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WHMA 2016 Is In The Books!

By Joe Tito
Wiring Harness News

The Wiring Harness Manufacturers Association held its Annual Conference in sunny Arizona in February. It was another one for the record books as over 190 attendees enjoyed stimulating seminars and priceless networking opportunities at the Chaparral Resort in Scottsdale. There was a ten percent increase from the previous year's attendance, and it was the second year for double digit growth.

The WHMA board has become quite proficient in keeping the seminar content exciting, fresh, and relevant. This year was no exception with the Wednesday kickoff presentation by football legend, Rocky Bleier. Rocky was a starting running back for the iconic 1970's Pitts-

burgh Steelers, the greatest football team of the 20th century. He began his presentation by extolling the virtue of mutual commitment and trust in building a great team. Rocky outlined the attributes of a winning team as having a definable leader, with talented people and well communicated vision. But it's really the buy-in of that vision from each team member that provides the winning combination. The extent to which that vision can be simplified in a complicated world, will ultimately determine the success of a leader, Rocky asserted.

Finally, Rocky shared that 'courage to do the right thing' should be at the heart of every decision coaches and leaders make. Rocky Bleier's message of what it takes to make a leader, on and off the field, provided an awesome keynote, and was truly inspiring.

Rocky's take on leadership and vision sharing was the perfect segue for Greg



Top Drivers at the Octane Raceway indoor go cart track were 1st Place, Francois Cloutier, Docom Technologies, 2nd Place, Joey Camacho, Carlisle Interconnect and, 3rd Place, Hector Ramon, Electri-Cord Manufacturing.

Lane of Lean Enterprise, as he tackled Lean Leadership. Greg described leadership as a process. It's something that is not just obtained, but earned. He spent a great deal of time exploring the subject of Servant Leadership. Servant leaders exemplify the support role by making sure team members have the tools and training to obtain peak performance in their role. They listen and coach with empathy, while empowering the team to make critical decisions at the point where issues arise.

Greg noted the 1990's were the tools age of lean theory, and he thinks we are now in the leadership era of lean. In earlier generations of leadership, MBWA (Management By Walking Around) was an important credo. Managers were

encouraged to walk the production floor to get a feel for how things were running. Greg introduced the Japanese term Gemba where effective leaders see the process, and focus mostly on the problem areas and create a problem solving dialog with team members.

Greg Lane returned for the afternoon session on Wednesday to discuss Aligning Behaviors with Corporate Objectives. He began by suggesting that a common mistake companies make is setting too many objectives, and he instructs clients to come up with no more than five in a given year.

As far as aligning team member behaviors with corporate objectives,

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FreePoint/Fanshawe College Study: Effects of Information Feedback on Productivity

The following is an outline and summary of FreePoint's recent research project, in collaboration with Fanshawe College and funding assistance from OCE and NSERC. It highlights the importance of information feedback to manufacturing team members and, and how it can dramatically increase productivity:

Project #: 22501 "Deploying real-time data collection for measuring overall equipment efficiency (OEE) as a productivity tool in manufacturing"

Project Purpose:

To establish that measuring value adding activities empirically, establishing key performance indicators (KPIs) that

are meaningful and relevant to assemblers and operators, and sharing those KPIs with the assemblers and operators in real-time will have a significant and positive effect on productivity.

Background:

FreePoint Technologies was founded in 2013 by Randy Hess and Paul Hogendoorn - two seasoned entrepreneurs familiar with the needs and challenges facing manufacturing, and equally familiar with information technology available today.

In 2013, FreePoint acquired a root technology from St. Clair Technologies, a company that Randy co-owns and is a director of, and then further developed that technology into a product that had broad industry application. A provisional

patent was applied for in 2013 and is currently pending.

In 2013 and 2014, FreePoint deployed the resultant technology in several "early adopting" customers in order to prove out the basic value proposition - that an engaged workforce could be a more productive and happier work force.

Having established "anecdotal proof" with a small user group, FreePoint developed a cloud based SaaS offering, filed a second patent application, and concluded that an empirical study was needed to help the market accept FreePoint's paradigm challenging value proposition.

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International Harness Resources Inc., (IHR Inc.)
Wiring Harness News
P.O. Box 527,
Richmond, IL 60071 USA
<http://www.wiringharnessnews.com>
Office Hours:
7:00 a.m. - 3:30 p.m. CST - (Monday-Thursday)
Printed in the USA.

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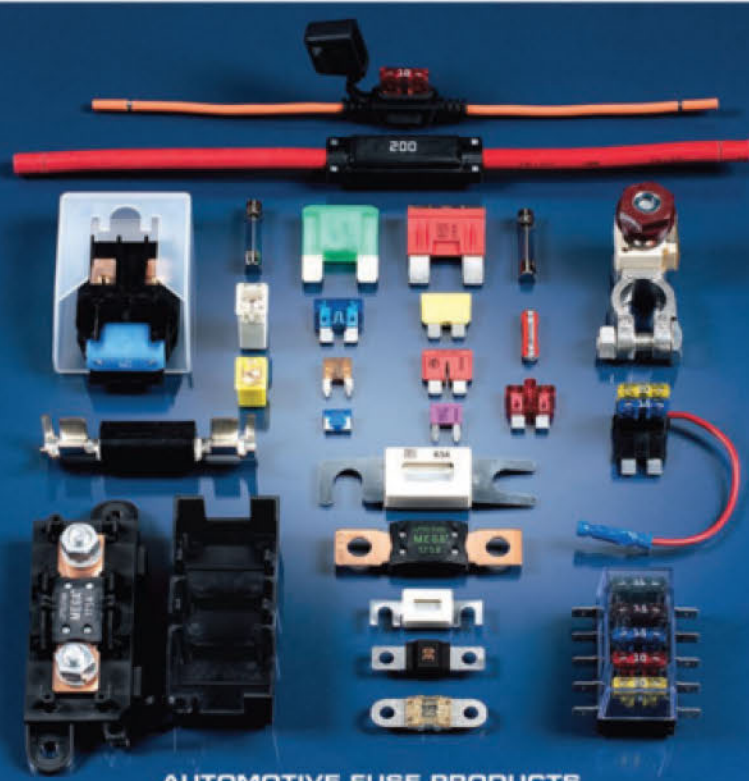
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“Definition of a ‘Bad’ Buyer”

Unfortunately, bad buyers do exist. But if we recognize the warning signs early on that we’re dealing with a potential buyer we should avoid, we can save ourselves a lot of grief. That’s why I am sharing one of the most unpleasant experiences of my career—with a buyer we’ll call ABC Co.

Quite a few years ago, I was involved in selling a very successful medium-size wire harness company, and my initial steps yielded a number of highly qualified buyers expressing a strong interest.

The next phase of the acquisition process is negotiating and signing a letter of intent (LOI). The LOI is essentially an offer to acquire a business entity subject to confirming that the basic facts presented about the company are true, thereby safeguarding against any surprises. In the LOI the potential buyer also specifies the price and terms of the purchase. What ABC put on the table beat out all other prospective buyers by a wide margin.

The due diligence process followed. Normally, the only reason this phase would yield a discovery justifying a modification of the price would be if a material fact such as a lawsuit or environmental violation were uncovered that was not apparent when the LOI was signed, but halfway through due diligence it started to become clear that ABC was a bad buyer. They spun a non-issue to make it seem a material discovery and then insisted on a price adjustment if



Loren M. Smith, CEO
Blue Valley Capital

they were to continue with the diligence process.

The seller now had a choice of accepting the price adjustment or going back to the marketplace and losing time. Reluctantly, the seller agreed to the price adjustment.

After the transaction closed, the buyer sent a letter to the seller indicating that they had made a post-transaction discovery they felt was material and unless the seller provided the buyer with a stated dollar amount they would take the issue to court. They claimed they had not been informed that a major

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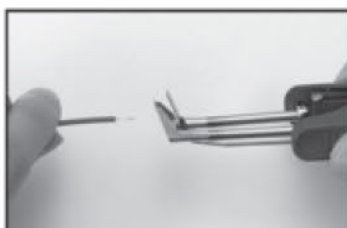
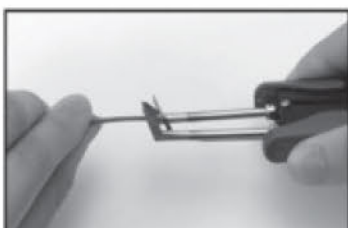
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"Definition of a 'Bad' Buyer"

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customer was pushing for a price reduction.

The claim was ludicrous because price pressure was a fact of life for the seller with nearly all of its customers, and it was an industry-wide phenomenon, deeply ingrained in the fabric of the industry. Believing the claim was a sham, therefore, the seller did not provide the buyer with the payment, but as a result wound up in court.

After the expenditure of significant legal funds, the seller was strongly advised by counsel to settle the case. Although there seemed to be clear evidence that the buyer's contrived issue had no merit, the unpredictability of a trial presented an unreasonable risk. This, of course, is why so many lawsuits are settled, and why this seller very unhappily complied.

In the end, with the due diligence price adjustment and the expense of settling the lawsuit, the seller received only what the other buyers had put on the table at the outset of the process.

Whether ABC Co. had plotted from the start to get two price reductions post-LOI, I will never know. A sizable firm with very deep pockets, ABC did nothing illegal, but they did grossly violate business ethics. They were a bad buyer.

Postscript

In the years since this troubling experience, I have developed a thorough vetting process that has enabled me to weed out buyers like ABC Co.

Loren Smith can be reached at lms@blv-capital.com or www.bluevalleycapital.com

WHMA 2016

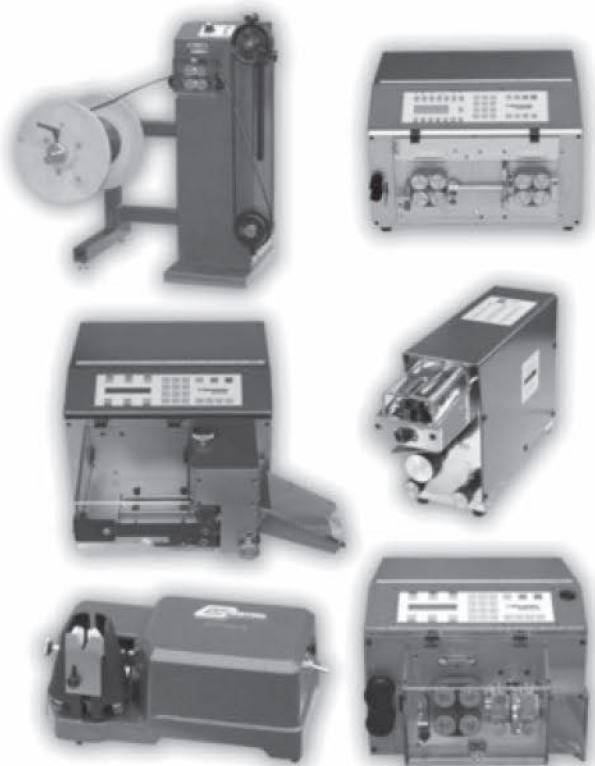
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Greg highlighted the need for leaders to maintain a constant dialog with the group while engaging in what he called Consequential Management. Under this system, leaders provide detailed feedback for both positive and negative behaviors. It serves to give team members informed choices, and clarify the consequences of their actions in relation to themselves, others, and to the organization as a whole.

Doug Donahue of The Entrada Group rounded out the day with an update on wire harness manufacturing in Mexico. Increased pressure from OEM's and Tier 1 suppliers for a reduction in costs and an enhancement of value-added processes, continues to push manufacturers to seek LCCs (Low Cost Countries) for manufacturing. With 44 trade agreements established throughout the world, Mexico is equipped better than ever to help meet these objectives.

While discussing some trends in Mexico,

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WHMA Conference attendees enjoyed an evening at the Octane Raceway indoor go cart track.

Doug touted human resource development in Mexico over the past several years. Mexican management is becoming more Mexican. He also mentioned the facilities themselves are becoming much more automated, and there is now much greater integration of the supply chain within Mexico. Suppliers have become more local, including capital machinery and component manufacturers.

Thursday morning's presentation was on Supply Chain Management, and the group was honored to have Dr. Thomas Choi of the W. P. Carey School of Business at Arizona State University. Dr. Choi discussed a newly coined type of critical supplier he calls the Nexus Supplier. The Nexus Supplier is a common denominator supplier and can exist at any tier. They are generally downstream, and unknown to the OEM. They supply a critical common denominator product that can threaten to shut down production

should there be a catastrophic event. As an example, he spoke of a resin manufacturer who was the sole common supplier to many dashboard manufacturers. None of the OEMs realized this common denominator existed in the supply chain. Dr. Choi advocated taking the BOM and building a supply tree back to raw materials. It's costly and time consuming, but it can help mitigate the risk of catastrophic production shutdowns.

The camaraderie created at the exhibits and networking events are a big part of the value proposition of a WHMA conference. This is exemplified at the round table discussions that capstone all WHMA events. Attendees were able to exchange ideas in sales and marketing, supply chain management, facility utilization and even successor manager and exit strategy planning.

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WHMA 2016

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Special note should be given to the sponsors of all of the events at the WHMA Conference. The Tuesday evening Exhibitor Reception was co-sponsored by Cirrus and Schleuniger. The Wednesday Breakfast With Exhibitors was sponsored by Daniels Manufacturing, and the Keynote Presentation was sponsored by *Wiring Harness News*. The Thursday Breakfast was sponsored by Southwire.

Special thanks should be given to IEWC

for sponsoring the Wednesday Evening Social Event. In the past, these events have been very enjoyable receptions at an elegant poolside or terrace setting. This year, the Social Event was held at Octane Raceway indoor go cart track. Attendees got to compete in several heats, with a final race for the top drivers. There was also an opportunity to participate in a mock NASCAR pit stop, and teams were able to compete there too. The food was great, the laughs were many, and thanks once again to IEWC for sponsoring the event.



WHMA Conference attendees were challenged in a mock Nascar Pit Stop.



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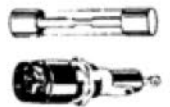
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FreePoint/Fanshawe College Study

Continued from page 1

Test Site Selection:

FreePoint looked at a wide number of local manufacturers that had an interest in the type of project that we were proposing. We concluded that we needed 2 different types of manufacturing companies involved: a steady state manufacturing operation, and a job shop manufacturing operation.

Job Shop Manufacturer: 'Company A' is a 40 year old London area company that employs 120 people. They are primarily a tool and die and solutions manufacturer for automotive customers. They have 20 machines that are critical to their manufacturing processes. Their business order book was consistently full so any productivity gains would result in direct bottom line gains. We selected 6 machines that represented a good mix of regularly operated machines for the test.

Steady State Manufacturer: 'Company B' is a 25 year old company that employs 60 people. They produce engineered textiles for various industries. They have been running at capacity, producing product 24 hours a day, 5 days a week, over 3 shifts. Approximately 40 machines are involved in the production, 30 of which are very similar in

function and operation. We selected one group of 7 machines - one row.

Establishing baselines and control conditions:

Company B had a lot of historic production information so we did not have to establish a "control" machine. Their key performance metric was the weight of the product shipped each day. Each roll of product has a specific weight and the production of each roll required a specific time on the machine. They know that their average "uptime" of the machines overall was 82%, and that this number has been consistent for years.

Company A did not have similar production information that could be tied back to machine run-time, and the jobs that need to be performed each day vary greatly. One of the 6 machines selected for the test would be "the control machine"; we would use this machine to give us a comparative baseline for the other 5 machines. Since the only thing we ultimately wanted to deduce was the effect of giving the operator meaningful performance feedback in real time, the control machine was equipped with a small computer and screen that only he could see. One operator, on one machine, would be working with real-time relevant feedback, and 5 wouldn't be.

Continued on page 20



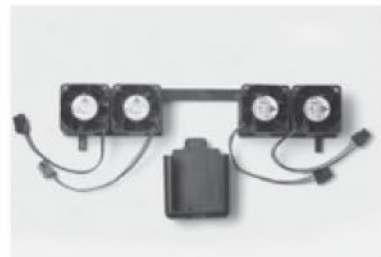
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1	28	28	16 mΩ	Pass	< 1 µA	1499 V	> 1 G	0.150 mA	996 V	7 M
2	30	30	32 mΩ	Pass	< 1 µA	1499 V	> 1 G	0.173 mA	996 V	6 M
3	32	32	63 mΩ	Pass	< 1 µA	1499 V	> 1 G	0.189 mA	996 V	5 M
4	34	34	125 mΩ	Pass	< 1 µA	1499 V	> 1 G	0.204 mA	996 V	5 M
5	36	36	249 mΩ	Pass	< 1 µA	1499 V	> 1 G	0.204 mA	996 V	5 M
6	38	38	500 mΩ	Pass	< 1 µA	1499 V	> 1 G	0.200 mA	995 V	5 M

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Getting to the Next Generation

By Paul Hogendoorn

Manufacturing in North America has fallen behind, and now many are paying for it. Yes we've invested in innovation, and yes we've invested in training, and yes we pay better than average wages. But still, we are struggling to fill our vacant jobs, and we struggle even more to attract and retain younger workers. We've let our on-floor factory jobs become stagnant, unexciting, unengaging and unattractive.

