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Cable Connections

Treating every order and every customer as their best.

By Fred Noer

Cable Connections is positioning itself in the wiring harness and cable assembly industry, no one should be surprised to hear about the firm more often in 2010 and beyond.

Significant steps for growth were taken last year by the company, which manufactures custom harnesses and cables for a diverse array of markets and customers. The business is located in Lilburn, Ga., 18 miles northeast of downtown Atlanta.

Cable Connections is owned solely by Melvin Lancaster, 57, who has operated it since purchasing it in 1989. But, he has decided to pursue his interest in buying and selling real estate in addition as golf, tennis, hunting and fishing.

Last July Lancaster hired Scott Myers, 47, as president. He is responsible for the day-to-day operation of the company in addition to providing his expertise and experience in the sales and engineering departments.

"This is a transition period for Cable Connections," said Lancaster, who is continuing as CEO. "We're at the point where I don't want to waste a good recession. We are making a lot of moves to come out of this a stronger company."

"We were not affected as drastically as some companies by the recession," Lancaster said. "We planned for the downturn because three years ago we saw it coming. We're hopeful that the economy is now on the upswing. I hope I'm right."

Because of his background, Myers will make a substantial impact on the company. After receiving a degree in

Call for Technical Presentations

Technical presentations are being solicited for seminars on new wire processing technology by Expo Productions, Inc., the producer of the Electrical Wire Processing Technology Expo. The show features a dedicated seminar area for the presentation of technical topics of interest to the wire harness industry. There is no additional charge for either attendees or exhibitors to attend the seminars after admission to the show.

The 10th annual Wire Processing Expo will be held on Wednesday, May 12 and Thursday, May 13, 2010, at the Midwest Airlines Center in Milwaukee, Wis. It is tailored expressly for those in the electrical wire and cable processing industry. Attendees are decision-makers that design, specify, purchase, install, sell, maintain or manufacture wire processing equipment and accessories.

As technology rapidly changes in the wire processing industry, the Wire Pro-

cessing Expo seeks presentations that will encompass all industry capabilities and/or applications. "Our timely, topical seminars make it easy to cross the finish wire ahead of the competition," said Jay Partington, president of Expo Productions.

For the first time, the National Electrical Wire Processing Technology Expo and the Wire Association International (WAI) Wire Expo will co-locate on the 2010 show dates. "With two wirefocused shows under one roof, we know there will be more technology for wire professionals to see," said Partington. "We're looking for seminar subjects that can cross over to either group."

In order to be considered as a seminar presenter, a short abstract of the topic along with an outline must be submitted to Jill Smart, seminar coordinator

____Continued on page 14



Front to rear: Scott Myers- President, Don Allen- Vice-president, Melvin Lancaster- (retiring) CEO.

electronic engineering, he began his career in the harness and cable industry 25 years ago with Belden in Gastonia, N.C. He eventually served as a lead man and production manager for the company.

Myers next worked for Cablelink, a subsidiary of Robinson Nugent Connector Co., in Kings Mountain, N.C. He began with the firm in 1988 and moved to a Silicon Valley facility in 1992. Three years later he became president of the \$15 million company, and he helped to open plants in Mexico and Malaysia.

Acquisition by 3M prompted Myers

to leave Cablelink in 2000. In April of the next year he cofounded Interconnect Solutions Inc. (ISI) in Santa Ana, Calif. After an initial investment of \$300,000, the company turned a profit in 2002 on sales of \$514,000. Just four years later they jumped more than tenfold to \$6.1 million.

Such success earned ISI a No. 226 ranking on the Entrepreneur magazine Hot 500 Fastest-Growing Companies list in 2007. Myers, who was the general manager, said in 2008 the publication

Continued on page 4

Reinventing the Manufacturing Industry

By Paul Hogendoorn

Imagine

...If an operator knew when a production process was unstable and fixed it immediately.

...If a machine automatically shut off or alerted someone when there was a setup error.

...If an error could be predicted before it even happened.

Every so often a technological breakthrough reinvents the way manufacturing is done. We introduced the assembly line in the early 1900's which permitted mass production of products at a fraction of the cost; we had the invention of robotics in the mid 20th century which assured accurate and reliable performance levels at increased speeds; and now we have process monitoring systems, an advanced technology which will again reinvent this age old industry.

Process monitoring systems, technically referred to as <u>Process Variation</u> <u>Monitoring</u> (PVM) is a true paradigm shift in technology for the manufacturing industry. PVM devices are putting the emphasis on refining and improving the

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<u>Issue</u>

2010 Production Schedule

Reservations Due Date

March/April 2010	February 5, 2010	February 12, 2010
May/June 2010	April 2, 2010	April 9, 2010
July/August 2010	June 4, 2010	June 11, 2010
September/October 2010	August 6, 2010	August 13, 2010
November/December 2010	October 1, 2010	October 8, 2010

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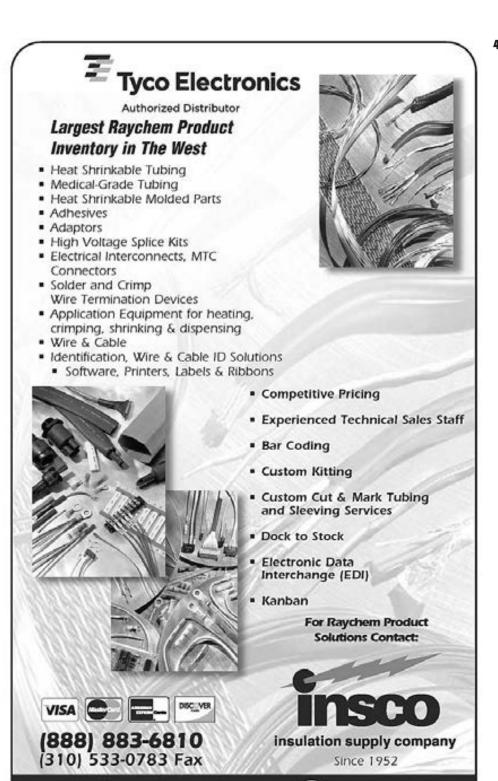
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Cable Connections

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placed ISI at No. 76 on a Hot 100 compilation at \$7 million in sales.

Myers left ISI to join Cable Connections, enabling him to return to the South and to be closer to family members. "This is perfect for me," he said. "What I will be doing is a continuation of what Melvin has built. This is a strong company because it has very diverse customers and a work force with a low turnover. The fact we are debt-free and financially sounds speaks volumes for how this company operates."

One of Myers' goals is \$10 million in sales in three years. Revenue has been flat the last two years after considerable growth boosted the firm past \$5 million. As perspective, sales were less than \$100,000 when Lancaster bought the company 20 years ago.

"We have always had controlled growth that is long term, slow and consistent," Lancaster said. "Uncontrolled growth is a bad thing for any company. Over the years we have turned down more opportunities than we have taken

_Continued on page 6



The custom waterfall and koi pond in Cable Connections reception area was featured in Southern Living magazine.

