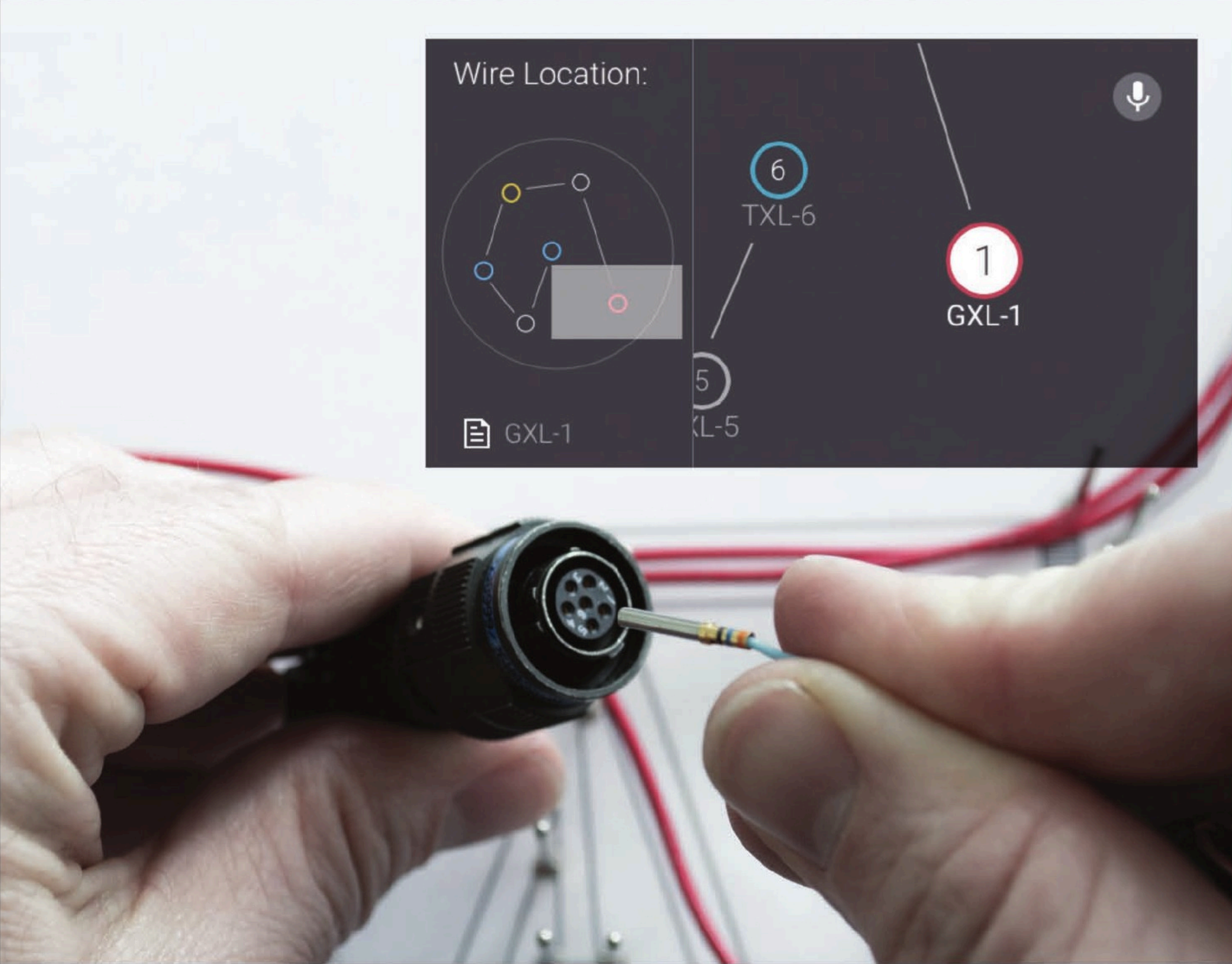
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<i>An-Mar Wiring Systems</i>	28	<i>FTZ Industries</i>	3	<i>OES Inc</i>	51
<i>Applitek Technologies Corp</i>	17	<i>Fuses Unlimited</i>	25	<i>Panduit</i>	23
<i>APX Labs</i>	56	<i>Gamma Electronics</i>	6	<i>Phoenix Contact</i>	39
<i>Artos Engineering Company</i>	2	<i>General Cable</i>	47	<i>Power & Signal Group</i>	20
<i>Atkins & Pearce</i>	30	<i>Hamilton Products, Inc</i>	54	<i>Pro-Line</i>	15
<i>Atlas</i>	43	<i>Henkel</i>	40	<i>Schaefer Megomat USA Inc</i>	36
<i>Cablescan</i>	49	<i>Heilind Electronics</i>	16, 28, 37, 38, 48, 50	<i>Schaefer Technologies LLC</i>	4
<i>CAMI Research, Inc</i>	13, 43	<i>HellermannTyton</i>	31	<i>Shawcor</i>	42
<i>Carpenter Mfg. Co., Inc.</i>	54	<i>Imada, Inc</i>	6	<i>Schleuniger Inc</i>	32-33
<i>Cembre Inc</i>	22	<i>Industrial Wire & Cable Corp</i>	47	<i>ShinMaywa</i>	7
<i>Chief Supply Inc</i>	16	<i>INSCO/Insulation Supply</i>	5, 6, 7, 8	<i>Spring Mills Manufacturing</i>	30
<i>Cirris Systems Corp</i>	63	<i>Judco Manufacturing Inc</i>	44-45	<i>Stamprite Machine</i>	26
<i>Coastel Cable Tools</i>	40	<i>Kingsley Machines</i>	21	<i>Stapla</i>	21
<i>Commission Brokers Inc</i>	18	<i>Komax Wire</i>	9, 64	<i>Strunk Connect</i>	26
<i>Composite & Wire Machinery, Inc</i>	3	<i>Lakes Precision Inc</i>	29	<i>Techflex</i>	20
<i>Connector Microtooling Systems Inc</i>	13	<i>LTL Tooling & Assembly</i>	18	<i>Telsonic Solutions</i>	35
<i>Daniels Manufacturing Corp</i>	53	<i>Mark-10</i>	11	<i>Tesa Tape</i>	52
<i>Dynalab Test Systems</i>	34	<i>Master Appliance Corp.</i>	47	<i>Thermosleeve</i>	10
<i>East Penn Manufacturing Co, Inc</i>	24	<i>Mecalbi</i>	51	<i>TLC Electronics</i>	29
<i>ECC</i>	37	<i>Mechtrix Corporation</i>	41	<i>Wardwell Braiding</i>	55
<i>EIC Wipers</i>	34	<i>Mello Company Inc., The</i>	3	<i>Waytek, Inc</i>	25
<i>Electrical Products Sales</i>	18	<i>Mentor Graphics</i>	46	<i>WHMA</i>	60
<i>Electrical Wire Processing Technology Expo</i>	61	<i>Micro Plastics</i>	19, 42	<i>Xuron</i>	20
<i>Eraser Company, The</i>	22	<i>Molex</i>	12		
<i>Etco Inc.</i>	14	<i>Multi/Cable Corp.</i>	50		

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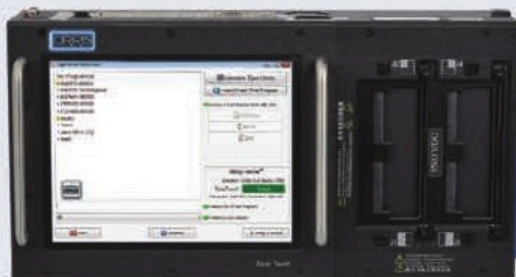
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