This hasn't just happened all of a sudden. It started a generation or two ago when we started teaching our kids that they wanted something other than a blue collar job. We told them to stay in

school to get a good career, like a teacher, a doctor, a lawyer, or anything in the information technology sector. That's what was going on outside of our plants that made new workers start to choose to stay away. What is going on inside our plants is making the problem worse - or perhaps it's more accurate to say it's what is not going on in our plants that is making the new workers stay away.

Our factory workplaces fail to recognize that times have indeed changed as far as the new working generation is concerned. Young people today aren't motivated simply by money; lifestyle and interaction with others are very important to them, as is feedback and the belief their input matters. They don't have the same delineation of life that previous generations may have had (i.e.

"working life", "family life", "social life"). They are not content to do something seemingly meaningless all day long just because it's their job. They have an insatiable need for feedback. They grew up playing games where measurement was constant and feedback was immediate. They don't want to wait until the end of the month, or even the week, to be told if they've done a good job or enough work. In most work places it's just assumed that a sufficient standard was met. That was enough for other generations, but it's not for the emerging generations.

The other part of the problem is what is happening (or not happening) outside of our factories. I'm not suggesting that the jobs we offer on the plant floor are meaningless and mundane, but we have

certainly allowed that perception to perpetuate, and we continue to do so.

This was the topic of a recent LRMC meeting, of which I am a member. (The London Region Manufacturing Council is a volunteer organization comprised of manufacturing company leaders in the region). It's been a topic many times before. For the last few years, the LRMC, in conjunction with the local EMC chapter, has arranged plant tour days for select area high schools, but this isn't enough. It's hard to get the high school age kids interested. Here again, the perception works against us.

To break that perception, we need to start even earlier - perhaps grade 7 or 8, or perhaps even earlier than that. A couple great ideas emerged from our conversations. One member's company has

sponsored local children's sports teams for years, with only one stipulation: all the players, along with their parents, must take an organized tour through the company to learn what the company did. Another idea was borrowed from the local home improvement big box outlet that I took my grandson to. Every month they host an event for children between ages 5 and 10 to hammer a few nails into some pre-cut pieces of wood. The kids leave with not only a neat thing they built for themselves, they leave with a sense of satisfaction that comes with working with hand tools - a simple thing almost entirely lost in recent generations. We can do the same thing as that retailing giant. Rather than shuffle high school age kids through our factories, overwhelming them with our big machines and complicated processes, we should make simpler, more satisfying opportunities available to "stick two pieces of metal together" (welding), stamp something out (a keepsake), bend something, or push a button and watch something small get machined or cut out before their eyes that they can take home with them. There's a lot more pizzazz and wonder going on, on our plant floors, that we need to share with the younger people - and I mean the really younger people. By the time they get to high school, it could be too late to change the perception.

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



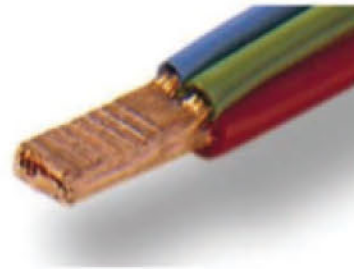
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NEWS PLUGS



Heilind Adds M-SERIES Ruggedized Connector Line from NorComp

Heilind Electronics, a leading global distributor of electronic components, has just added NorComp's M-SERIES metal shell connectors to its existing selection of harsh environment circular connectors.

M-SERIES Circular Connectors are designed with a robust, waterproof



NorComp's M-SERIES Metal Shell Connectors

cable-to-panel interface for demanding end use applications. These ruggedized connectors feature full metal shells for EMI/RFI shielding, as well as IP67/68 performance in both mated and unmated conditions.

Available in three sizes (12mm, 8mm, AND 5mm), the M-SERIES offers pin counts ranging from 2 to 8 positions. Additionally, the M12 and M8 models conform to industry standard bus specifications and are intermatable with a variety of competitive products.

Because they are more compact than rectangular connectors, M-SERIES connectors enable efficient use of mounting connectivity space for multiple design applications. Ideal for military, industrial, and measuring equipment; industrial sensors and machines; computers and peripherals; and audio and video apparatus.

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.

Visit Heilind's website for more information about NorComp M-SERIES Metal Shell Circular Connectors.

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“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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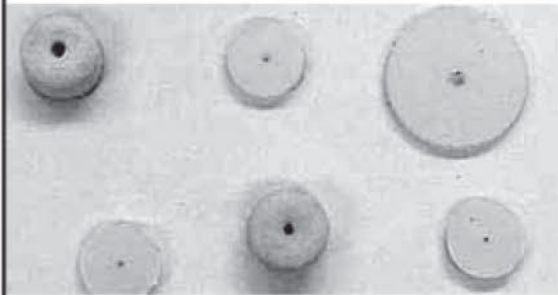
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NEWS PLUGS continued



CableEye® 2100Vdc Screw Terminal Connector Board, CB29H

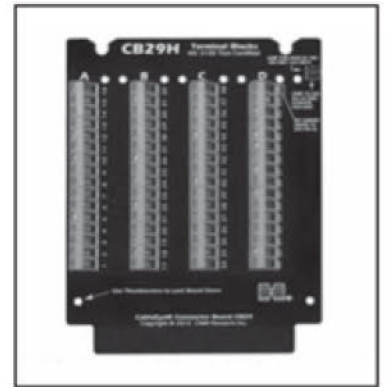
CAMI Research Inc. (Acton, MA) announces another new board for its CableEye cable and harness testing systems. Populated with four 16-pole screw terminal blocks, the board addresses high voltage (HiPot) testing to 2100Vdc/1200Vac. Of particular interest to the harness testing market, the CB29H is also available as a transition board variant (CB29AH).

A leader in development of PC-based Cable & Wire Harness Test Systems for over 20 years, CAMI offers the CableEye suite of Low and High Voltage products complete with

accessories including connector boards. The selection of boards is constantly growing and is currently numbering over 60 – most of which are populated with ‘families’ of connectors. These connectors are shown graphically correct with CableEye’s standard dynamic user interface.

The CB29H and CB29AH boards are high voltage versions of the CB29 with the high voltage traces running on inner layers to afford additional safety, and protection from contamination. Each contains four 16-pole screw terminal blocks that will accept bare wires from 12- to 30-gauge in size.

The metal jaws firmly grip an inserted wire without damaging or distorting the end, and the space between each terminal block may be used as a wire channel to guide wires neatly to the side. For each



CableEye® 2100Vdc Screw Terminal Connector Board

channel, a pair of holes is provided through which wire ties may be inserted to hold the wire bundles in place.

The CB29AH serves as a transition board between wire harness mating connectors and the CableEye tester and is intended for use with an AMP-

MODU discrete wire extension cable. The board is mounted on or under a harness board loom, and may be stacked for greater capacity.

Sold as a set of two boards, each test board may be paired with other CableEye adapter boards to accommodate any combination of connectors.

A bare board option, CB29HB, is also available if you wish to add your own terminal blocks or use, for example, as an adapter cable interface.

The board footprint includes hole patterns for both 5mm (0.197") hole spacing for each of the four rows, so any type of terminal block with this spacing can be accommodated.

Customers requiring this board typically have products that are being HiPot tested above 1500Vdc, and include those prototyping and manufacturing harnesses.

Connector boards are included in CableEye’s standard, renewable one-year warranty of the tester for which it was purchased.

Contact sales@camiresearch.com or (978) 266-2655 for a quote.

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 properties such as continuity, resistance, dielectric breakdown, insulation resistance, miswires, and intermittent defects. camiresearch.com

CERTI-CRIMP HAND TOOLS

TE Connectivity’s (TE) CERTI-CRIMP hand tools are premium, hand-operated tools for crimping a broad array of terminals, contacts, and special wiring devices from TE. These are designed to exacting specifications for consistent, high-quality terminations. There are currently seven basic styles of CERTI-CRIMP hand tools. The choice depends on the product being applied.

Other options include insulation crimp adjustment for different insulation thicknesses, a locator for proper positioning and supporting the terminal or contact in the tool, a wire stop, and color coding and/or wire size information on the head of the tool or on the handles.

All CERTI-CRIMP hand tools feature a reliable ratchet control. The ratchet will not release until the handles are fully closed and the dies bottomed. This helps eliminate partial crimps.

Features:

- Ability to be recalibrated and/or repaired
- Designed to exacting specifications
- Ergonomic handles on most models
- Ratchet control system to help eliminate partial crimps

Applications:

- For most military, UL and CSA applications
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- Field repair
- Low production runs



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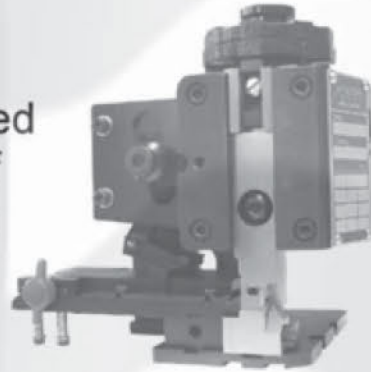


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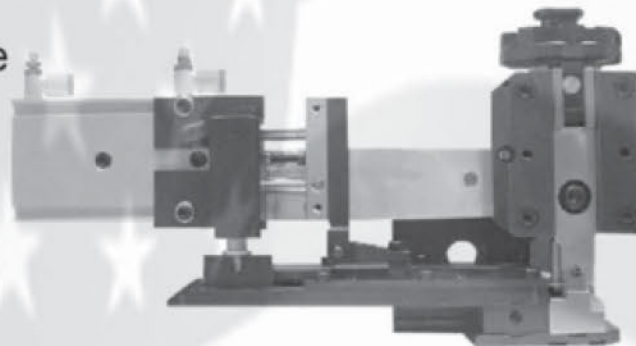


Model 1700

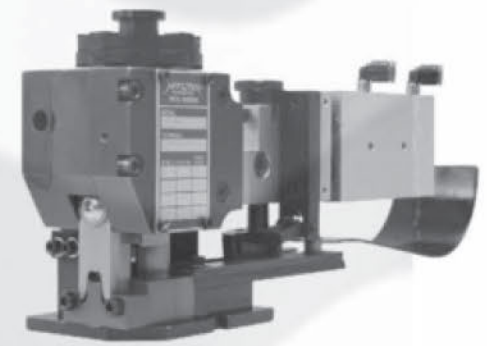


Model 2000

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

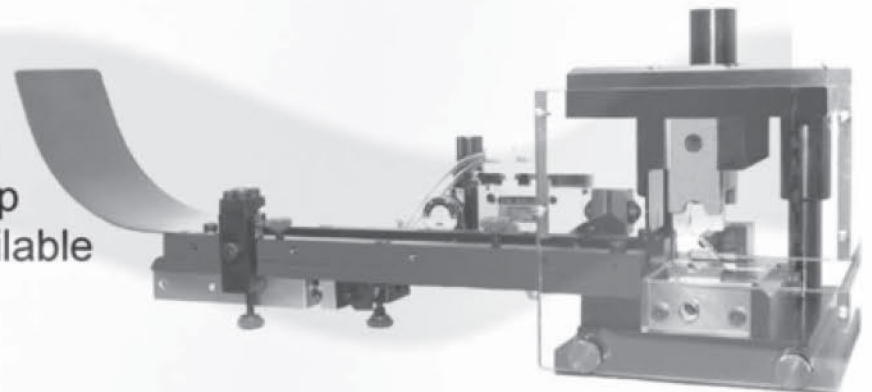


Model 1500



Model 2100

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



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NEWS PLUGS *continued*



Molex Introduces SST™ PB3-CPX Modules

Molex has introduced its SST™ PB3-CPX Modules to connect Rockwell Automation CompactLogix L2, L3 and L4 controllers to PROFIBUS DP-V0 and DP-V1 Networks. The modules enable high-performance, low-cost solutions for industrial automation applications and are compatible with Master DP-V0 Class-1; Master DP-V1 Class-1 and Class-2; and Slave DP-V0 protocols.

"Molex is focused on developing effective industrial solutions for our customers," said Ken Prentice, product specialist, Molex. "Our growing offering of flexible, easy-to-configure SST™ PROFIBUS module solutions

demonstrates the commitment of Molex to providing highly capable yet cost-effective industrial automation solutions."

SST™ PB3-CPX Master/Slave Modules can be configured as PROFIBUS Master, Slave or Master/Slave, delivering a flexible design that reduces inventory and spares. The modules are easy to spec in and offer up to 1,984 input bytes and 1,968 output bytes per master, making them suitable for large PROFIBUS networks.

All three variants accommodate low-cost Ethernet cable and feature a 10/100 Mb Ethernet port that enables fast downloads as well as remote connections and monitoring. The modules provide backplane or front-module configuration options. A MicroSD card slot — with an 8 GB MicroSD card included — facilitates easy module swap-out. Offering a mean time between failure (MTBF) of 181 years, the modules provide reli-



SST™ PB3-CPX Modules

able, trouble-free usage. SST PROFIBUS modules feature 1,000V electrical isolation between ports, ensuring a robust, reliable network with high immunity to electrical noise. The modules are appropriate in applications that include material handling, packaging, agro-food, mining, and water/wastewater.

SST™ PB3M-CPX Master Modules feature software configured as PROFIBUS Master, which delivers a flexible design. The master module supports 1,984 input bytes and 1,968 output bytes.

SST™ PB3S-CPX Slave Modules feature up to 244 input bytes and 244 output bytes per slave, delivering high data throughput. Software configured as slave requires no ladder logic.

For more information about SST communications modules, visit www.molex.com/link/sst-communicationmodules.html.

APPLICATORS / CRIMPING PRESSES / TOOLING



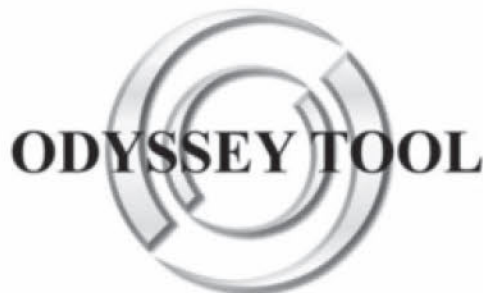
Mini
Left to Right



Mini (2 Post) Air
Left to Right



Heavy Duty Slide
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Mini
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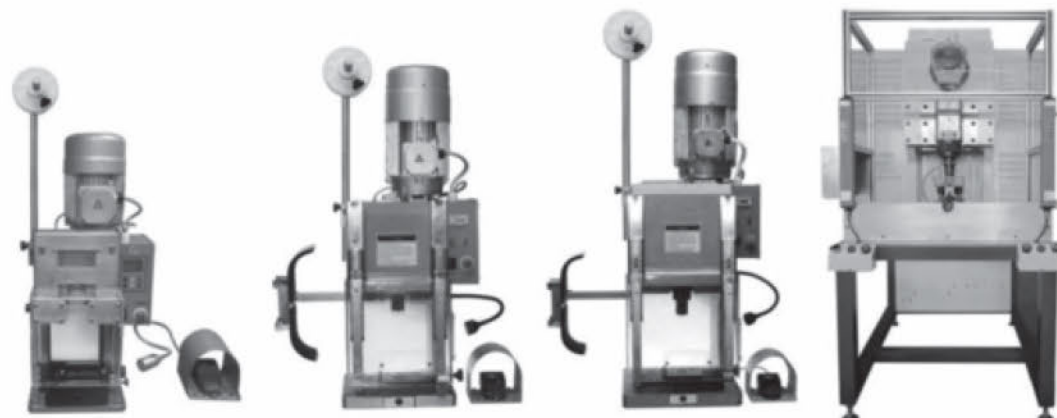