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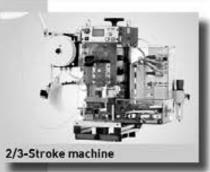
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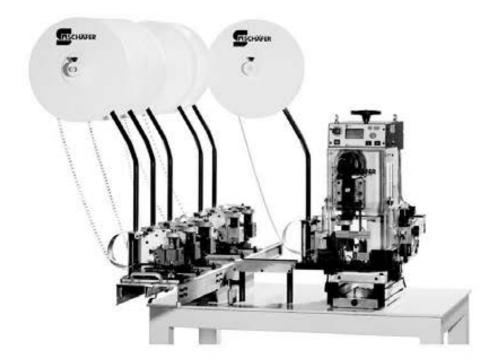












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Cable Connections

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because we did not want to allow any customer to dictate what we would do day in and day out."

Growth under Myers' guidance will occur not only by maintaining relationships with the firm's 250 active customers but by exploring the acquisition of other companies similar to Cable Connections. "We're serious about growing," he said.

That seriousness is reflected in the company partnering with one in the Chinese city of Dongguan in the Guangdong province to have low-cost, highvolume cables made there. During his ISI stint Myers spent 2-3 months a year in China over five years.

"We're already engaged in programs in offshore manufacturing," he said. "It gives us options so Cable Connections is competitive at any volume and any level of complexity. We control the bill of material and have the products built to the same level of quality as in the United States."

Half of the company's business is with companies in military and medical markets. Among the firms are Gener-

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Nu Pham shrinks tubing on a robotics cable.

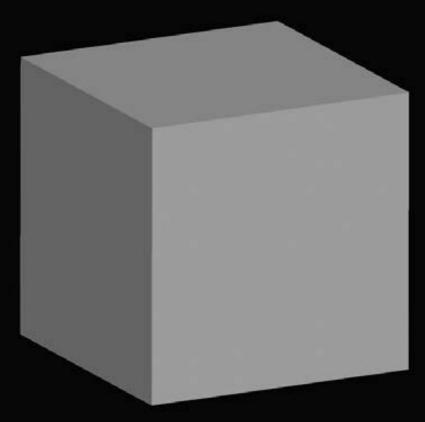
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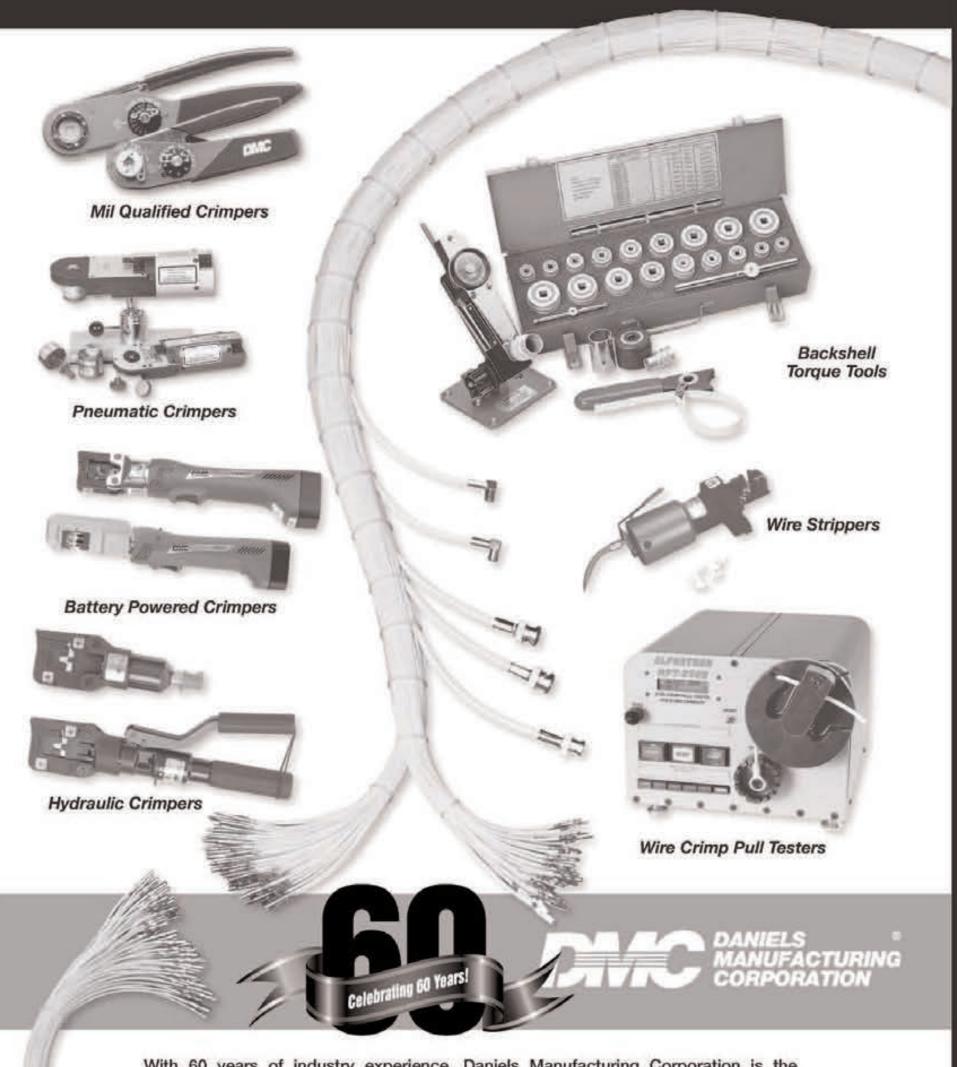
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Cable Connections

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al Dynamics, Boeing, Harris, Northrup Grumman and Lockheed. The other half is spread over the following markets: communication, robotics, industrial equipment, gaming, transportation, computer, utility, automation, power management, aerospace, marine and environmental.

Diversity also is found in the types of cables and harnesses, their materials and components: analog, digital, audio, video, coaxial, coil cord, ferrite bead, molded, USB, plenum, FireWire, network, power cord, DIN and mini DIN

connector, ribbon and micro-miniature connector. Electromechanical assemblies and items for black boxes also are

The simplest product is a one-inch jumper wire with one termination. The most complex harness is 100 feet long with 100 connectors. Product cost is between 30 cents and \$6,000.

Among product applications, Cable Connections manufactured video-transmission cables for video equipment used to record images of the submerged Titanic wreckage. Besides producing cables for U.S. Postal Service mail-sorting



Maria Dulling inspects incoming material to be certain it is correct before using.



equipment, the firm makes cables for guidance systems in the noses of military missiles and for systems enabling commercial jets to land on autopilot.