Med. Duty Air
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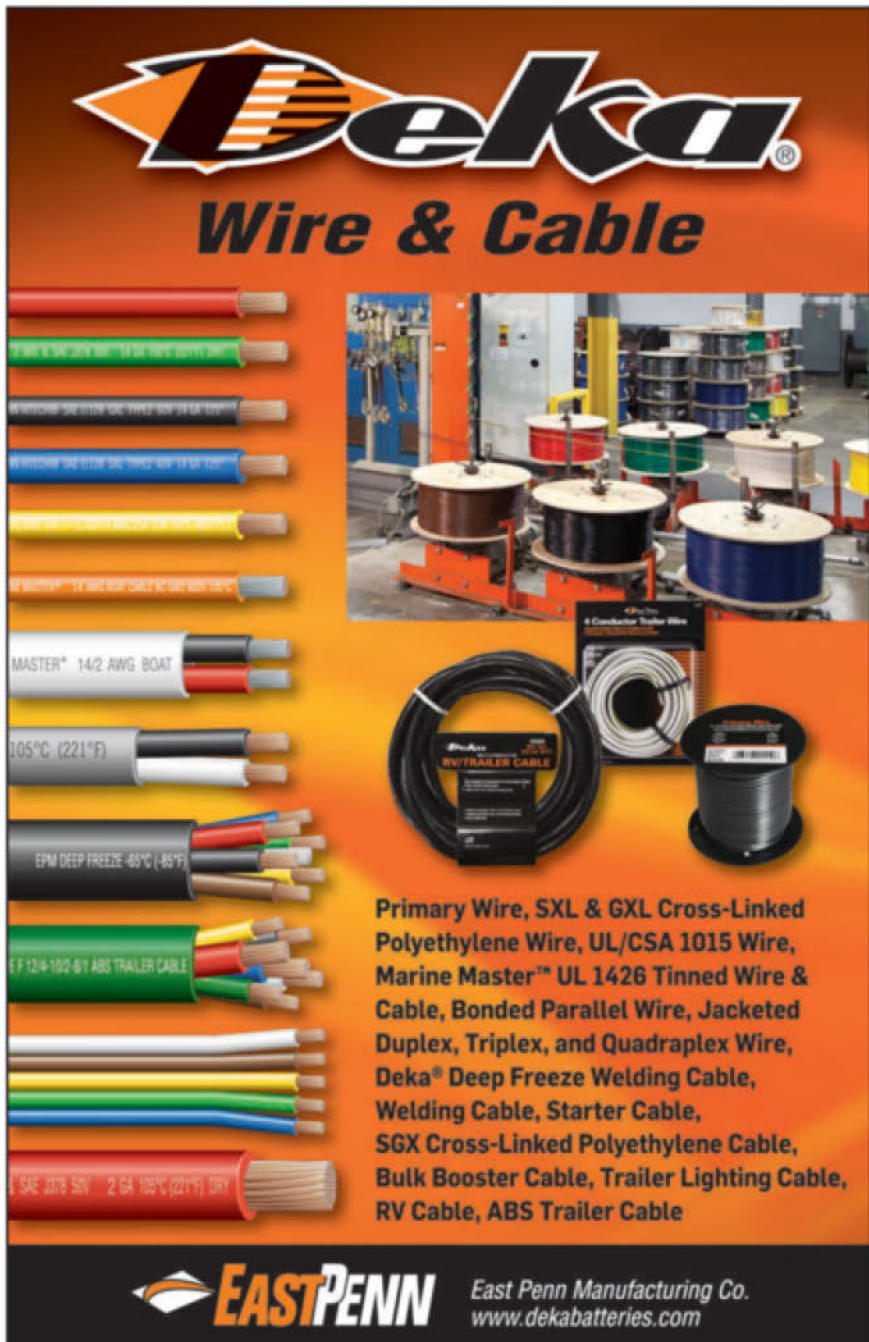
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FreePoint/Fanshawe College Study

Continued from page 11

Company A would clearly provide the biggest challenge. It would require a far longer recording period to establish a reliable pre-deployment baseline. Fortunately, we have had several job shop companies to choose from where we had been collecting basic baseline data.

Equipment and Software involved:

FreePoint installed their FPT 4i remote monitoring unit on each machine in the study at both companies. The FPT 4i is a simple "black box" that has 4 digital inputs and communicates wirelessly with an FPT MS1 master communication device. The MS1 is connected to a simple PC, which runs a small data aggregation program called CellMonitor.

The entire installation was "non-invasive", meaning that none of the machines, the controls, or the programs needed to be modified in anyway. FreePoint uses their patent pending technology to connect to the machine simply. Similarly, by using wireless communications to the data aggregator, the installations were performed very quickly and non-disruptively.

Summary of equipment for first stage:

FPT 4i remote units mounted on machines in the test, using FreePoint's non-invasive connections to the machine, and wireless communications to the data aggregator.

FPT MS1 master communication unit to communicate wirelessly with each FPT 4i unit, and transfer the reported information to a PC through USB.

CellMonitor is FreePoint's proprietary software that manages the wireless network and sorts and stores all the events reported by the FPT 4i remote units. The information is all stored in CSV files sorted by machine, and date and time stamped and stored in chronological order.

FP Secure is FreePoint's proprietary software that then pushes the data on the PC to a remote server (our 'Shift-Worx' platform) in the cloud. This stage was not absolutely necessary, but having access to all the data remotely and on one server facilitated our analysis. Plus, it added one more level of data redundancy.

Data Redundancy:

The FreePoint system provides several levels of redundancy. The FPT 4i boxes each store their own timer and counter functions. If communication is lost for several seconds, or even minutes or hours, the data aggregator is instantly updated with timer and counter information as soon as the connection is restored. (The time stamped information is lost, but the accumulated timers and counters are not). If the data aggregator

Continued on page 23



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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:

- | | |
|-----------------------------------------------|------------------------------------------|
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| • Heavy Duty Benchtop Wire Stripping Machines | • Terminal Paper Winding Machines |
| • Automatic Center Stripping Machines | • Terminal Applicators |



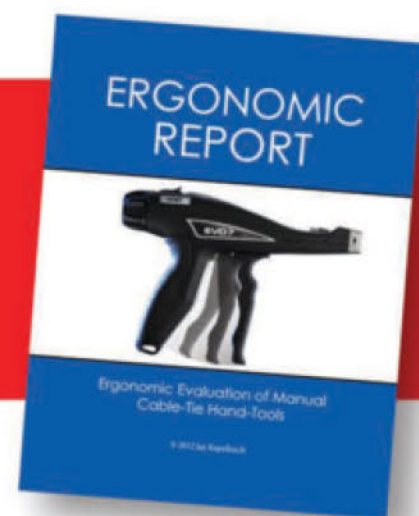
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EVO 7

Study participants rated the EVO 7:

- Best in overall comfort
- Best in overall ease of tension setting
- Best in overall ease of use
- Overall, the most preferred cable tie tool

FreePoint/Fanshawe College Study

Continued from page 20

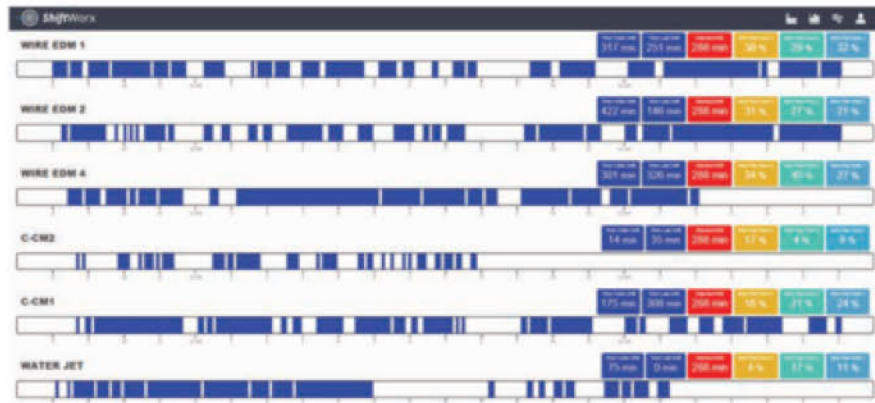


Fig 1

(CellMonitor) loses connection with the remote server (ShiftWorx), even for multiple days, all the information is filled in and synchronized when the connection is restored.

Our Process:

Our process was simple. At each customer, we would collect data for a sufficient period of time, analyze the data, determine basic KPIs and then build rudimentary display templates to display them. At a selected point, LCD screens would be installed on the plant floor where the operators could see them, and we would then continue to monitor the machines exactly the same way we did before the LCD screens were deployed.

As a side note, the process we followed lines up well with FreePoint's overall product marketing approach -

"measure, analyze, share". For the study, we did it as 3 distinct steps over a long period of time. What we encourage manufacturers to do, and what we started doing at the time the screens were deployed, is closing this loop on the plant floor in real-time, every day (Fig 1).

Figure 2 - page 24 - shows an example of the feedback we gave the operators. Each horizontal bar represents a 24 hour period of time for a particular machine. The right most side is the current time and the left most is 24 hours ago. The blue periods are the periods of time where "value adding activities" were occurring on the machine. The white represents periods of time where no value adding activity was occurring.

Continued on page 24



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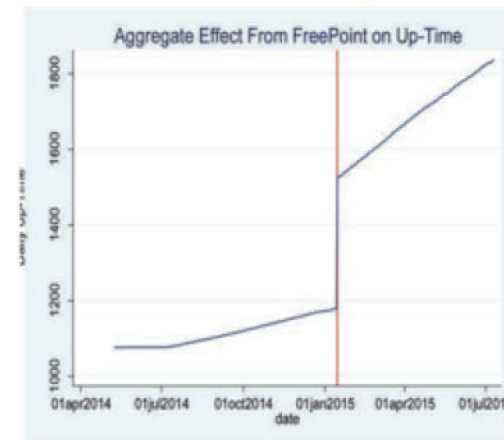


FEINMETALL
 Contact Technologies

FreePoint/Fanshawe College Study

Continued from page 24

Results – job shop operations



Overall: + 32 %
Mean shift: + 5:41 hours
Slope shift: + 1.6 mins/day

Only looking at the trend change...

Daily 1.6 mins
Weekly 8 mins
Monthly 32 mins
Annually 6:24 hours

Fig 2

In the case of an EDM machine, value adding activity was determined to be any time the electrode wire was feeding. For the CNC machines, it is any time the spindle is under load. For the water jet, it would be any time it is actually cutting.

The boxes on the right are numeric KPI (key performance indicators) that can be easily changed and modified to suit the preference of the people involved. The goal was to give them indications of performance that is meaningful to them.

(Many of the features described in general herein are the protected proprietary property of FreePoint Technologies.)

After deployment of the screens, we collected data to compare the results. We also engaged with the operators and supervisors and modified the KPI boxes to suit. We never changed our "blue line" approach, as very early on we noticed a strong focus simply on "keeping the bar blue". The more the bar was blue, the better the results would be.

The Results:

Company A (the job shop) achieved outstanding results, increasing their "spindle under load time" (which we refer to as "value adding activity time") by 32%, gaining a total of 6 additional hours and 24 minutes of productivity each day for the 5 machines we studied.



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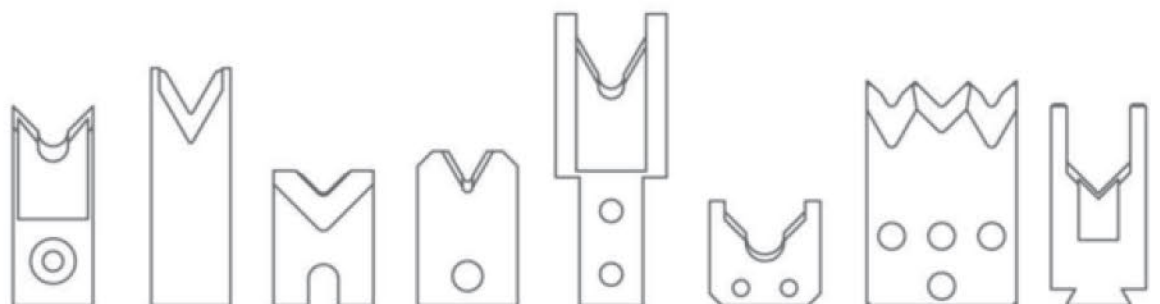




Fig 3

Company B (the steady state manufacturer) improved from 81.8% average uptime to 86% average uptime - a very significant improvement as well. Based on 7200 production minutes available in a standard 5 day week, it results in an extra 300 minutes of winding time per week, per machine, which is roughly 2/3 of a complete shift.

Our Conclusion:

Our conclusion is that by engaging the "value adding people" (the people that run the machines and add value to the product through their direct activities) with meaningful and relevant productivity indicators in real-time will, and does, result in sustained productivity improvement.

Many companies measure their machine utilization and have plenty of information for management purposes. FreePoint's position was that there is an opportunity to improve productivity by better engaging the worker with information more meaningful to them. It's not about more information - its about more meaningful information to more of the people, in real-time.

Net Total Effect

The overall immediate gain achieved from the 5 machines was 5 hours and 41 minutes of extra productivity time each day, or over an additional hour and 8 minutes for each machine. Post deployment, the productivity gains were not only sustained, they continued to improve an average of 1.6 minutes per pay. At the conclusion of the study, the total gain for the 5 machines had grown to 6 hours and 24

minutes, which represents a total productivity improvement for the 5 machines of 32% (Fig. 3).

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NEWS PLUGS continued



Fourstar Connections Partners with XL Hybrids on Design for Manufacturing (DFM) Initiative

Fourstar Connections recently entered a collaborative partnership with XL Hybrids of Boston on a design for manufacturing (DFM) initiative. Fourstar Connections, a Hudson-based contract manufacturer to original equipment manufacturers (OEMs), helped build connecting assemblies for an automotive aftermarket hybrid-electric conversion kit. XL Hybrids uses energy storage solutions in its aftermarket hybrid-electric conversion kits for the automotive industry. This converts gasoline-dependent vehicles to hybrid gas/electric vehicles. XL Hybrids system improves the gas mileage for large fleets, and it also saves on vehicle brake maintenance costs because of its regenerative braking technology.

With its expanded in-house cable assembly capabilities, Fourstar Connections was able to reengineer the product design, acquire the specialized tooling to configure the connecting assemblies correctly, and complete the kits—at a lower cost and with significantly shorter lead

time.

Phil Holman, President of Fourstar Connections, said, "Fourstar Connections is well-positioned to serve as an innovative supplier of DFM solutions to mission-critical connectivity challenges. Our initial engagement with XL Hybrids was to help them switch their cable source for both its HVAC and HVDC assemblies from a single vendor in Europe to multi-vendor source, that offered equal performance, lower cost, and supply chain flexibility to support its production spikes and order fulfillment. The engagement evolved from new product sourcing to providing DFM recommendations. We offered a full-turnkey solution, using the new cable source and in-house TE tooling to support the manufacturability of its HVDC assembly for new end-applications and configurations. XL Hybrids was able to simplify the product design and reduce the time to market for its hybrid-electric conversion kits. This aligns perfectly with our strength of being a solutions-driven partner to diversified industries."

Fourstar Connections, Inc. is an established company with an entrepreneurial spirit—having more than 25 years of experience, and offering a comprehensive portfolio of services and solutions to tackle a wide

range of manufacturing needs. Fourstar Connections partners with leading companies to problem solve, innovate, and find better ways for new product introduction (NPI), and create design for manufacturing (DFM) initiatives. Its project management, manufacturing expertise, exceptional customer support, and advanced IT systems enable it to provide a comprehensive range of products and solutions—from cable assemblies to complex box build solutions—and quickly ramp up to meet target dates and volume requirements.

Custom built or customer specified, its flexible and scalable manufacturing services can be tailored to meet production needs—from high-mix, low-volume, to low-cost regions. Through Fourstar's strategic value-added reseller (VAR) relationships, it delivers functionality and value across the supply chain to improve efficiency, reduce costs, and enhance quality. Fourstar's 28,000-square-foot corporate headquarters and state-of-the-art manufacturing facility is located in Hudson, MA, with affiliate manufacturing facilities in Mexico and China. For more information on Fourstar Connections and its contract manufacturing capabilities, visit <http://www.fourstarconnections.com>.

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NEWS PLUGS continued
**Thermosleeve Welcomes
 Johnson Yan as Newest Member
 of Thermosleeve-USA Sales**

We are pleased to welcome Johnson Yan as the newest member of the Thermosleeve-USA sales force! Johnson has been instrumental in our company's growth for the past three consecutive years states David Levy, National Accounts Manager for the company. Previously working behind the scenes providing his expertise in this specialty field, Johnson's new responsibility will focus on supporting our outside sales representatives by providing product training and technical support to our key accounts and national distributors.

**Johnson Yan**

Johnson's hard work over the past three years makes him a natural choice to assume his new role at the company and we are lucky to have such a knowledgeable and dedicated employee overseeing this part of our business.

For more information regarding Thermosleeve-USA or any of its products, please contact our product specialist Johnson Yan at johnson@thermosleeve-usa.com

Newark element14 Adds Passives from TE Connectivity, Ohmite, Bourns and Vishay to Product Portfolio

Newark element14 has expanded its product portfolio of passive components from industry-leading suppliers TE Connectivity, Ohmite, Bourns and Vishay. The new ranges include TE Corcom power line filters, Ohmite/Arcol HS aluminium-housed resistors, Bourns' gas discharge tubes and Vishay high voltage flat chip resistors. The products are ideal for applications within the industrial, telecommunications and test equipment markets.

"Newark element14 understands innovation relies upon the latest products and a short time to market, therefore we are constantly working to both expand our inventory and ensure this is all available for rapid delivery," said Jesper Rasmussen, Global Category Director Passives, element14. "Partnering with industry-leading suppliers means that we can offer the latest passive products and solutions for industrial, telecommunications and instrumentation applications, where stability and accuracy are critical."

The latest passive components in the Newark element14 range, available at <http://www.newark.com/passive-components>, deliver:

- Unrivalled accuracy at high voltages
- Superior EMI protection over high frequencies
- Heat dissipation and thermal resistance for maximum performance
- Excellent stability over lifetime

The Corcom power line filters and EJT series IEC inlet filters (with IEC320-C14 inlet) from TE Connectivity offer high frequency performance of up to 1GHz and are suited for use in medical, test and communication equipment.

Meanwhile, the Arcol/Ohmite HS150 series aluminum-housed resistors are manufactured to MIL 18546 and IEC 115 requirements. They are wire wound

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.

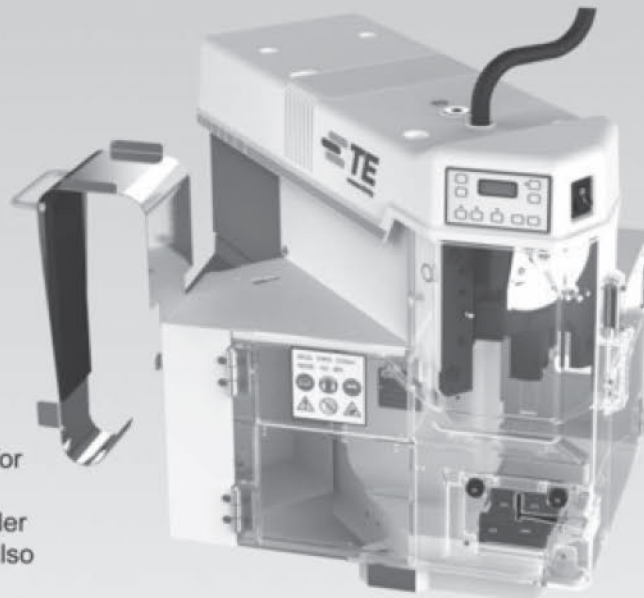
The Model G II terminator is one of the quietest machines available and the improved guarding meets applicable CE and domestic safety requirements. The improved guarding also creates open access for quick and smooth installation of both end-feed and side-feed applicator styles.

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



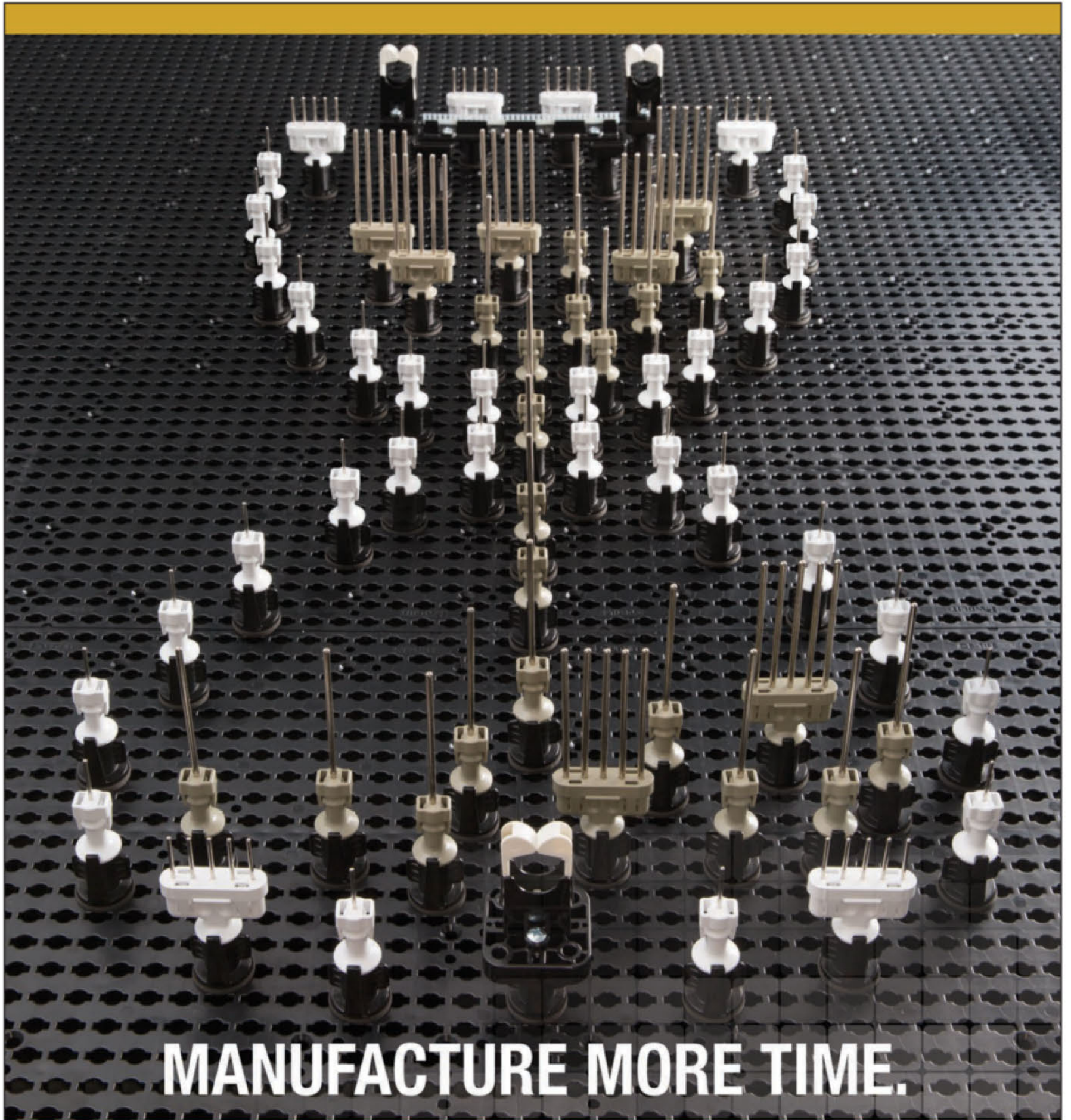
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Continued on page 34



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COPPER VS. ALUMINUM CONDUCTORS

Conductors consist of materials that conduct electric current, or the flow of electrons. Nonmagnetic metals are typically considered to be ideal conductors of electricity. The wire and cable industry uses a variety of metal conductors, but the two most common are copper and aluminum. Conductors have different properties such as conductivity, tensile strength, weight and environmental exposure.

COPPER CONDUCTORS

Copper is one of the oldest known materials. Its ductility and electrical conductivity were exploited by the early experimenters with electricity, such as Ben Franklin and Michael Faraday. Copper was the conductor used in inventions such as the telegraph, telephone and electric motor.

With the exception of silver, copper is the most common conductive metal and has become the international standard. The International Annealed Copper Standard (IACS) was adopted in 1913 to compare the conductivity of other metals to copper. According to this standard, commercially pure annealed copper has a conductivity of 100 percent IACS.

Commercially pure copper produced today may have higher IACS conductivity values as processing technology has improved over time.

In addition to copper's superior conductivity, the metal contains great tensile strength, thermal conductivity and thermal expansion properties. Annealed copper wire used for electrical purposes meets the requirements of ASTM B3, Specification for Soft or Annealed Copper Wire.

ALUMINUM CONDUCTORS

Even though copper has a long history as the material of choice for conducting electricity, aluminum has certain advantages that make it attractive for specific applications.

Aluminum has 61 percent of the conductivity of copper, but has only 30 percent of the weight of copper. That means that a bare wire of aluminum weighs half as much as a bare wire of copper that has the same electrical resistance. Aluminum is generally more inexpensive when compared to copper conductors.

Aluminum conductors consist of different alloys known as the AA-1350 series and AA-8000 series. AA-1350 has a minimum aluminum content of 99.5

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percent. In the 1960s and 1970s, due to the high price of copper relative to aluminum, this grade of aluminum began to be popularly used for household wiring. Due to low-quality workmanship at connections and the physical differences between aluminum and copper, high-resistance connections formed and became a fire hazard.

As a response, aluminum alloys were developed to have creep and elongation properties more similar to copper. These AA-8000 series alloys are the only solid or stranded aluminum conductors permitted to be used according to Article 310 of the 2014 National Electric Code*. AA-8000 series alloys meet the requirements of ASTM B800, Standard Specification for 8000 Series Aluminum Alloy Wire for Electrical Purposes-Annealed and Intermediate Tempers.

COMPARISON

If aluminum is used in an application where copper was previously used, it is typically sufficient to use an aluminum conductor two AWG sizes larger than that of copper. A comparison between aluminum and copper for the same application is listed below.

APPLICATIONS

Copper is much more commonly used for building wire than aluminum. Nearly all electronic cables are made from copper, as are other products that take advantage of the high conductivity of copper. Copper conductors are also commonly used in power distribution, power generation and automotive applications.

For the weight and cost savings, electrical utilities use aluminum for overhead transmission lines. Aluminum also sees usage where its low-weight properties are important, such as aircraft and future applications in automobiles. For large coaxial cables, copper-clad aluminum wire can be used to take advantage of the conductivity of copper while gaining the weight savings of aluminum.

CONNECTORS

Connectors must be rated for use with aluminum. Connections rated for use with aluminum are frequently also able to be used with copper and are marked as so, such as AL7CU, a connector suitable for use with copper or aluminum conductors at 75°C. In applications where connections need to be soldered, copper or tinned copper is preferred, as aluminum is difficult to solder.

*2014 NEC 310.106(B)

Comparison of XHHW-2 properties	AA-8000 series aluminum	Copper
AWG size for 60 A at 75°C	6	8
Weight per 1,000 ft.	39 lb.	65 lb.
Nominal diameter	0.26 in.	0.23 in.
Maximum pulling tension	157 lb.	132 lb.

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ROLLY2000 is designed for high speed volume printing of cable markers & adhesive labels in roll format. Thermal transfer print quality matched with robust construction and intensive Cembre reliability allow ROLLY2000 to print 1000 cable tags in less than two minutes. ROLLY2000TR1 is designed to print TERMO-ROLL heat shrinkable tubing in continuous or ladder format at high speed with precision and quality print to meet the most stringent standards. ROLLY2000TR2 is designed for double sided printing of TERMO-ROLL heat shrinkable tubing for high level applications where dual sided marking is an essential specification.

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Raritan Center Business Park
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Tel. (732) 225-7415 - sales.us@cembreinc.com

www.cembreinc.com



NEW EcoStrip 9380

Welcome to the Future of Entry Level Cut & Strip

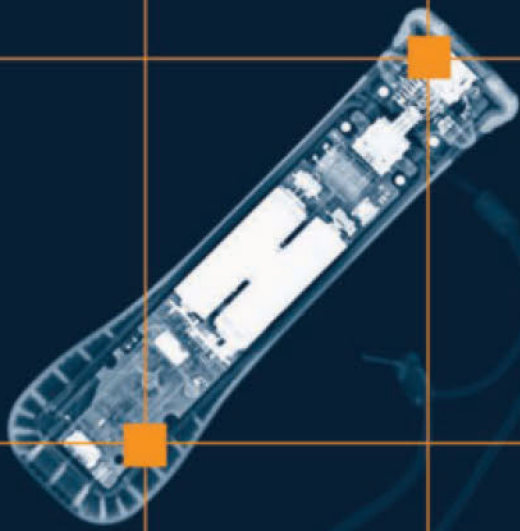
The EcoStrip 9380 offers the most complete feature set at an economical price point. This flexible machine can be configured with rollers or belt feeding unit capable of short mode processing and is easily operated via the 5.7" color touchscreen and underlying Schleuniger S.ON software. Turn the EcoStrip 9380 into a fully automatic processing line with a wide range of accessories for prefeeding, marking, stacking, coiling and tying.

schleuniger-na.com/es9380_whn



"The displays and software are similar from machine to machine. This makes integrating a new piece of equipment into production a smooth transition."
JR Palumbo, Owner, Royce Electronic Sales

To Be Precise.



joy ride

NEW UniStrip 2050 Benchtop Stripping Unit

The UniStrip 2050 combines convenience and quality at a very competitive price. It's a simple, low-cost pneumatic stripping unit for processing cables up to 15 mm (0.59") in diameter and wires up to 70 mm² (2/0 AWG). The powerful, robust design of the UniStrip 2050 makes it suitable for a wide range of applications, while its simple operation makes it ideal for a variety of production environments.

schleuniger-na.com/us2050_whn

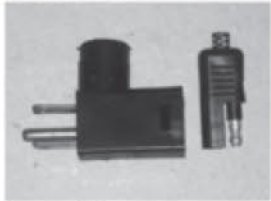


"We've been very pleased with the equipment and especially the technical help. I'd give Schleuniger high marks all around and would look to them for solutions in the future." **Doug Leithauser, Manufacturing Engineer, IMMI**

To Be Precise.



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NEWS PLUGS continued



Continued from page 28

for direct heat sink mounting, with thermal compound to ensure maximum performance.

A new industry standard, the Bourns Gas Discharge Tube 2017 Series with FLAT Technology offers a 2-electrode GDT in an innovative, space-saving, flat-package design, making it ideal for high density and space-restricted applications in industrial communications and PCB assemblies.

Vishay TNPV's high voltage thin-

film flat-chip resistors are an industry-first, providing precise voltage measurements and board space battery-saving management systems alongside test and measuring equipment. The range is available in 700V and 1000V variations.

With an extensive portfolio of passive components comprising over 150,000 in-stocked products, such as resistors, capacitors, inductors, filters and more, Newark element14 continues to invest in new products including an extended range of Full Reel AEC-Q200 qualified ceramic capacitors and surface-mount resistors.

The full range of passives from TE Connectivity, Vishay and many others is available from Newark element14.

Innovative Navy Data Communications Cable Achieves Approval from U.S. Navy

Champlain Cable Corporation, a leading developer and producer of wire and cable for extreme conditions and applications, has successfully achieved Qualified Product Listing status with the U.S. Navy for their latest secure Data Communication Cable, developed specially for the U.S. Naval Fleet: MIL-DTL 24643C Slant "77" CAT 6A. These cables, which allow for data and communication secure transmittal at a stunning rate of 5x faster than the CAT 5E currently used, meet and exceed the rigorous requirements specified in MIL-DTL24643. Additionally, they can be installed without changing existing connections or the cable envelope for a quick and effective transi-

tion. Champlain Cable is the first company to qualify for this approval, which enhances the Navy's on-board data transmittal capabilities for all U.S. Naval vessels, ultimately saving the lives of our U.S. fighting men and women around the world.

Of the recent approval, Champlain Cable Director of Market & Product Development Jack Griffin said, "Champlain Cable was the first to produce category cable that met military specs back in 2008. Now we are continuing our legacy of innovation for the military with CAT 6A cables, which are groundbreaking for their ability to deliver improved and fully protected communication performance, meeting fireproof ratings, toxicity requirements and safety standards. It's an honor for us to help bring the Navy fleet to the cutting edge of communication technology and into the future, and to equip their vessels with the safest, most effective cable available."

Champlain Cable Corporation is the primary manufacturer in supplying the U.S. Navy with Secure Data & Communication Cable Products. Their products are perfectly suited for harsh military and sub "V Line" conditions, in particular their proprietary Low Smoke Zero Halogen Dataclear™ Marine products.

Champlain Cable Corporation is a wire and cable development and manufac-

Does your Cable Tester:



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Restrict an operator from altering the program?



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NEWS PLUGS continued



Continued from page 34

turing facility based in Colchester, VT. Founded in 1956, Champlain Cable has innovated and manufactured essential wires and cables for the military, aerospace, communications, automotive, entertainment and electronic industries.

For further information, please www.champcable.com.

Allied Wire & Cable Commits Another \$500,000 to Local Catholic Schools

Since previously donating \$1 Million to the BLOCS program, Allied Wire & Cable has committed to providing local Catholic

schools with another \$500,000 over the next two years. The company signed on for another two year term, meaning it will donate \$250,000 per year to help fund tuition for Philadelphia area students in need.

Allied Wire & Cable recently committed to another two years of aiding local Catholic schools through the BLOCS program. BLOCS, Business Leadership Organized for Catholic Schools organization, is supported by companies, firms and foundations that unite to grant scholarships, raise endowment funds and support education in the Philadelphia area. Allied started contributing to the organization in 2013, and has since donated \$1 Million to education.