According to Myers, all products are manufactured according to various quality certifications. They include Mil-I-45208 as certified to by General Dynamics, IPC/WHMA A-620 and ISO2001:2008. Certification for the latter took effect this month. He noted that the return rate approaches Six Sigma performance, the internal yield is in the upper 99th percentile, and the scrap rate is less than .75 percent.

While the average production run is 50-150 pieces, Cable Connections will

produce just one item or 20,000. An order may cost less than \$100 or up to \$500,000. "We treat every order and every customer as our best order," Lancaster said.

The markets and products are broad because "the discipline to assemble products is the same regardless of the market," Myers said. "You have to provide a good value proposition to your customers. The key for us is to always remain very service-oriented and build relationships."

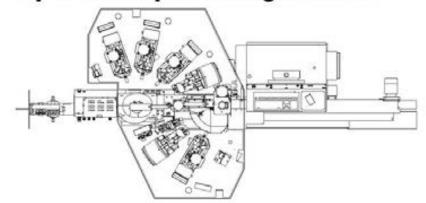
Most of the firm's 250 active customers in 2009 were repeat, and some

_Continued on page 10



Hanh Nguyen tests cables for a medical bed application.

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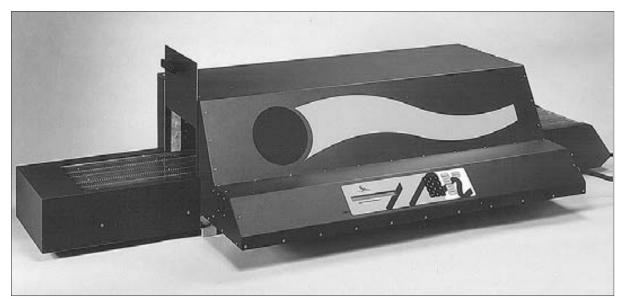
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Cable Connections

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have been with Cable Connections for 20 years. "We have not actively gone out to seek new customers," he said. "They come to us through word of mouth and people changing jobs." Customers are concentrated in the Southeast, but shipments are made to all states, Canada, South America and Europe.

Customers also have found the company through the Internet. This year additional independent sales reps will be hired to complement the in-house sales department headed by Sales Manager Jean Arnold. Holding active roles with organizations such as Women in Electronics and SMTA, Jean joined Cable Connections in 1996.

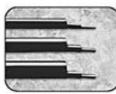
The other main departments are engineering, led by company vice president Don Allen, an 18 year veteran of (Tyco) AMP with an additional 13 years of executive leadership roles in the cable assembly industry prior to joining Cable Connections in 2003. "Don Allen's background brings a wealth of technical interconnect knowledge to Cable Connections. He is a great resource for our staff and for our customers" said Myers.

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Quality Supervisor Cam Van Tran checks out a prototype cable.

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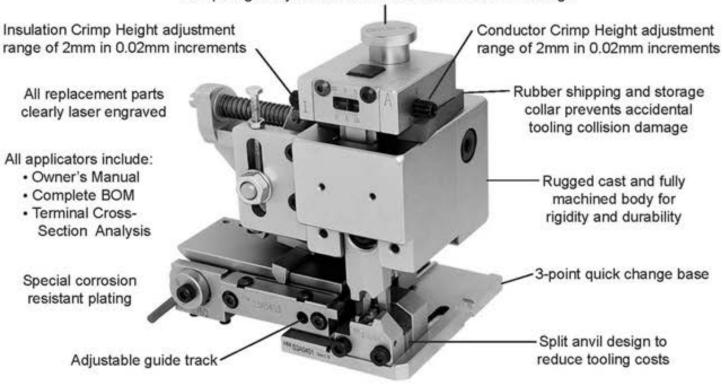
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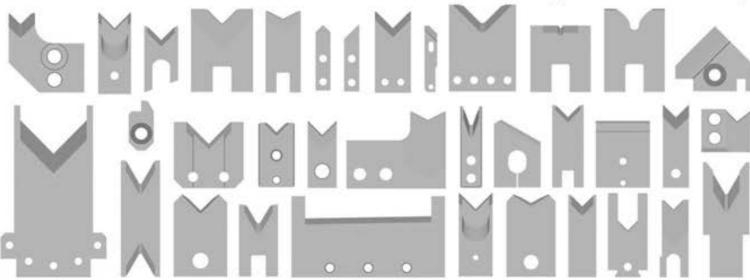


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Cable Connections

Continued from page 10 ____



Document control manager Wanda Shields, always with documents inhand.

manager Barry Patrick. Another veteran of the cable assembly and contract manufacturing industries, Barry oversees 30 employees, 65 percent of the total company staff of 45, with the balance of staff in office and administrative positions.

Lancaster stated the staff number is at its highest, and additional hiring is anticipated as the company grows. He said "we are proud of the fact that we have never laid off any employee in our 20-

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year history of the Company". Everyone is paid a standard compensation package, with management receiving a percentage of gross profit based on performance.

Employees average 47 years old and have been with the company an average of 13 years. "Our biggest asset is our people," Lancaster said. "I would put my people against any company in the industry. They are a mature, long-term group, and customers appreciate the wealth of knowledge we offer."

Valuable information also is contained in a customized, proprietary computer program with a database of all customers and their products. Therefore, a customer easily can be informed about the status of a product at any point of the development, design, engineering, production and shipping processes.

The program, which underwent a \$75,000 upgrade last year, was developed over the last 10 years. "It is very tightly wrapped around the process of serving customers," Myers said. "It allows us to respond more quickly and effectively than others in the industry. The upgrade, based on an SQL database, provided for more users and more manipulation of the information."

Cable Connections has been housed since 2002 in a 10,000-square-foot building owned by Lancaster. The previous 12 years the company was in an 8,000-square-foot building in nearby Tucker,





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Ga. During the first year of Lancaster's ownership the company was in a 4,000square-foot structure in Snellville, Ga., also close by.

Lancaster bought the firm from founders Darwin and Sharon Niemcehk, who started it in their Snellville basement in 1988. Prior to his purchase Lancaster worked 10 years as the eastern

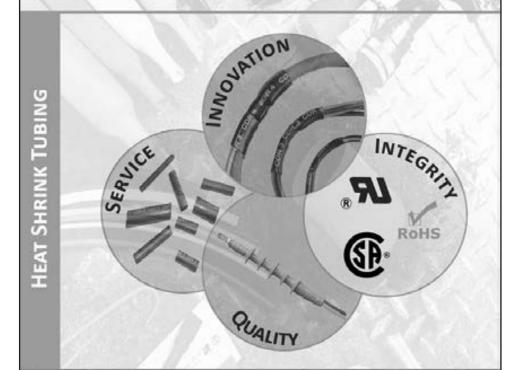
regional manager for Koppers Inc., a steel company in Pittsburgh, Pa. His career also included sales, design and engineering positions with Southern Engineering and Duke Power in Charlotte, N.C.