By the end of 2017, an additional \$500,000 will go to a handful of deserving



beneficiaries, which equates to providing \$250,000 per year in funding.

New

Wire Crimp Pull Testing

Introducing the fully integrated WT3-201M automatic wire crimp pull tester

Engineered with efficiency and ease-of-use in mind, the all-new WT3-201M satisfies destructive and non-destructive crimp pull tests up to 200 lbf / 1 kN. Whether pulling to break, pulling to a force, or holding at a force, rely on the WT3-201M to satisfy your UL, ISO, ASTM, SAE, MIL, and other testing requirements.

The WT3-201M joins Mark-10's family of manual and motorized force testers, which may be used in applications up to 1,500 lbf / 6.7 kN.

Visit www.mark-10.com/wt3-201m for video, complete specifications, and pricing.

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For the 2016/2017 school year, Allied will fund six Catholic schools local to the company's headquarters outside of Philadelphia. The beneficiaries include:

- Pope John Paul II High School (Royersford)
- GESU School (Philadelphia)
- Cristo Rey Philadelphia High School (Philadelphia)
- Bishop Shanahan High School (Downingtown)
- Holy Rosary Grade School (Plymouth Meeting)
- St. Francis of Assisi Grade School (Norristown)

Allied Wire & Cable also chose the BLOCS program as one of the beneficiaries, making a total of seven for the 2016/2017 school year. With a donation going to the BLOCS program, coordinators can grant partial or full scholarships as they see fit.

Bishop Shanahan was particularly pleased with the donation, and says that "one in four students qualify for and need these tax dollars." In a letter to the company, the president, Sr. Regina Plunkett, said, "Thank you seems so small when the impact of your gift to Bishop Shanahan High School is so large!"

The company looks forward to aiding children in their education and continuing to support the BLOCS program.

Allied Wire & Cable is a family owned and operated specialty manufacturer and distributor of wire and cable with more than 25 years of experience. Allied serves all major global markets, including government and military, as well as the

aerospace, automotive, and telecommunications industries. AWC is dedicated to personalized service, and assigns an individual sales rep to each and every customer. Customization services such as cut and strip, custom print, dyeing, stripping, twisting, and more are available, in addition to a full range of custom cable design and manufacturing services. Allied is headquartered in Collegeville, PA, with stocking locations in Florida, Wisconsin, and Nevada. Additional sales offices are located in New Hampshire and throughout the Southeastern United States. Allied is proud to serve customers worldwide. For more information, please visit www.awcwire.com.

Personnel Additions at TLC Electronics Increases Value Added Focus

To create additional value for their customers' product design efforts, TLC Electronics has strengthened their technical resources available to their customers, prospects and suppliers by adding a Principal Application Engineer, Customer Service Representatives and Marketing Specialist roles.

Jeff Martin joined TLC Electronics in the role of Principal Applications Engineer on Monday Feb 1st, 2016.

The Applications Engineer role is new at TLC and will greatly expand on their existing technical resources and provide a better level of service to their customers. Working with sales and customer service, Jeff will serve as the primary technical face

of the company - directly interfacing with prospective and existing customers to evaluate new opportunities and resolve technical issues. His responsibilities will include working with customers on early-phase design concepts, defining and communicating technical requirements as well as ensuring manufacturability.

Jeff has a Bachelor of Mechanical Engineering degree from the University of Minnesota and is pursuing a Masters of Electrical Engineering from Minnesota State University Mankato. Jeff has worked for Johnson & Johnson, Boston Scientific and Goodrich Sensor Systems within both R&D and Manufacturing Engineering functions. He has experience as a project manager, software developer, lead R&D engineer, lead mechanical engineer, applications engineer, and manufacturing engineer.

Jeff will also bring a level of entrepreneurial spirit to the company as he has a history of developing projects both inside and outside the company environment, including designing a 5-axis robotic arm, developing custom software for product testing and streamlining the design BOM reviews. He also is an avid motor-head and rebuilds jet-skis, snowmobiles and motorcycles. His garage-based equipment listing is quite impressive.

Jeff can be reached at j.martin@tlc-electronics.com or direct dial 651-287-2960.

In addition, TLC has added technical

Continued on page 38



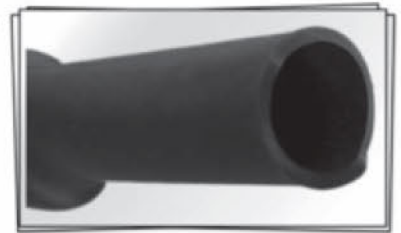
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We also offer a Bell helicopter approved shrink tube label MARK-321 series.

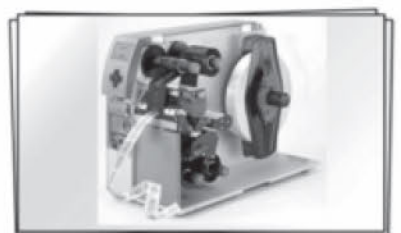
- 3:1 ladder formatted shrink tube label
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Need a non-shrinkable label? Ask about our Cable Tie Marker Tag (SAE AS81531 & 4.6.2 and MIL-STD-202F)

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Need double sided prints? Ask about the **Gamma Double Mark!**

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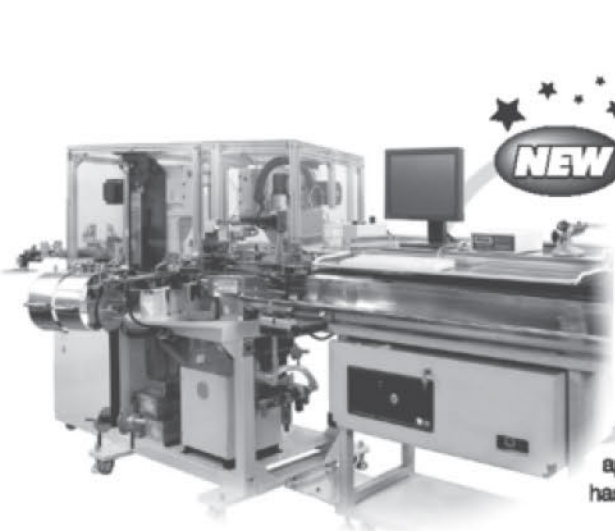


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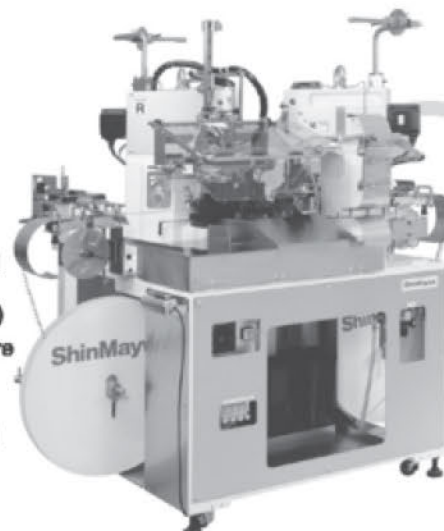


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TRD401 Series

New Generation Wire Terminating Machine with Great Variety of Advanced Functions (24-14 AWG)

Excellent precision and quality in wire measuring and crimping. Thanks to the combination of automatic wire changer and manual applicator changer, change over time has reduced to 1/8th!



TRD301 Series

To meet Comprehensive Range of wire Processing Requirement (24-14 AWG)

High processing capability and more stable processing precision.

Single end, both ends seal insertion can be processed by TRD301WPSA/ TRD301WPSB/TRD301WPA



TR201 Series

High Precision Crimping for Small and smart Wire Gauges 36-18 AWG

Both twisting / tinning and crimping can be changeable with quick change (TR201SS). Lead-free and regular tinning can be handled with the tinning unit.



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NEWS PLUGS continued



Continued from page 37

Customer Service Representatives and a Marketing Specialist to increase opportunities to service their customers' and suppliers' needs. Customer Service Represen-

utilize their technical and their customer service skills to assist customers and prospects with order processing and technical recommendations for product and service solutions. Customer service personnel can be reached at customerservice@tlcelectronics.com or 651-488-2933.

TLC also added a marketing specialist position to increase their marketing and prospecting efforts. Chris Humting has

advertising, sales and supply chain solutions. Chris can be reached at c.humting@tlcelectronics.com or direct dial 651-558-2597.

TLC Electronics is a Minnesota based value added distributor of electro-mechanical components and sub-assemblies. Established in 1984, TLC Electronics has grown to become one of the Midwest's largest regional value-added distributors of electromechanical components and sub-assemblies for the electronics industry. See www.tlcelectronics.com for more detail.

Lee Sobocinski Appointed President of IPEG Industrial Group's Thermal Care, Inc. Business Unit

IPEG, Inc., an industrial group with subsidiaries serving the plastics-processing, waste-recycling, and industrial heat-transfer markets, has appointed Lee Sobocinski to the position of President of its Thermal Care, Inc. business. Sobocinski, who has served as the company's Director of Sales for the past two years, will now assume overall responsibility for Thermal Care sales, service, engineering, marketing, and operations.

"I am very excited to announce the promotion of Lee Sobocinski to the position of President of Thermal Care," said IPEG President and CEO Chris Keller. "Lee's extensive business experience, as well as his recent leadership of the Thermal Care sales team, make him a strong leader for Thermal Care and a valued member of the IPEG management team."

A 1996 graduate of the Milwaukee School of Engineering, Sobocinski started his plastics industry career in 1998 as an application and sales engineer for ACS Group, a maker of cooling, material handling, and other auxiliary equipment. There, he advanced to manage inside sales, then systems sales until 2004 when he was appointed Director of Sales and Marketing at DeCrane Aerospace Aircraft Seating, which promoted him to the posi-



Lee Sobocinski

tion of Vice President of Sales and Marketing in 2008. Following the acquisition of that business by Goodrich Cabin Seating Systems in 2010, Sobocinski returned to ACS Group in 2011 as its AEC National Sales Manager until 2014, when he joined Thermal Care.

With operations based in Niles, Ill, Thermal Care is a leading developer and manufacturer of custom heat transfer systems and equipment, serving more than 50 industries including plastics, lasers, heat treating, food processing, machine tool, plating, anodizing, chemical, die casting, optical coating, and printing. In addition to product lines that include portable and central chillers, cooling towers, pump reservoirs, and temperature controllers, Thermal Care adds the experience and engineering knowledge to develop and execute plant-wide cooling solutions.

Headquartered in Cranberry Township, Penn., IPEG comprises a family of leading brands serving the global plastics-processing, waste-recycling, and industrial heat-transfer markets. In addition to Ther-

Continued on page 40

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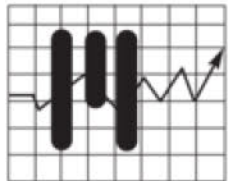
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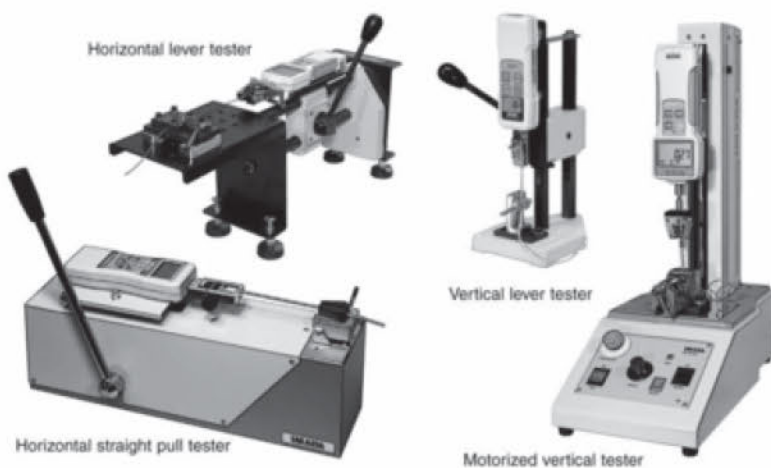
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tative (CSR) additions include Gaby Feivor, who accepted the role and began in this posi-

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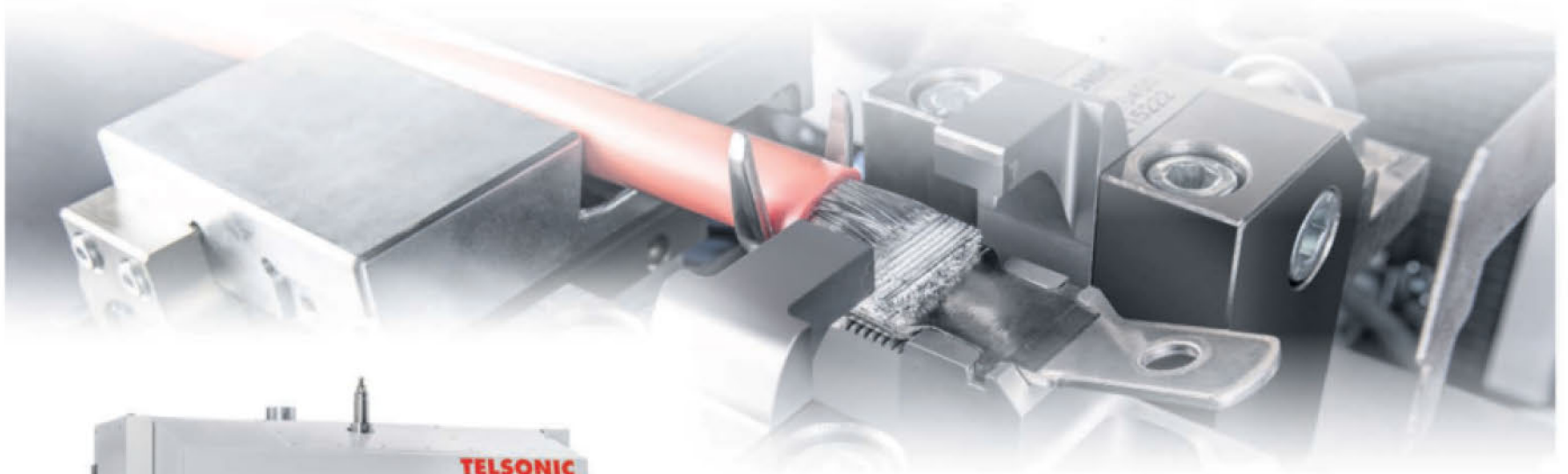


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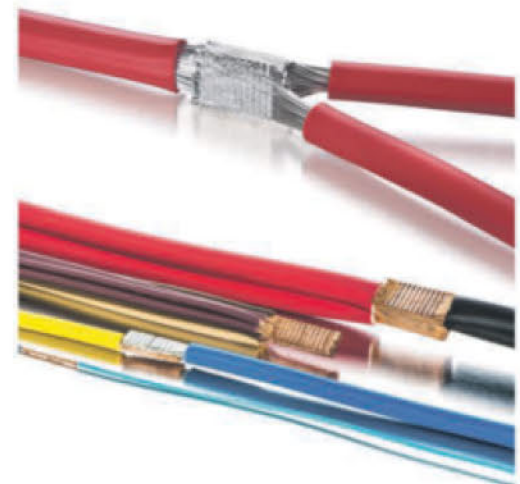
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NEWS PLUGS continued



Continued from page 38

mal Care, IPEG brands include Conair, a leading global manufacturer of auxiliary equipment for plastics processing; Republic Machine, a leader in the design and manufacture of single-shaft shredders for recycling of plastics and other materials; and Pelletron Corporation, a global leader in conveying and dedusting technologies. For more information visit website www.thermalcare.com

KOA Speer Introduces 1.5 Watt Molded Current Sense Resistor in 2512 Size

KOA Speer Electronics has added the SLW1, a 1.5 Watt, 2512 size chip to its line of molded current sensing resistors. The SLW1 features resistance values ranging from 3 mΩ up to 100 mΩ in several tolerances as low as 0.5% with a wide operating temperature range of -55°C to +180°C.

The chips special electrode shape easily absorbs thermal expansion and shrinkage stress. It is made with a flame retardant molded construction providing high mechanical stability. These resistors are suitable for reflow, wave, and iron soldering.



1.5 Watt Molded Current Sense Resistor in 2512 Size

The resistors are ideal for industrial, automotive, telecommunication and consumer electronic markets, in applications such as DC to DC conversion and AC adaptors, notebook PCs, battery packs, motor controls, automotive engineering and management systems and low impedance connections.

The SLW1 molded current sense resistor is AEC-Q200 qualified. Lead time is ten weeks. Please contact KOA Speer for samples or more information.

KOA Corporation, whose global presence includes corporate headquarters in Japan, and sales locations in the USA, Germany, China and Singapore, offers a wide range of products which include thick and thin film resistors, current sensing resistors and resistor arrays; thermal sensors, fuses and varistors; wire wound, multilayer, power and thin film inductors; LTCC's and modules. KOA Speer Electronics, an affiliate of KOA Corporation, has served the electron-

ics industry since 1980. Visit www.koaspeer.com.

Molex Earns Prestigious Huawei Technologies 2015 Best Quality Partner (Gold Award)

Molex, a global provider of integrated electronic solutions, today announced it has received the 2015 Best Quality Partner (Gold Award) from Huawei Technologies Co., Ltd., a leading global information and communications technology (ICT) solutions provider based in Shenzhen, China. Molex won the Gold Award based on the strength of its product quality performance and quality management process and was the only Huawei cable and connector supplier to receive the award.

"We are absolutely delighted to receive this prestigious award from Huawei," said Bryan Blankley, vice president sales, datacom global industry group, Molex. "This honor represents the strength of our dedication to support a highly valued customer in a fast growing market. We are proud to be recognized by Huawei for excellence in delivering on our commitment to quality."

Molex solutions support the development of Huawei end-to-end ICT solutions, which are designed to provide customers with a competi-

Continued on page 43

Save \$'s Wrap A Spot Tape Automatically

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When Quality Matters

NEWS PLUGS continued

Continued from page 40

tive edge in telecom and enterprise networks, devices, and cloud computing. Huawei ranks top suppliers in its global supply chain according to an annual scorecard measuring performance on a quarterly basis. The Best Quality Partner (Gold Award) recognizes the top suppliers in different categories that demonstrate the best results in providing quality products and services to Huawei in their category.

In 2015, Molex consistently ranked highest among Huawei connector and cable suppliers in the categories of quality and stabilization. Responsible for overseeing Molex quality control and shipments in China, Molex Dongguan excelled in providing responsive service and reliable delivery of high-performance solutions to help meet Huawei's targets for superior quality.

For more information about Molex, please visit www.molex.com.

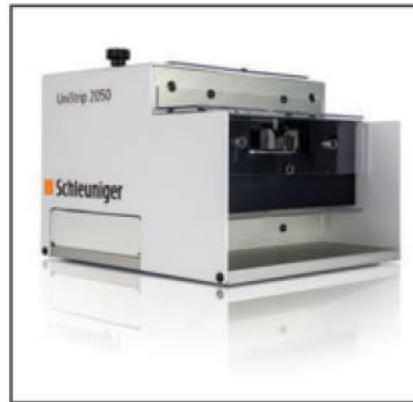
Schleuniger Offers the New UniStrip 2050 Benchtop Stripping Unit

The new UniStrip 2050 combines convenience and quality at a very competitive price. It is a simple and cost effective stripping device for wires up to 2/0 AWG

(70 mm²) or cables up to 0.59" (15 mm). The UniStrip 2050 is pneumatically driven so no electricity is required. The simple, foot pedal operation makes it easy for even the most novice users to run.

The power and robust design of the UniStrip 2050 make it suitable for a wide range of applications and the simple operation makes it ideal for a variety of production environments.

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



UniStrip 2050 Benchtop Stripping Unit from Schleuniger Group

The Schleuniger Group in Thun is a globally active technology company and a leading supplier in the Wire Processing industry. Customers of the Schleuniger Group primarily supply the automotive, entertainment, and information industries as well as the communication sector. Schleuniger products are used whenever

precise wire processing plays a role.

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.

Wired for Healthcare...Just What the Doctor Ordered

In early January, Encore Wire introduced to their manufacturer representatives their newest addition in the existing Type MC-LED (Type PCS) product line, MC-LED Healthcare™, the next generation of Encore's hybrid power and control/signal conductor cable system. MC-LED Healthcare incorporates Encore's advanced SmartGround™ technology, which provides the required redundant grounding path demanded by Section 517.13(a) of the National Electrical Code® for use in patient care areas of hospitals, nursing homes, dental offices, outpatient and other types of healthcare facilities.

"As emerging energy saving technology rapidly expands in the 21st century, so should the cabling technology that powers the world's energy conservation. Encore Wire's Type MC-LED Healthcare

cable was specifically designed to adapt and overcome existing cable limitations with proven innovative solutions." - Paul Abernathy, Encore Wire Codes & Standards Manager.

MC-LED Healthcare is ideal for use in 0-10V dimming control and energy management systems in health care facilities where energy management is critical to effective and sustainable operations. Encore's specialized redundant grounding system features a bare aluminum bonding/grounding conductor installed in intimate contact with all convolutions within the armored cable system, which ensures a more effective and reliable grounding system in health care environments where grounding and bonding redundancy is critical to environmental safety. MC-LED Healthcare is available with 12 AWG or 10 AWG CU Type THHN/THWN-2 power conductors, along with an individually twisted and jacketed pair of 16 AWG CU Type TFN or equivalent conductors.

For more information about Encore Wire's MC-LED Healthcare, please contact Kyle Carter at 972.562.9473 ext. 277. For Codes & Standards video, go to youtube.com. For product Sales Sheet, visit MC-LED Healthcare.



MC-LED Healthcare™, the next generation of Encore's hybrid power and control/signal conductor cable system

2-in-1 DualZip Cable Tie



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Flexible Flat Cables for Wearable Electronics

Providing uninterrupted reliability and long term durability, Cicoil's Highly Flexible Flat Data and Video Cables are excellent for use on Wearable Electronics products, including Military Biosensors, Info-tainment Systems, Mobile Computing and Virtual Reality Headsets. The thin profile and high strength wires provide excellent solutions for confined spaces and utilization within compact, sensor enabled devices. In addition, the Flat Cables excel in rugged activities, and are immune to shock, vibration, harsh weather, environmental hazards, solvents, submersion in water and temperature extremes (-65°C to +165°C). Mobile computing wearable technology

Cicoil's Standard Video & Data Transmission Cable offering includes Cat 5e (round and flat versions), Cat 6, Dual Shielded Camera Link™, USB 2.0 & 3.0, IDC Ribbon, Flexible Coax, HDMI and Fire Wire Cables. These "off the shelf" cables are available for quick delivery and cable assemblies, complete with connectors, are offered in 3 foot, 6 foot and 12 foot



Cicoil's Highly Flexible Flat Data and Video Cables are excellent for use on Wearable Electronics products

lengths. Custom designs are also available with minimum lead times. In addition, Cicoil offers low friction coatings, custom shape and torsion designs by request.

Cicoil's patented computer-controlled extrusion process allows each individual component to be placed in a flat parallel profile, precisely controlling the spacing of each component, insulation thickness and the overall cable shape. This ensures that each of the internal pairs or conductors do not rub against each other, wear during operation and provide optimum EMI/RFI suppression.

The halogen-free, Flexx-Sil™ Encased Flat Cable Solutions are designed to provide high speed video and data transfer, weight & space savings and premium current carrying capacity. The cables are ideal to meet the continuous motion and performance requirements of wearable technology applications.

Cicoil's Data & Video Transmission Cables are UL Recognized, CE Conforming, RoHS & REACH Compliant, Class 1 Clean Room Rated and are cured continuously, with no debris or material contamination in an automated, climate controlled environment.

Cicoil has been a leader in designing and manufacturing high performance cable assemblies for more than sixty years. The company's Patented Flexx-Sil™ Flat Cable Technology provides high flexibility, extremely long life, and they can withstand temperature extremes from -65 degrees to +260 degrees Celsius. Cicoil's flat cables are used in thousands of demanding applications; including aircraft fuel control cells, semiconductor automation, and the Space Shuttle. Cicoil designs and manufactures its Flexx-Sil™ jacketed cables and cable assemblies in an automated facility in Valencia, California. Cicoil's quality assurance system is certified to the ISO 9001 (AS9100) standard. Visit www.cicoil.com for more information, or call 661-295-1295 to speak to an application engineer.

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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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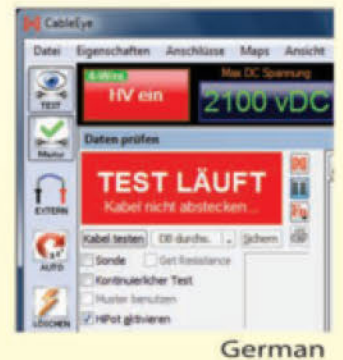
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NEWS PLUGS continued



HellermannTyton Achieves AS9100 Quality Management System Certification

HellermannTyton, www.hellermann.tyton.com, announces achieving AS9100 certification. AS9100 is a widely adopted and standardized quality management system for aerospace, defense and aviation markets. HellermannTyton is a global leader in cable management and protection products, identification systems and network connectivity solutions.

"Dedicating the resources, both in personnel and capital, to earning AS9100 certification demonstrates our commitment to continually

improving every aspect of our business," remarked Gwen Benz, Director of Quality Assurance at HellermannTyton. "It also enables us to consult with our end users more closely, and shape product development for aviation, space and defense based on first-hand discussions around customers' specific requirements."

In-depth information on all of HellermannTyton's solutions as well as the company's solutions for aviation, aerospace and defense applications can be found at: www.hellermann.tyton.com or by emailing contact@htamericas.com.

HellermannTyton's systems and solutions help enterprises in electrical, OEM, datacom, automotive, heavy equipment, renewable energy and other industries better manage

and identify wire, cable and components. The company's engineered solutions and innovative products are designed and constructed to meet the strictest quality standards while delivering reliable implementation at the lowest cost. Hellerman-



Indium's New 10.2HF Solder Paste

nTyton is a global manufacturer located in 35 countries, with North American headquarters in Milwaukee, Wisconsin.

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Indium Corporation's New Indium 10.2HF Solder Paste Delivers Superior ICT Performance

Indium Corporation announces the release of Indium10.2HF, a halogen- and Pb-free, no-clean solder paste that is specifically formulated to address in-circuit testing challenges. Indium10.2HF provides low cost-of-ownership to PCB assemblers through all-around balanced performance.

In addition to outstanding print transfer for increased yields, and resistance to head-in-pillow (HIP) and non-wet open (NWO) defects, this no-clean solder paste is ideal for customers who want a clear residue that quickly breaks away after in-circuit testing.

Indium10.2HF also helps to Avoid the Void™ by delivering low voiding in QFNs, BGAs, and CSPs. This solder paste is perfectly suited for a variety of printing applications, even with small components.

It also has superior HIP and NWO resistance, slump resistance, and ICT/flying probe testability.

Indium10.2HF solder paste is part of Indium Corporation's family of high-performance, lead-free, low-voiding, no-clean solder pastes that help manufacturers Avoid the Void™.

For more information about Indium10.2HF, email askus@indium.com or visit www.indium.com.



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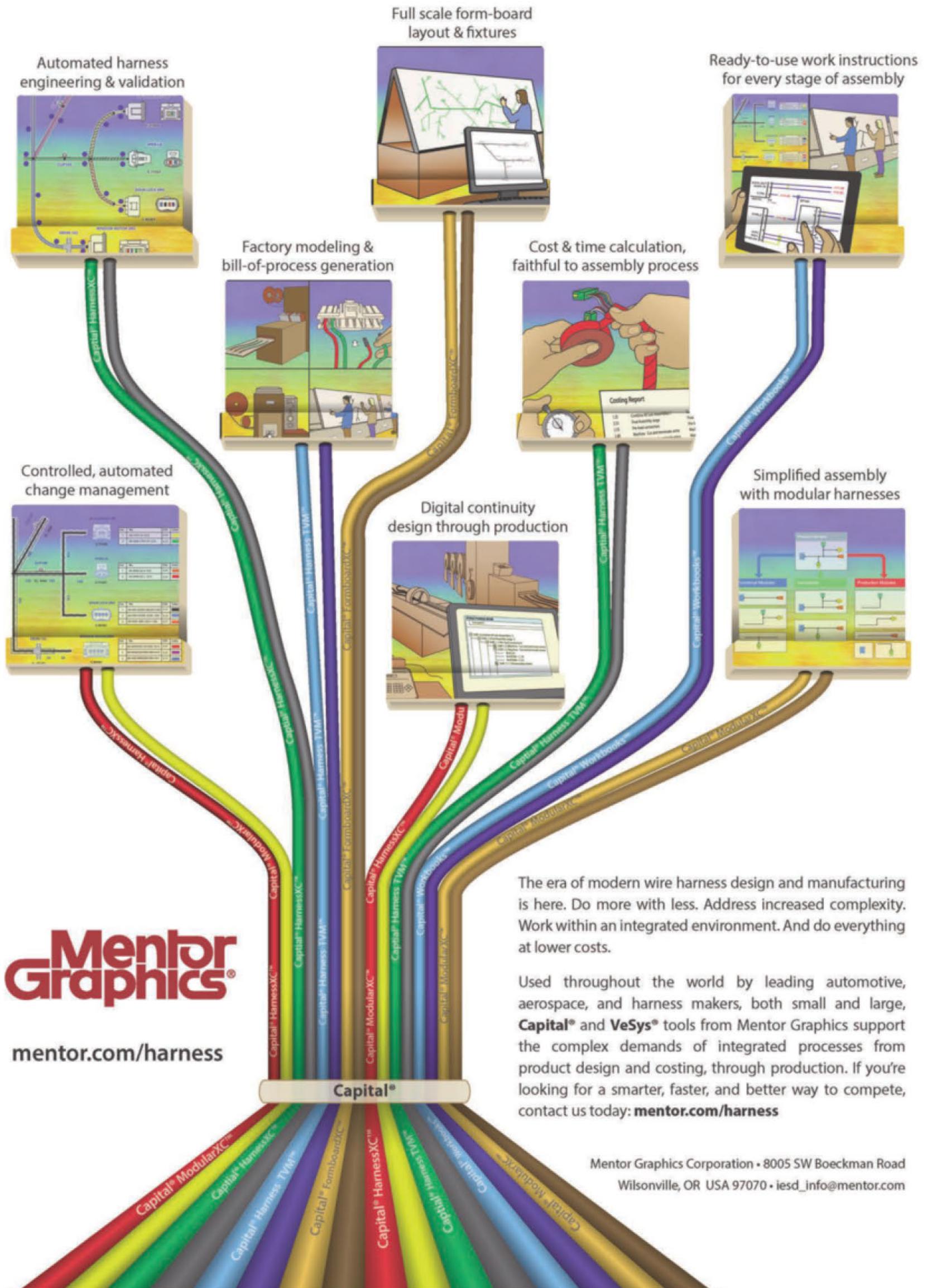
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NEWS PLUGS continued**MC Barrel Packs from Encore Wire****Grab and Go...Cable Pulling Made Simple.**

Encore Wire introduces MC Barrel Packs to its line of cost and labor savings packaging. The patent pending MC Barrel Packs require no extra tools and serve as an instant payoff system.

Using a proprietary packaging technique, Encore Wire's MC Barrel Packs allow longer cable lengths than competitors' offerings while using smaller containers, meaning no reels to dispose of and minimal scrap.

MC Barrel Packs are easily maneuvered using any standard dolly and provide a 360-degree radius pay out, increasing productivity and decreasing labor cost. In addition, there are no tangles when pulling from any angle. MC Barrel Packs are available in standard 120V/280Y and 277V/480Y color codes.

For more information about Encore Wire's MC Barrel Packs, please contact Kyle Carter at 972.562.9473 ext. 277. For a product Sales Sheet, click this link...MC Barrel Pack.

Encore Wire Corporation is a leading manufacturer of a broad range of electrical building wire for use in residential, commercial and industrial applications, including data centers, healthcare facilities and clean energy.

The Company is focused on maintaining a high level of customer service with low-cost production and the addition of new products that complement its current product line.

To learn more about Encore Wire, its products and culture, visit encorewire.com, YouTube, and Facebook.

Newark element14 Adds 500 New HellermannTyton Products to Portfolio

Expanded partnership broadens Newark element14's cable management and network connectivity selections

April 4, 2016 – Chicago – Global electronics distributor Newark element14 is growing its partnership with cable management and protection, identification and network connectivity solutions manufacturer HellermannTyton, adding 500 new SKUs to its product portfolio. Heat shrink tubing, spiral wrap, clamps, clips, grommets, electrical tape and 10 varieties of cable ties and clips are among the hundreds of items that will now be available in North America through the global distributor.

"Premier Farnell is committed to providing an ever increasing portfolio of electronic and industrial components, and

offering hundreds of new HellermannTyton products helps us equip our customers with the industry-leading solutions they want and need," said Dave Beck, Global Head of Product Management – Interconnect, Premier Farnell.

New categories of products available through the expanded partnership include: bundling and securing; application tools; routing, protection and insulation; identification; network connectivity; and wire connectors.

"At HellermannTyton, we offer an integrated approach to design and delivery that optimizes service for all our customers, locally and globally," said Dan Martin, VP of Sales, HellermannTyton. "Expanding our partnership with Newark

element14 and tapping into their global distribution network offers purchasing managers and engineers a new online avenue to solutions that reduce labor and cut costs."