Since Lancaster has stepped back from direct involvement in Cable Connections, Myers has been given a major



Kieu Linh Khuong applies mounting brackets to a medical cable.





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Cable Connections

Continued from page 13 ___

opportunity to grow the firm. He is enjoying his work. "Our products are often tied to the most exciting and stateof-the-art equipment, tools and weaponry," he said. "We stay abreast of technology and are involved in exciting applica-

"I love this business, and I love to solve problems," Myers said. "A problem is only the next challenge. You always have to provide a good value proposition to the customer.

"The market has changed radically

since 9-11 and the telecom crash," Myers said. "Many tier2 and tier 3 EMS providers emerged opening new markets to support contract manufacturing. There are plenty of people out there doing cable assemblies, but very few of them are operating with our offering and with our level of dependability and expertise."

For more information, call 800-233-1603 or 770-381-8381, fax 770-770-8321, e-mail info@cable-connections. com, visit www.cable-connections.com or write to 4350 Webb Pkwy., Lilburn, GA 30047.

Technical Presentations

Continued from page 1

of the National Electrical Wire Processing Technology Expo, c/o Expo Productions, Inc., 510 Hartbrook Dr., Hartland, WI 53029.

Submissions can be mailed to EPI, faxed to them at 262-367-9956, or emailed to jill@epishows.com.

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Data Connectors from Mil-Con

Mil-Con Offers New Data Connectors

Mil-Con, Inc. introduces a new series of Data Connectors to its product line. Designed to meet harsh environmental requirements where high thermal and corrosion resistance is imperative, Mil-Con's

Data Connectors provide superior performance, reliability, and secure data communications throughout the products' life cycle. Utilizing spring-loaded contacts, mating connectors can be significantly misaligned without impacting performance. A spring probe system houses individual touchpad contact areas which enable an effective electrical engagement point of contact. The individual touchpad contacts do not contain crevices, thus preventing contaminant accumulation; a desirable feature in critical field conditions. Spring probe contact systems can be a superior solution for ensuring high performance in critical operations requiring high reliability connectors. Manufactured in the United States with the ability to be produced in Mexico for additional cost savings. Features to note: • Meet a minimum of 1 meter immersion. (Contact factory for 20 meter immersion applications). • Polarized mating. • Capable of supporting up to CAT5 data transfer rates. • Available in filtered and non-filtered versions. • Available in rectangular and custom cylindrical variations. • Simple and quick coupling. • Highly reliable. Mil-Con's Data Connectors are ideal for: data transfer devices, detachable equipment, encryption devices, handheld radios, and HMI devices. For more information, please contact Mil-Con, Inc. at (630) 595-2366. www.mil-coninc.com

New Deutsch Industrial Electrical Contacts

LADD Industries is pleased to announce the addition of nickel plated

size 20 contacts engineered to accept 16-18 awg to the Deutsch Industrial Common Contact system. The new nickel plated contacts offer a lower cost alternative to the gold contacts currently available, and expand the range of Deutsch connector options for applications where 16-18 awg is required The new contacts, manufactured from solid copper alloy with nickel plating and a stainless steel retainer sleeve, are designed for heavyduty use, high mating cycles, and offer easy field service with standard Deutsch crimp and removal tools. The solid barrel crimp style pins and sockets are rated at 7.5 amps each, and meet all standard Deutsch Industrial specifications. These contacts are designed for use in all Deutsch Industrial con-

nector series including the DTM,

HD, HDP, DRC and DRB series.

Deutsch Industrial builds heavyduty connectors that are ideal for harsh environments where dust, dirt, moisture or rough terrain can contaminate or damage electrical connections.



Nickel Plated Contacts

Contact LADD Industries, your exclusive authorized US distributor for Deutsch Industrial products, at 1-800-223-1236 for more information on the new size 20 nickel plated contacts.



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BT 3500 Battery-Hydraulic Hand Tool

More Than a Ton of Portable Power in a 1.4 Pound Hand Tool

Tyco Electronics introduces the BT 3500 Battery Hydraulic Hand Tool!

The BT 3500 Battery-Hydraulic Hand Tool is designed to provide the ultimate in flexibility, modularity, and powered efficiency in a lightweight, ergonomic, powerful crimp unit. It's compatible with SDE dies and CERTI-CRIMP II heads, using the appropriate adapters.

Finally, a lightweight tool that delivers the power required for crimping! The small head offers incredible flexibility and the ability to reach into tight spaces. As an added convenience, the crimping head can be rotated to nearly any angle, allowing the operator to identify the most comfortable position for the job.

Despite the lightweight of the power unit, the tool can produce over 200 10 AWG crimps between charges. This is made possible through a ten ounce, 10.8 Volt Lithium-Ion battery that can re-charge in only 25 minutes, thereby giving plenty of time for production.

We are NOW accepting orders for the BT 3500 Battery-Hydraulic Hand Tool.

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NEWS PLUGS continued



Eraser's Offers the Model DCFV1 Magnet & Enamel Wire Stripper

Eraser's Model DCFV1 Magnet & Enamel Wire Stripper will strip round magnet and enamel wires with any type of film insulation including; Formvar, nylon, polythermaleze and varnish. The DCFV1 hand piece contains its own internal dust collection system which operates when the switch is depressed. The variable speed power unit controls the speed. Insulation is cleanly removed but the wire conductor is not damaged. This tool is ideal for the production and repair

stripping of armatures, coils, chokes, transformers, relays, solenoids and more.

The Eraser Company, Inc., celebrating its 99th anniversary in business, manufactures a wide range of industrial products including wire, cable and tubing cutters, wire and cable strippers, wire twisters, wire brush wheels, dereelers, infrared heating equipment, measuring tools, and fybRglass® erasers. The company is ISO 9001:2000 certified. The company offers Free E.S.P. (Eraser Sample Program). Send a 10-20 foot sample of your material and Eraser will recommend the best solution for your processing needs from its line of more than 200 products. For unique processing needs, Eraser will custom



Model DCFV1 Magnet & Enamel Wire Stripper

design a solution for you. For more information on Eraser's entire product line visit www.eraser.com or call 315-454-3237.

Industry's Smallest SMT Board-to-Board Connector

Molex Incorporated introduces its new Slim-Stack Board-to-Board series of connectors which have a 0.40mm pitch, 0.70mm mated height and 2.60mm width. The new connectors offer a better combination of overall space savings and reliable electrical contact than any similar versions in the marketplace today.

"Molex designed and developed the new Slim-Stack series to meet surging market demand for downsizing of mobile devices. The new miniature connectors offer about 25 percent space savings compared to many competitive 0.40mm pitch types," notes Joseph Falcone, Group Product Manager, Molex.