HellermannTyton is a leading global manufacturer of cable and wiring management products, and specializes in providing routing solutions that keep components separate and functioning properly. Their high performance fastening, connecting, routing, protecting and identifying solutions help technicians manage wiring and cabling systems.

For more information about HellermannTyton products available through Newark element14, visit <http://www.newark.com/hellermanntyton>.

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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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NEWS PLUGS continued


Saki Corporation and Fuji Connect to Improve PCB Manufacturing Productivity and Efficiency

Saki Corporation (SAKI), an innovator in the field of automated optical inspection equipment, proudly announces its participation in Fuji Machine Manufacturing's "FUJI Smart Factory with Nexim" initiative. Saki's inspection and measurement systems will connect with Fuji's pick-and-place machines for a high productivity manufacturing process.

"SAKI is a leading company in the field of inspection solutions towards SMT (surface mount technology) lines," said Shinsuke Sahara, Fuji Managing Executive Officer. "With SAKI's innovative mind from its

establishment, SAKI has built up a wide ranging portfolio from solder paste inspection (SPI), 2D and 3D automated optical inspection (AOI), to 3D automated X-ray inspection (AXI) systems, aiming to realize high productivity solutions for all customers. By Fuji standardizing the communication protocol between AOI machines and electronic component mounters, SAKI automated inspection machines can connect to Fuji's Smart Factory with Nexim to create a production placing system that extends beyond the boundaries of corporations. This significantly contributes to the production of high quality products and high OEE (overall equipment efficiency) at user sites."

"SAKI welcomes this cooperation with FUJI, a company we have worked with for many years," said Yoshihiro Akiyama, SAKI Vice President. "By integrating FUJI's pick-and-place equipment with SAKI's inspection and measurement technologies, we

can provide our customers with a highly efficient manufacturing process while minimizing cost."

For more information contact Saki at +1.510.623.SAKI (7254), email sales.us@sakicorp.com, or visit our website at www.sakicorp.com

Weidmuller's New connectPower PRO DC/DC Converter Line

Weidmuller introduces the connectPower PRO DC/DC Converter product line to complement their PROeco and PROmax power supplies. Designed specifically for the Process, Transportation and Machinery industries, these new converters now carry Class I Div 2 and ATEX certification as well as Class III protection. This electrically isolated DC/DC converter line avoids critical earth loops; from an unregulated or distorted input voltage, it generates a stable, low-distortion output voltage. The connectPower


Weidmuller's New connectPower PRO DC/DC Converter

compact converters are ideal for use in earth-free power systems, such as the battery backup systems in hazardous location applications.

Weidmuller PRO DC/DC converters offer a versatile solution for all 24 VDC power supply applications. They feature industry leading power specifications, excellent resistance to shock and vibration, a status signal for remote monitoring and operating efficiency of 94%.

At a space-saving width of only 43mm for the 10A module, PRO DC/DC converters can be mounted side-by-side without clearance requirements. This offers up to a 30% reduction in needed cabinet space. A metal clip-on foot provides increased stability on the DIN-rail and resistance to high vibration and shock.

These converters offer integrated features to streamline trouble-shooting and optimize machine uptime. An alarm output monitors the status of the 24V output voltage and an LED indicates "DC OK" status for the output voltage. The transistor outputs and the on/off status relay facilitate remote monitoring.

Weidmuller's DC/DC Converter has broad protection thanks to an internal fuse on the input side and output side, with short-circuit and overload protection as well as a power boost of more than 600% I* IN for 16ms.

As with all Weidmuller power supplies, the PRO DC/DC Converter line is designed for operation in extreme environments.

They have an operating temperature range of -25°C to +70°C and a start-up of -40°C. In addition to Class I Div 2, ATEX certification and Class III protection, they also have CE, TUV, GL, cULus, cURus and DNV approvals.

For further information contact Weidmuller, 821 Southlake Blvd. Richmond, VA 23236.

Phone (800) 849-9343 or fax (804) 379-2593. Visit www.weidmuller.com

SDE STANDARD DIE ENVELOPE CRIMP TOOLING


Standardize Your Crimp Tooling

SDE (standard die envelope) is a new, flexible approach to crimp tooling, from TE Connectivity, that allows use of the same dies on tooling across a range of application platforms. Dies are interchangeable in tools from portable hand tools—manual or battery-powered—to pneumatic hand tools and electric bench terminators. It's a family of tools that you can take from bench to production or into the field, without the need for dies fitted to each kind of tool. They're ideally suited for R & D, networking applications and on-site maintenance work.

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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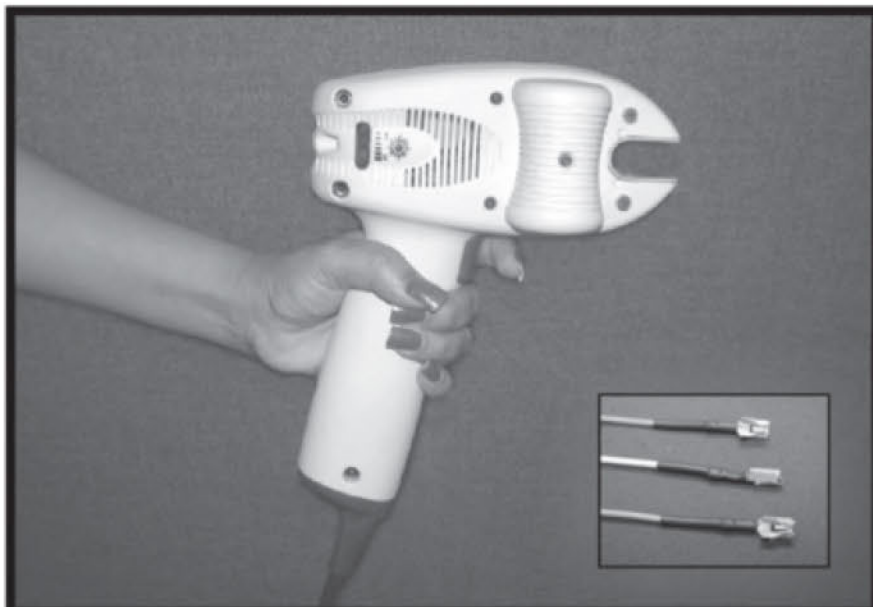
More customers choose Cablescan Series 90 Continuity Analyzers with our unique TestRite software than any other continuity test system of its kind. Series 90 circuit analyzers provide exceptional speed, versatility, and accuracy in the testing of wire harnesses, backplanes, and other interconnects. Results are 200 times faster than hand buzzing and shorts are tested in the process. The testers provide resistance and capacitance measurements, diode testing, and guided harness assembly. You can locate wires by touch and verify terminations.

Cablescan's Series 90 TestRite programs run under the most popular Windows operating systems, and can import wire lists, net lists, and CAD data. TestRite's browser window allows you to provide setup and work instructions using HTML, image, and audio files. With a simple click, everything is displayed, stored, and can be printed in seconds. High voltage and high current models are also available. Put simply, you reduce test and assembly cost dramatically. Visit our website or call us at (909) 483-2436 for more details. Cablescan, Inc., 3022 Inland Empire Blvd., Ontario, CA 91764



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*polyolefin, 5" length

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NEWS PLUGS continued



Sonobond Ultrasonics' Wire-to-Terminal Assembly Solutions Satisfy Requirements of Today's Complex Electronic Components

Sonobond Ultrasonics' metal welding technology is keeping pace with the growing number of increasingly complex electronic components used in automotive and other circuitry. The company offers wire-to-terminal welders that produce single point ground terminals, and can also accommodate a variety of specialty applications through its custom tooling capabilities.

"Today's automotive circuitry is particularly susceptible to electrical noise caused by multiple ground connections," explains Melissa Alleman, Sonobond vice president. "Our Single Point Ground Welder is a microprocessor-controlled, spot-welding system that ultrasonically welds as many as 18 wires onto a single terminal with just one pulse. Then, it automatically folds over the terminal arms to provide stress relief for the joint. Ground loops, that generate electrical noise, are eliminated."



Sonobond's Dual Head Spot Welder features welding heads on each side of the weld area, enabling it to weld up to 100 layers of foil for battery and capacitor applications.

The ultrasonic metal welding technique, as employed by the Single Point Ground Welder and other Sonobond metal welding equipment, uses a welding tip to direct high frequency, ultrasonic vibratory energy to the surface between the metals being welded. That vibratory energy disperses the oxides and surface films between the work pieces, creating a true metallurgical bond. No materials are melted and no heat, current, fluxes or fillers are used, making the welding process particularly energy efficient and environmentally responsible.

But Sonobond's unique, patented Wedge-Reed bonding system takes ultrasonic welding technology a step farther to assure precise, ultra-reliable welds are achieved by all its metal welding units. Shear mode vibration parallel to the welding surface is essential for metal welding to occur. Sonobond's system generates the shear mode with high vibratory force and low amplitude while the line of force is directly over the parts to be welded. This creates maximum ultrasonic metal welding effectiveness without bending stress or stalling and exclusively enables most oxidized and tinned metals to be welded.

"Our Wedge-Reed bonding system definitely gives us a competitive edge by providing our customers with the means to achieve exceptionally efficient and precise wire-to-terminal assemblies," notes Alleman.

In addition to welding up to 18 wires, Sonobond's Single Point Ground Welder can also weld wire bundles up to 20 square millimeters to a single terminal in one pulse. It utilizes heat-treated, tool steel, easily removed and replaced Taper Lock Tips that can be readily redressed and can perform up to 100,000 welds before being discarded. The 2,500-watt unit includes a microprocessor that stores and recalls up to 250 protocols. A digital display allows welding modes to be selected by time or energy and provides automatic frequency control and overload protection. Automatic control monitoring can also detect variations from preset lim-

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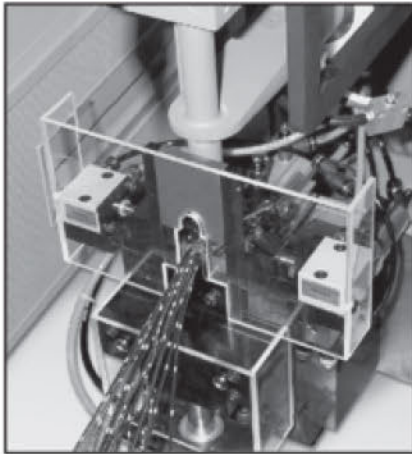
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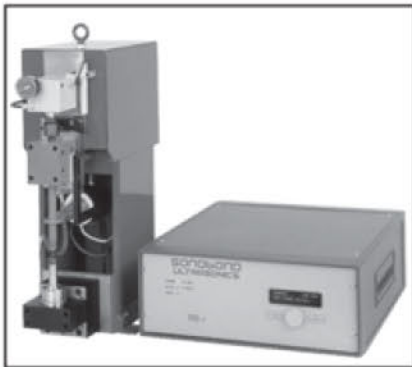
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A microprocessor-controlled, spot-welding system, Sonobond's Ultrasonic Single Point Ground Welder can ultrasonically weld as many as 18 wires onto a single terminal with just one pulse, eliminating the electrical noise produced by the large number of complex electronic components in automotive circuits.

its. Plus, weld data can be transferred to or from a computer via the unit's RS232 port.

For other spot and wire-to-terminal welding applications, Sonobond offers the SonoWeld® 1600 Metal Spot Welder. This equipment welds foils, as well as foils to tabs for batteries and capacitors, and can join dissimilar metals, such as copper to aluminum. Its microprocessor stores and recalls up to 250 weld protocols. Sonobond's Dual Head Spot Welder can



The SonoWeld® 1600 welds foils, as well as foils to tabs for batteries and capacitors. It can also spot weld dissimilar metals, such as copper to aluminum. Its microprocessor stores and recalls up to 250 weld protocols. Like other Sonobond welding units, the SonoWeld® 1600 can be custom tooled to accommodate customers' specific applications and requirements.

accommodate up to 100 layers of foil for battery and capacitor applications. It can also weld non-ferrous sheet metal, including aluminum, up to 3mm in thickness.

In addition to machinery for wire-to-terminal and battery welding applications, Sonobond has its ultrasonic SpliceRite™ series for wire-to-wire welding of bare copper wire up to 100mm² and tinned wire to 60mm². These metal

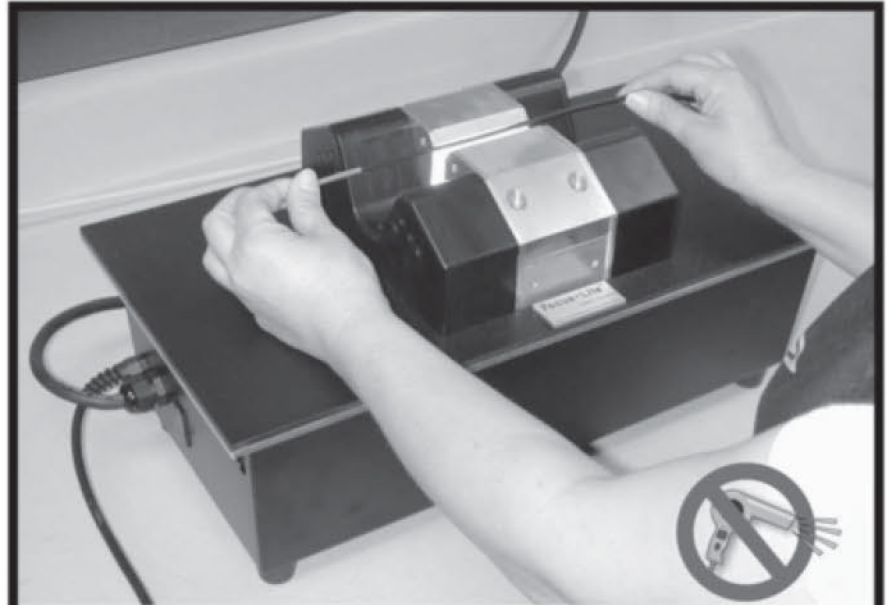
"We are especially sensitive to the fact that every application is unique and every company has different production requirements," says Alleman.

She notes that Sonobond takes a step-by-step approach to custom tooling. First, it determines whether its ultrasonic metal welding is appropriate for the customer's application. "For example, we always test tinned materials and ensure that our equipment can handle an unusual part configuration," Alleman explains.

To ensure that Sonobond equipment can meet your welding needs and assembly specifications, take advantage of a free, no-obligation Ultrasonic Welding Viability Test, using materials supplied by you to provide sample welds. If you decide to incorporate Sonobond equipment into your assembly process, you're assured of receiving comprehensive customer service and technical support, before, during and after installation.

A pioneer in ultrasonic technology, Sonobond holds more than 150 patents, including the first for ultrasonic metal welding in 1960, when the company was known as AeroProjects. In the ensuing decades, Sonobond has established and maintained a well-earned reputation for innovative and quality-engineered products. Today, the company manufactures a complete line of ultrasonic welding and bonding equipment used by leading firms in the electrical, automotive, appliance, HVAC, solar, aerospace, filtration, medical, body armor and apparel industries.

For more information or to submit materials for a free Ultrasonic Welding Viability Test, please visit www.SonobondUltrasonics.com. For immediate assistance, call 800-323-1269, 610-696-4710, or email MAlleman@SonobondUltrasonics.com.



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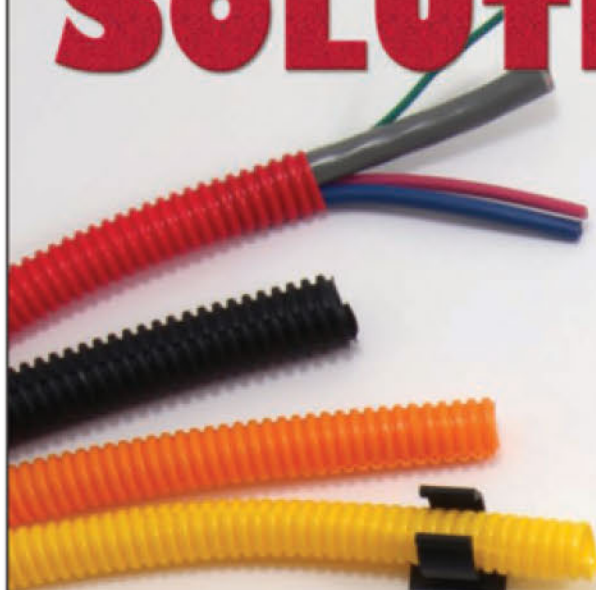
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NEWS PLUGS continued



IPEG Acquires Pelletron

IPEG, Inc., with subsidiaries serving the plastics-processing, waste-recycling, and industrial heat-transfer markets, has acquired Pelletron Corporation, a leading supplier of pneumatic conveying systems, dust removal systems and other related products. The company will operate as an independent subsidiary at its existing location in Lancaster, PA. Financial terms are not being disclosed.

IPEG, headquartered in Cranberry Township, PA, is parent to Conair, a leading global manufacturer of auxiliary equipment for plastics processing, which also designs and sells material conveying systems. However, IPEG CEO Chris Keller says the two companies are not competitors. "Whereas Conair offers vacuum-based systems that might convey hundreds or thousands of pounds per hour, Pelletron offers pressure-driven systems that are used by resin producers to handle thousands and tens of thousands of pounds per hour. There is virtually no overlap," Keller explained.

Pelletron, founded in 1987, has been operated by Heinz Schneider and Paul Wagner since 2003 and owned by them since 2008. The two will remain in their current roles of President and Vice President. All other employees are also expected to remain with the company. Keller says the company will continue to operate from its present location in Lancaster, PA, about 80 miles west of Philadelphia.

Pelletron focuses on design and engineering, with numerous patents for products such as pellecon3®, a new smart and economical conveying process, DeDuster® systems to remove dust and streamers from conveyed materials, and the Pellbow®, a patented elbow for conveying piping that prevents pellet damage and equipment wear in high-velocity conveying and abrasive material applications.

"There is potential for Conair to source some equipment from Pelletron and vice versa," Keller admits, "However, our primary focus is to help Pelletron grow doing what they do best, engineering high-throughput pneumatic conveying systems. Part of our growth strategy is to acquire solid companies,

give them autonomy and invest in their growth. This is no different."

IPEG ownership will give Pelletron desired financial strength to handle large projects that can run into the millions of dollars. "Our growth has been limited by our size, not by our know-how or capability" explains Heinz Schneider. "With the strong financial backing and global footprint of IPEG, which is much larger than Pelletron, our customers will be able to have more confidence in our ability to handle these larger projects."

Pelletron has a European subsidiary, pelletroneurope GmbH, located in Bodnegg, Germany, and distributors and partners around the world.

IPEG, comprises a family of leading brands serving the global plastics-processing, waste-recycling, and industrial heat-transfer markets. In addition to Conair, IPEG brands include Thermal Care, a leading manufacturer of process cooling solu-



Pictured left to right are, in front: Chris Keller, IPEG CEO and Heinz Schneider, Pelletron President; in back: Kirk Winstead, IPEG COO, John Erkert, IPEG CFO and Paul Wagner, Pelletron Vice President.

tions for industrial applications worldwide; Republic Machine, a leader in the design and manufacture of single-shaft shredders for recycling of plastics and

other materials; and now Pelletron Corporation, a global leader in conveying and dedusting technologies. For more information visit: www.pelletroncorp.com

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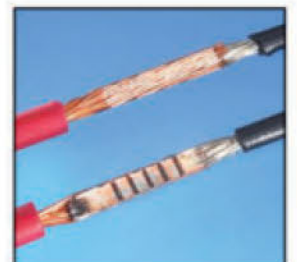
- One-pulse wire splicing up to **100mm²** and **tinned wire to 60mm²**.

- Spot welds and wire-to-terminal welds also delivered **in a single hit**. Welding by time, energy, or distance.

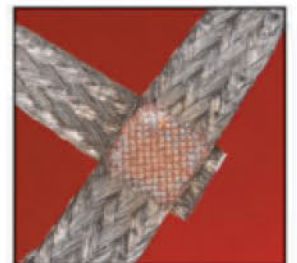
- Durable Taper Lock tips that last up to **100,000 welds**.

- Fast, easy tooling changes with **no re-calibration** required.

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NEWS PLUGS continued

**Versatile Manual or Motorized Dereelers from Eraser**

The Eraser Company, Inc. offers reelers and dereelers in a range of sizes and styles to accommodate a variety of applications. The DE600 is a versatile manual unit. It can accommodate reel sizes up to 15" wide, 29" in diameter and weighing up to 200 lbs. An adjustable friction clutch assembly prevents overruns when dereeling material.

The DE600M is a motorized reeler and dereeler. It can easily reel wire or cable without operator fatigue, or quickly dereel large amounts of wires or cables with no pulling. The 1/6 HP motor turns the shaft at

**DE600 Manual Dereeler and Winder**

a constant speed of 57-1/2 RPM and can handle reels of material weighing up to 75 lbs. Also included is a handle to allow manual reeling and dereeling if desired.

Adjustable cones and dog allow use of reels with arbor holes from 3/4" to 2-1/8" inner diameter on both units. For more information, please visit www.eraser.com, or contact Eraser at (800)724-0594 or info@eraser.com.

Heilind Introduces Series SM99 and SR99 Single Pole Spring Type Terminal Blocks from Metz Connect

Heilind Electronics is now stocking two new single pole terminal blocks, featuring a spring mechanism and aimed at compact and low profile devices.

Heilind Electronics, a leading global distributor of electronic components, has added Series SM99 and SR99 single pole spring type terminal blocks from Metz Connect.

Available in SMT and THR designs, the new terminal blocks utilize a simple push-in technique for wire insertion and a large finger-operated push-button for wire release. The blocks feature a wire connection indicator and test point for added connection reliability. Their compact design allows for space optimization on printed circuit boards.

Series SM99 and SR99 single pole spring type terminal blocks are rated up to

**Metz Connect Series SM99 and SR99 Single Pole Spring Type Terminal Blocks**

9A and accommodate a single wire cable range of 24-16 AWG. The terminal blocks are reflow-capable with a connection direction of 90°.

Ideal for consumer, lighting, HVAC, security, and industrial markets, with automation-compliant tape and reel packaging.

Visit Heilind's website for more information about Metz Connect Series SM99 and SR99 Single Pole Spring Type Terminal Blocks.

Founded in 1974, Heilind Electronics, Inc. (www.heilind.com) is a

leading distributor 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](https://www.facebook.com/Heilind) and on Twitter at twitter.com/Heilind.

HellermannTyton Ratchet P Clamp Enables Manufacturers to Cut Operational Costs

HellermannTyton has announced the release of the Ratchet P Clamp, a patent-pending cable bundle and wire management solution for heavy equipment, OEM and automotive manufacturers, and solar photovoltaic system service providers. HellermannTyton is a global leader in cable management and protection products, identification systems and network connectivity solutions.

Engineered to streamline wire harness installation, Ratchet P Clamp also helps reduce maintenance costs. The one-piece PA66 nylon solid body and stamped metal mounting plate create a versatile, easy to use and durable alternative to traditional P clamps. Offered in four sizes and in multiple mounting configurations, the reusable design minimizes part inventory requirements.

Ratchet P Clamp's adjustable ratchet mechanism is operated manually, clicking as it closes to signal that it is secure. It also can be closed with a Heller-

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- Can be used with Molex Tape Module (64016-2000)
- Meets OSHA safety and noise requirements and is CE approved
- Two safety interlock switches attached to the guard prevent press from cycling if guard is open during operation

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

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

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

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mannTyton EVO Series hand tool, using an optional tension tab. The clamp is released by inserting a small flat-head screwdriver between the ratchet rails and pushing down.

According to Product Manager Missy DeBord, "Ratchet P Clamp was inspired by our customers' requests for a lightweight cable fixing solution that will stand up to the rigors of heavy duty applications and extreme conditions. During on-site research, we learned that they often needed to route bundles side-by-side, had to improvise to secure electrical runs as a final assembly step and find 'work arounds' for mounting challenges in constrained spaces. Ratchet P Clamp solves for all those challenges and helps you work smarter." The combination of increased efficiency and reduced inventory results in lower operational costs.

In-depth information on the design and applications for Ratchet P Clamp is found at www.hellermannTyton.us/ratchetp-clamp or by emailing contact@htamericas.com.



Ratchet P Clamp from HellermannTyton

BURNDY® Announces the Introduction of Push On Cable End Caps and Force Fit Cable Caps

BURNDY®, a leading manufacturer and provider of connector solutions to the industrial, energy, construction, telecommunication, petrochemical, data center,



Push On Cable End Caps and Force Fit Cable Caps

and transportation industries, announces the introduction of Push On Cable End Caps and Force Fit Cable Caps.

Push On End Caps are widely used to seal and insulate wire and splice terminations in order to create waterproof protection against corrosion, abrasion, and moisture. The most common applications for Push On End Caps are in electrical, automotive, and networking. Caps are packaged in clear polyethylene bags.

Force Fit Cable Caps provide a force fit on the listed diameters of conductors accommodated. Caps are color coded as indicated and are packaged in a clear polyethylene bag showing size and application data. Caps conform to the conductor shape and will remain in place without using tape.

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NEWS PLUGS continued


Mentor Automotive Capital Products Compress Development Cycle Times and Boost Efficiency of General Motors Vehicles

Mentor Graphics Corporation announced that General Motors is deploying Mentor® Capital® electrical systems design tools for its vehicle development projects. The tools deliver cycle time reductions and support improved engineering processes, helping General Motors efficiently deliver the new electronic features demanded by the car-buying public. This is achieved via the Capital suite's powerful design asset re-use and correct-by-construction technology that automatically generates optimized platform-level wiring.

Electrical systems for new General Motors vehicles are now being designed using Capital tools. Furthermore, design data for existing vehicles is being converted to Capital software using utilities developed by Mentor's consulting organization. This enables rapid tool adoption through the availability of infrastructure such as rule decks and libraries, and broadened user familiarity.

General Motors has further ensured a high level of skills among its user community with on-demand training, provided via the Mentor Learning Center web platform. This always-available resource delivers tutorials, hands-on exercises, and knowledge checks that have been developed by Mentor's product experts, tailored to a number of distinct user profiles.

Like many automotive OEMs, General Motors develops vehicles based on a number of core platforms, often tailored to local market preferences. This pattern brings significant cost efficiencies but also requires comprehensive data handling, and compatibility with the enterprise IT environment.

Replacement of a key part of the vehicle development process can be a daunting task. But General Motors has reached key milestones such as production design data release on schedule while transitioning to Capital. Martin O'Brien, general manager, Mentor Automotive, said,

"General Motors' adoption of Capital is a model of good practice. It has been speedy but also highly structured. We look for-

ward to working further with GM as the applicability of additional tools within the Capital range is explored, for example to help control electrical system configuration complexity or automatically create technical publications."

Capital is an advanced software suite supporting complex electrical systems challenges from product definition through electrical system design, harness manufacture and vehicle maintenance.

Mentor Automotive provides a leading portfolio of automotive design tools and software, built on deep expertise in systems engineering, to help customers solve the most complex design challenges facing the industry. Solutions reside in three key areas for automotive electrical and electronic design: connectivity and networking; in-car experience; and sub-systems and technology.

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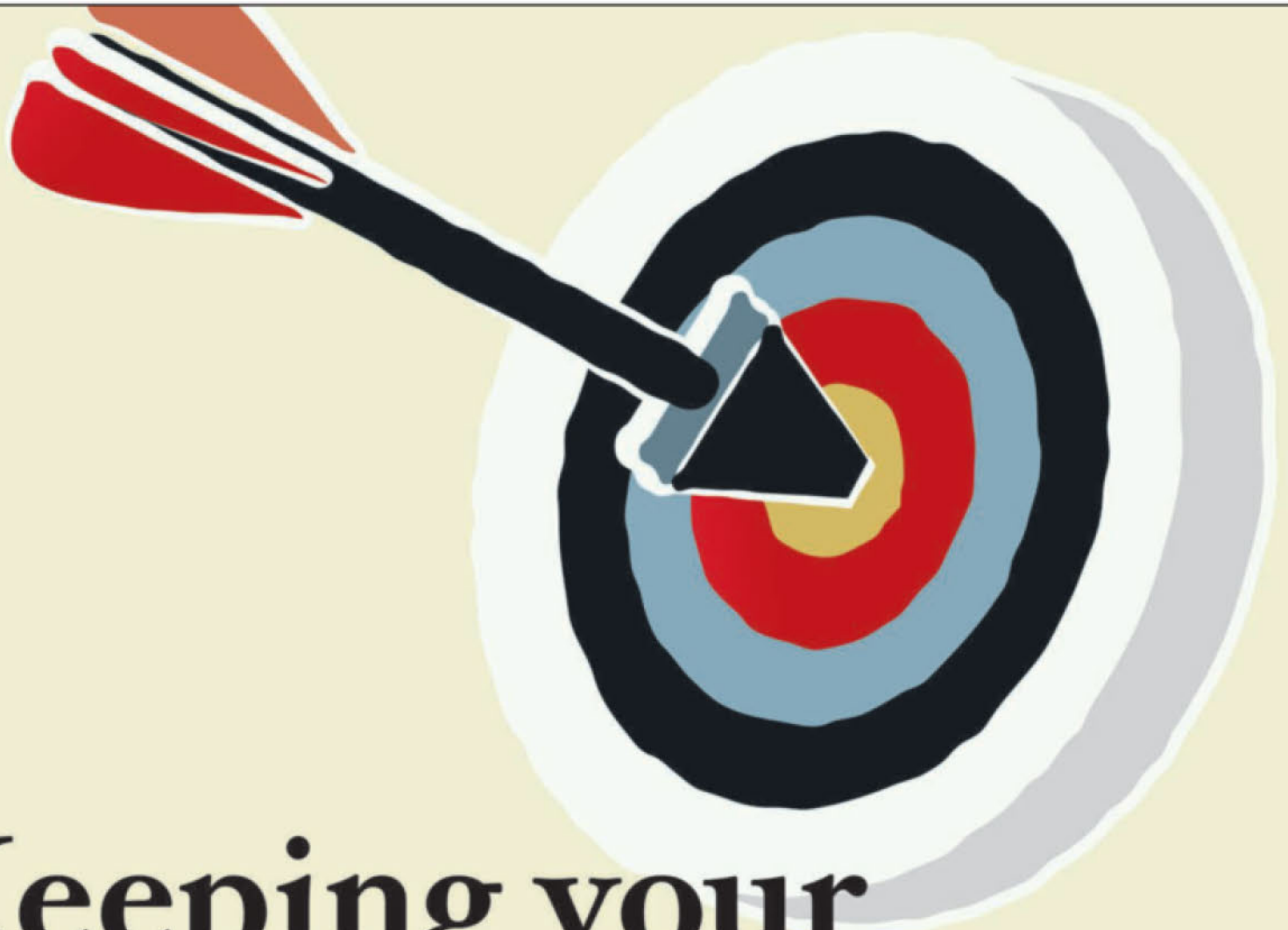
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- Develop and implement agreed upon Marketing Plan which will meet both personal and business goals of expanding customer base in the marketing area.
- Work within the sales and support teams for the achievement of customer satisfaction, revenue generation, and long-term account goals in line with company vision and values.
- Be self-motivated and organized
- Have strong leadership and communication skills.

Position Responsibilities:

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- Demonstrate technical selling skills with the product knowledge that allows the Sales Associate to give an effective presentation of Liberty Electronics full capabilities.
- Help develop strategic sales plans in conjunction with the Sales Manager, which details activities to follow during the fiscal year, which will focus the Sales Associate on meeting or exceeding sales quota.
- Maintain professional relationships with customers and decision makers.
- Sells consultatively and makes recommendations to prospects and clients of the various solutions that Liberty Electronics offers and how those solutions are best used to address the clients' business issues and needs.
- Develop a database of qualified leads through referrals, telephone canvassing, face to face cold calling, direct mail, email, and networking.
- Assists in the implementation of Liberty Electronics marketing and strategic sales plans as needed.
- Create and conduct effective proposal presentations and RFQ's.
- Maintains accurate records of all sales and prospecting activities including sales calls, presentations, closed sales, and follow-up activities.

Position Requirements:

- Previous sales experience in the electrical and electromechanical assembly manufacturing environment a plus.
- BS or BA in Business, Sales & Marketing or Engineering desired
- Frequent travel required - Willingness to travel a Must.

Liberty Electronics Inc. offers competitive compensation packages that include:

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If you are interested in becoming a member of the Liberty Electronics team send your resume into HRLiberty@libertyelectronics.com
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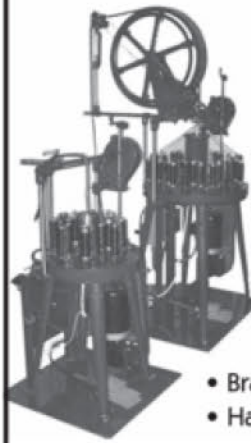
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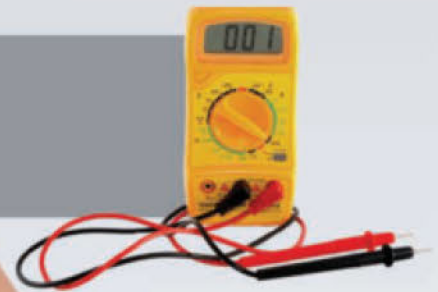
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