A unique set of features make the Molex SlimStack SMT board-to-board connectors ideal for use in mobile phones, PDAs, digital cameras, camcorders and other compact mobile devices. In addition to their ultra-low profile and narrow width, features and benefits of the new connectors include:

- Two-point contact design and 0.18mm wipe length for secure contact and reliable electrical performance
- Nickel-barrier plating to prevent solder flux intrusion
- Tactile click sound and feel to confirm secure mating
- Gold-plated terminals for durability over repeated cycling

The new SlimStack connector versions are available in 20-50 circuits and have four solder tabs on each mating side for secure PCB retention. The system is rated at 50 volts and 0.3 amps. In addition, the housing mold designs include a wide area to

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C551 Crimp x Crimp

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accommodate vacuum pick-and-place nozzles, which avoids the extra material and assembly costs of using vacuum tape.

Molex's SlimStack™ line of micro board-to-board connectors offers product designers a broad selection of choices and proven quality. To learn more about the new 0.70mm height and other miniature SlimStack SMT BTB connectors, visit www.molex.com/product/bb/slimstack04mm.html.

Phoenix Company Introduces Pi Filtered D-Sub Connectors

The Phoenix Company of Chicago introduces a new series of Pi Filtered D-Subminiature Connectors to its product line. Phoenix's Pi Filtered D-Subminiature Connectors provide an excellent method for electronic system interface and EMI/RFI filtering. Eliminating both conducted and radiated EMI/RFI; Pi Filtered D-Subs reduce cost and labor. Consult factory for additional configuration options such as: 3W3, 5W5, 8W8, and for capacitance values. Customer designs can also be supplied.



Pi Filtered D-Subminiature Connectors

Features to note:

- Excellent performance up to 10 GHz.
- Ideal for high-speed digital enclosure

applications

- Able to withstand high temperature reflow solder process
 - Right angle PC mount
 - Manufactured to Mil-Std-220

Phoenix's Pi Filtered D-Subminiature Connectors are ideal for: aerospace, commercial, industrial, medical (non-MRI uses), telecommunications, and test system applications. *Meet RoHS compliancy standards.

For more information, please contact The Phoenix Company of Chicago at (800) 323-9562. www.phoenixofchicago.com.

DIT-MCO International's New Model 2115 NetLink Supports Networking

DIT-MCO International recently released the Model 2115 NetLink providing networking connectivity for the bench-top automated wiring test system. The NetLink system simplifies connections, allows the controller and test hardware to be positioned farther apart on the test floor, and expands communication possibilities. It also gives test operations the ability to leverage their local area networks (LANs) to build a rich archive of test results.

With the new NetLink controller, the host PC connects directly to the test system through a standard Ethernet interface. Thus, any desktop or notebook computer becomes the test system controller. Alternatively, wireless control can be provided by integrating a Wi-Fi network.

DIT-MCO systems have always helped lower costs and reduce test cycle time. Networking takes productivity improve-

_Continued on page 24

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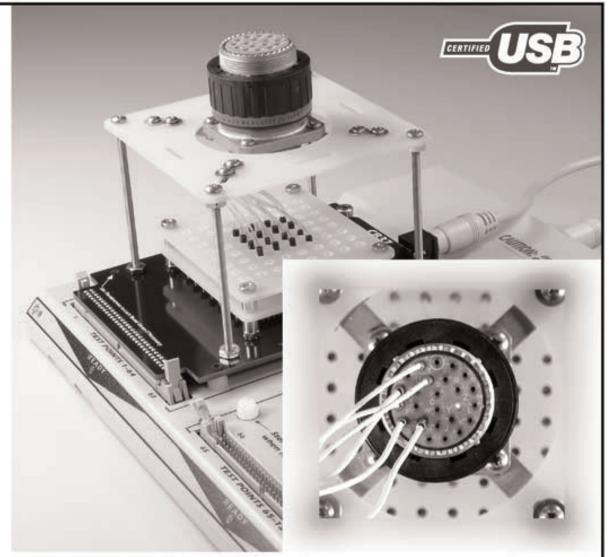
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Use this new, patented system to double your productivity* when assembling circular and rectangular connectors. The Light Director™ system uses light fibers driven by super-bright LED lamps to individually illuminate target cavities in the connector being assembled. When you enter the wire code printed on unconnected wires or touch a wire terminated at the other end, software turns on the appropriate fiber, thereby causing a bright, flashing light to project from inside the target cavity guiding you to the proper insertion point. Correct insertion is confirmed by the elimination of light from that location, whereas insertion into an incorrect cavity leaves the flashing light visible.

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 Scan wire code OR touch unconnected wire with probe or finger.

2 - Target cavity begins to flash. Computer also reads pin number in natural voice.

3 - Insert and lock pin in place. Light blocked to confirm insertion.

www.cableeye.com/LightDirector Tel: (800) 776-0414

*Field testing has shown a doubling of assembly speed while practically eliminating errors. Reduced worker fatigue using the Light Director permits more consistent production output throughout the work day.



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Reinventing the Manufacturing Industry

Continued from page 1

manufacturing process itself, and away from inspecting the finished part, as with traditional methods. This proactive methodology focuses on preventing errors, rather than detecting them after they occur.

With today's zero defect tolerance, manufacturers have to pay close attention to quality and have to be sure that they do not ship even one bad product to their customer. Doing the latter can result in expensive consequences such as being put on containment by the customer, a complete product recall, or worst of all, lost future contracts. At the very least, it results in increased costs and a diminished reputation. For these reasons, it is absolutely imperative that defective and sub-standard products do not make it out the door.

Measuring quality:

Until recently, companies had learned to rely solely on post production inspection methods and devices to detect any bad products before they might be shipped. This conventional practice followed the underlying assumption that a bad part can be produced at anytime and that catching these parts before they went out to customers was a priority. Little emphasis, if any, was put on the actual manufacturing process.

With the demand for quality hitting an all time high, progressive companies are shifting their focus by putting less emphasis on the inspection stages and more emphasis on refining and improving the manufacturing process itself. Their conviction is that it is impossible for a good process to produce a bad part, unless something in the process changes. This revolutionary attitude towards quality assurance is simple... monitor the process. This paradigm shift derives from a basic scientific principle: If all variables in a process are stable and constant, the outcome of the process will remain stable and constant as well.

Input variables	Strain	Output products
		ľ

Monitoring the process and fixing the problem at the source, before additional costs are incurred, is the most progressive way of ensuring quality assurance.

In many force-form manufacturing processes (including end-forming, tube bending, and wire crimping), it is known that anytime a constant or predicted force is used to modify a part, the strain that the machine experiences during that process is directly related to the resistance to that force. The resistance to that force is then any variable in the process and the strain is a measurable outcome of the process. "When the strain is no longer stable and constant, we know that a variable has changed and that the process is now capable of producing a faulty product" states Kiet Ngo, Director of Research and Development for OES Technologies and inventor behind *US patent #7,216,519 B1*, just one of seven patents held by OES. The patent proves that a sensitive and stable strain sensor, coupled to an intelligent analysis device, can provide an accurate and reliable indication of

The 'variables' in a process that might change and affect part quality could be the raw material, broken or worn tooling, machine deterioration, equipment failure, lack of lubrication, or even improper presentation of the raw material. If the 'outcome' is altered, then a variable in the process has to have changed. The task then becomes effectively monitoring the process in order to detect the critical changes (or variations) in that process.

For our North American based Tier 1 manufacturers, the challenge to succeed is even greater as foreign competition continues to affect the market. This innovative technology allows the continuous improvement of quality through process improvement, while reducing unnecessary costs from scrap material and/or downtime, thus helping this market remain competitive.

Early adopters and followers, as with <u>Centerline</u> in welding, are realizing the significance of this technology, focusing on the opportunity, sustainability, and profitability that comes with a paradigm shift of this nature. Some OEM companies, such as <u>Addison Mckee</u> in tube bending, are quickly supporting this movement by offering PVM products, while others are educating themselves in preparation for the majority acceptance.

When the fluid handling division of a Tier 1 company was experiencing process problems and potentially creating defective parts that may have lead to connection leaks, they deployed an OES monitoring system as a quality solution. The bad parts were being caught, but the cost of scrap material was getting expensive and solving the problem was critical. As a data driven organization with a strong commitment to operational excellence, finding the process problem and monitoring it thereafter, served as a huge cost saver.

Consider now the example of mandrel bending. Most bends are designed to be performed with a lubricated mandrel. If the lubrication is not present (automatic lubrication system failure or omission by the operator), it is quite possible that the product produced by

_Continued on page 20







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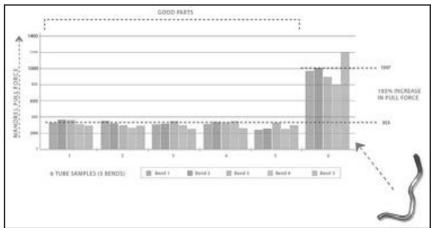
Reinventing the Manufacturing

Industry

Continued from page 18

the faulty process continues to meet the acceptable dimensional and visual criteria - for a while. After a few, or perhaps many bends, the mandrel is likely to break resulting in downtime for service. At that time, it is likely that the lubrication failure is discovered and only then rectified. The pipe in which the mandrel broke would (hopefully!) be identified and isolated, and the production would continue.

But what about the many pipes



prior to the breakage that were bent with a non-lubricated mandrel? The material in each of those bends was exposed to a far greater amount of strain than the process was designed to exert. Was the material stressed to near the breaking point? Will the affected exhaust pipes last one month, one year, or through the warranty period? This

> proves the strongest argument for process variation monitoring: even if the part looks good and passes dimensional and visual inspections, it is not necessarily a good part. Wouldn't it be more effective to monitor the process and control the variables at the source of production?

> PVM products allow the operator to set parameters (or tolerance levels) for deviation from the learned signature. This works to catch bad processes, but gives manufacturers control over their own quality standards. When a part has been made outside the tolerances of a known good process, the operator is alerted to make adjustments, and the situation is rectified well before a real

> cation, something in the process may change to the point that it is detectable but still minor and the process might still be producing good parts - but only for awhile. Sooner or later (and most likely sooner), the process will either produce a bad part or it will cause damage to the tooling or machine. With PVM technology, you now have an early warning system that alerts you of these conditions.

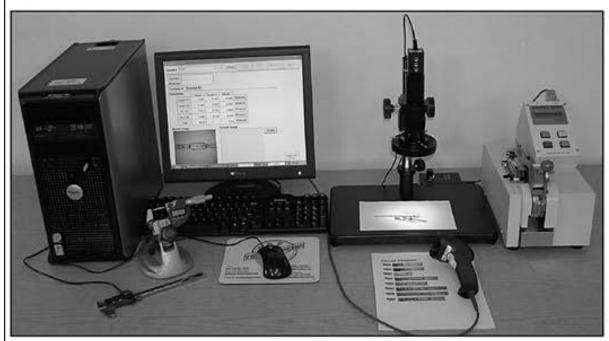
problem occurs. In a force forming appli-

The future of quality assurance:

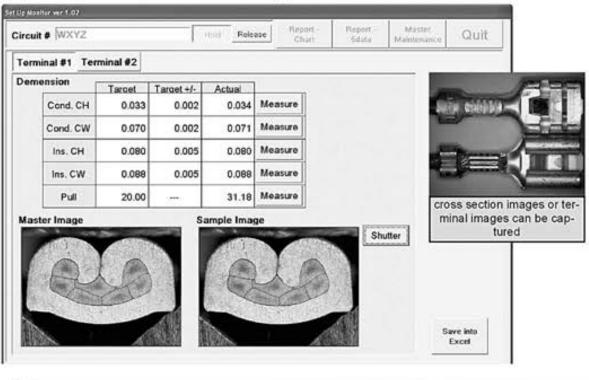
With stringent controls being placed on product quality in the automotive industry it is increasingly likely that production standards will require PVM technology.

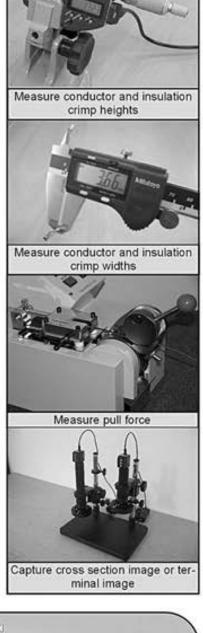
Process variation monitoring is a more efficient, reliable, more

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



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





Scan the circuit number, operator

number and machine number

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Continued on page 23





Crimping Applicators

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

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

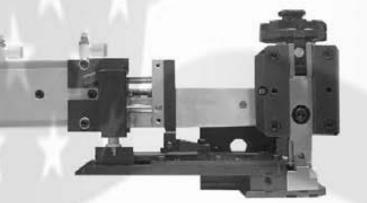




Model 1700

Model 2000

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

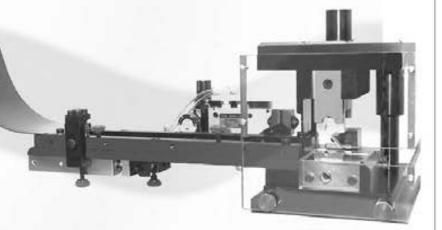




Model 1500

Model 2100

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

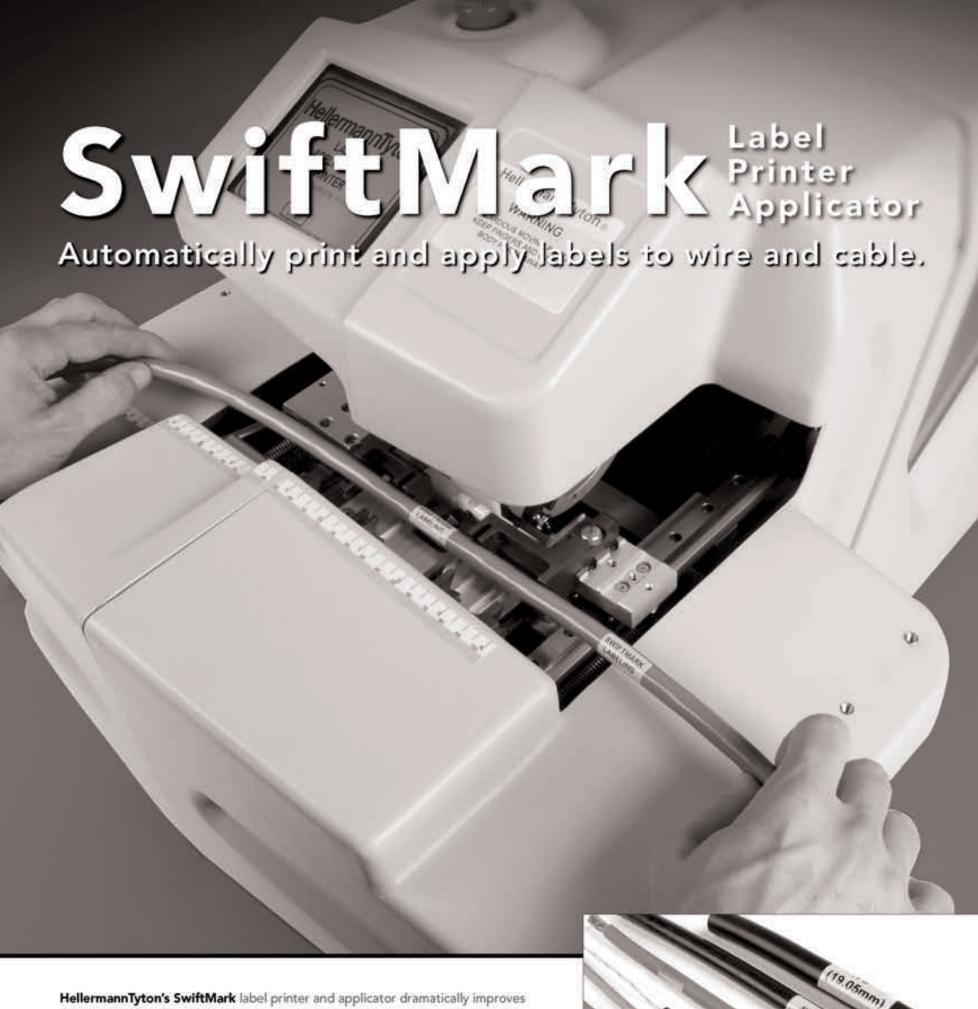


DSA Series

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

Give us a call at (401) 467-0007. Our business is applicators, not terminals, not wire, not connectors, etc., etc. It's our only business.

Visit our web site: www.applitek-usa.com



HellermannTyton's SwiftMark label printer and applicator dramatically improves productivity and quality by automating the label printing and application process. Just insert the wire or cable into the machine, step on the foot pedal, and produce expertly wrapped labels with extremely clear print quality.

PRODUCTIVITY -

Fast cycle time, up to 400% faster than manual application.

FLEXIBILITY -

Supports widest range of wire diameters. Prints and applies labels within ½" of the end of wire connector.

QUALITY -

Machine is durable and rugged. Produces highest quality printing and label wraps.

EFFICIENCY -

"Ribbon save" feature lowers consumable costs through reduced ribbon usage

SERVICE AND SUPPORT -

HellermannTyton offers unparalleled service and support through its solid infrastructure of technical systems experts.

The SwiftMark includes TagPrint Pro label printing software that allows complete control of data to the printer. Please see our site at: www.hellermann.tyton.com/whnews to view a demonstration video or for more information.



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SwiftMark

Reinventing the Manufacturing Industry

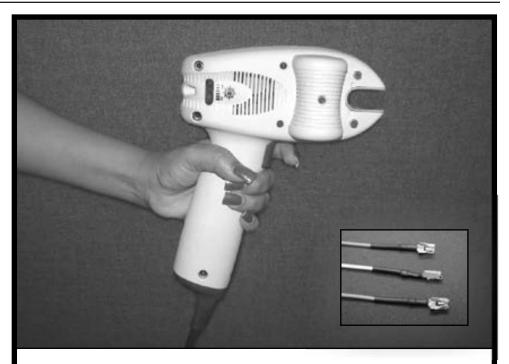
Continued from page 20

advanced, and more practical solution. The manufacturing industry shouldn't settle for mediocrity and chance unexpected costs anymore...because every so often a technological innovation reinvents the way we do business.

Paul Hogendoorn is president and co-founder of OES Inc, recipient of the 2008 Delphi Technology Pinnacle Award, celebrating its 30th anniversary in 2010. He is the past chair of the

London Region Manufacturing Council and a regular contributor to Manufacturing Automation magazine, the Tube and Pipe Journal and Quality Magazine. In recent years, he has written and spoken on the topic of process variation monitoring, drawing from his company's experience in a wide range of manufacturing applications. OES Technologies is a subsidiary of OES Inc. Paul Hogendoorn phogen-519.652.5833 doorn@oes-inc.com www.OEStechnologies.com





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

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

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

Here's why it works: Dual Quartz Halogen bulbs are focused to direct all of the usable radiant energy to the cable/wire diameter covered by shrink tube. This allows for 10 times the average energy expended by the bulbs to be delivered to

the target zone. What you will see is an amazing difference in shrink time!

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

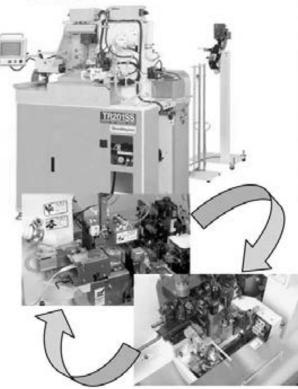


see our full line of Focus-Lite[™] products. Judco Manufacturing, Inc

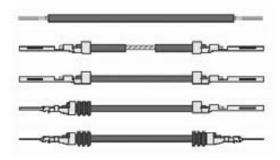
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- Quick Changeover
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NEWS PLUGS continued



Continued from page 17

ments to a new level. With NetLink, DIT-MCO test systems can share common network resources, such as file and print servers, across a LAN. Engineers can administer test systems from their offices or release test programs to a common file server.

Perhaps the most significant benefit is that networking offers a way to build a comprehensive database of test results. DIT-MCO's TestStats® software automatically captures raw test data and gives technicians a user-friendly, online screen to add detail about each fault. Data processing

provides yield, trend, and root cause analysis.

With NetLink, each DIT-MCO test system provides an Ethernet connection port using standard CAT-5 cable using TCP/IP for test control communication.

For wire harness test operations, the DIT-MCO Model 2115 NetLink simplifies connections, improves data collection, and makes the most of networked resources.

For further information visit www.ditmco.com

Mouser Expands Globally with Cooper Bussmann

Mouser Electronics, Inc., known for its rapid introduction of the newest products, announced the global expansion of its distribution agreement with Cooper Bussmann,

one of the world's largest producers of circuit protection devices.

The new agreement greatly increases Mouser's reach with Cooper Bussmann, from the Americas only to the worldwide stage, with a wide variety of Cooper Bussmann branded fuses and ESD suppressors, Coiltronics branded magnetic (inductors and transformers) and PowerStor branded coin cell and cylindrical supercapacitors. The global territorial expansion fits well into Mouser's strategy for expansion into the international market. In addition to branch locations in North America, Mouser has aggressively added customer service centers throughout Asia and Europe, in cities such as Shanghai, Hong Kong, Singapore, Munich, and most recently High Wycombe, UK. Along with their local customer service cen-

ters, Mouser offers 39 country specific websites with multiple languages and the ability to complete transactions in 22 different currencies.

"Expanding our relationship with Cooper Bussmann provides easy access to Cooper Bussmann's innovative products for our extensive global customer base," said Keith Privett, Mouser Vice President Interconnect, Electromechanical, Power, and Test. "As we continue to invest in local markets around the world; it is great that Cooper Bussmann views these investments as an opportunity for mutual growth."

Mouser Electronics' website with interactive online catalog is updated daily, and searches over 5 million products to locate over a million part numbers available for easy online purchase. Plus, downloadable data sheets, supplier-specific reference designs, application notes, technical design information and engineering tools.

Mouser Electronics, Inc. is an electronic component distributor, focused on the rapid introduction of new products and technologies to electronic design engineers. Mouser.com features more than a million products online from more than 400 manufacturers. For more information, visit http://www.mouser.com.

Cooper Bussmann, a division of Cooper Industries, is one of the world's largest producers of circuit protection devices to protect electrical, electronic and automotive systems from circuit overload. For more information, visit http://www.cooperbussmann.com/.









- Programmable servo motors
- Less maintenance
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- Up to two stations on each side
- WireStar® 2.5 user interface
- Versatile machine setup
- Two-ton terminal presses

Efficient Lead Preparation

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The Primo XLT offers value with a smaller footprint in a fully automatic wire processing machine. All automatic setup motions are servo motor controlled for precise wire feeding and positioning. Two process stations per side are available to perform a variety of operations including seal x seal. Two-ton terminal presses and 2m collection conveyor are standard. Other presses and collection systems are available.



Features and Capabilities

- Rotating head with 4-blade system
- Wire size range: 0.08 2.0 mm [12 40 AWG]
- Stripping length up to 13 mm (0.5 in)
- Adjustable diameter feed rate
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- Especially for Coax Cable
- Air nozzle for insulation blow out





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Schaefer Megomat USA, Inc.

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Schaefer tooling innovations since 1985 continue to broaden wire processing machine capabilities.

Sullins Connector Solutions and Heilind Electronics Renew Distribution Agreement

Sullins Connector Solutions, a leader in the design and manufacturing of RoHScompliant board level interconnect products, and Heilind Electronics, the world's largest distributor of interconnect products, announced the renewal of their distribution agreement. Under the terms of the new agreement, Heilind will continue to stock, distribute, and support the Sullins and Mirco Plastics portfolio of standard and custom edgecards, headers, bilevel and CompactPCITM connectors from its over 25 sales offices and distribution centers throughout the U.S., Canada and Mexico.

Sullins interconnects are quality engineered to meet the exact specifications of a wide range of consumer, commercial and industrial equipment. Notably included in Sullins' extensive product offering are full series of PCI Express® (PCIe) card edge connectors, Insulation Displacement Connectors (IDC), ruggedized double point card edge connectors, fully shrouded box headers and mates, and double-row male card edge connectors. Parts are commonly employed in high-temperature, high-cycle life environments including test and burn-in ovens, communication systems, process control, medical equipment, instrumentation, and automotive applications.

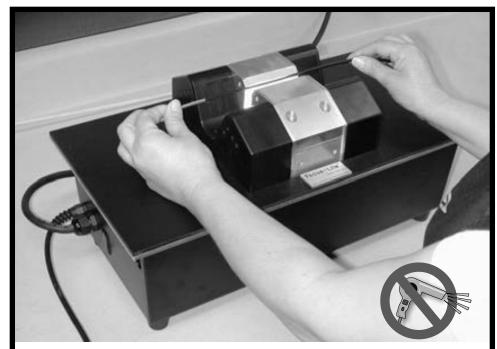
The company is uniquely capable of facilitating custom requirements, and offers a selection of such options as terminations, contact center dimensions, contact finishes, number of contact positions, mounting styles, and insulator/contact materials.

"Heilind is a best-in-class distributor that consistently delivers enhanced efficiencies," stated Wade Harb, CEO of Sullins. "Our OEM and design engineer customers significantly benefit from Heilind's expertise throughout every phase of the design and manufacturing cycle, and rely on their engineering competence as well as logistic and supply chain services. We look forward to continuing our strategic relationship with Heilind, and helping customers achieve their sales and profitability goals."

Alan Clapp, vice president - supplier business of Heilind, stated, "Sullins' extensive offering of quality connectors is a proven asset to our line card, and an ideal fit with our distribution model. Their ability to provide both standard and custom solutions supports our mission to accelerate customers' time-to-market while ensuring competitive pricing. By renewing our distribution agreement with Sullins, we reaffirm our commitment to maintain the world's largest inventory of high quality, innovative interconnect products."

About Sullins Connector Solutions (www.sullinscorp.com) has been a world leader in the design, engineering, and manufacturing of high-quality edge cards and headers since 1971. The Company provides the industry's widest selection of UL/CUL approved edgecards, and addi-

Continued on page 26



Save up to 80% of your labor cost on heat shrink operations

The Focus-Lite™ by Judco Manufacturing, Inc., is the solution to all your heat-shrink operations. You can say goodbye to the high labor cost, excessive heat, and inefficiencies of other methods. The Focus-Lite™ reduces the time necessary to shrink most types of heat shrink tubing. It also improves the process control and overall quality of your shrink operation. The **The Focus-Lite**[™] can be used for <u>high volume</u> bench top applications as well as low volume prototypes and laboratory applications.

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

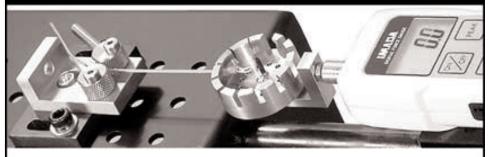
Here's why it works: Dual Quartz Halogen bulbs are focused to direct all of the usable radiant energy to the cable/wire diameter covered by shrink tube. This allows for 10 times the average energy expended by the bulbs to be delivered to the target zone. What you will see is an amazing difference in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

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

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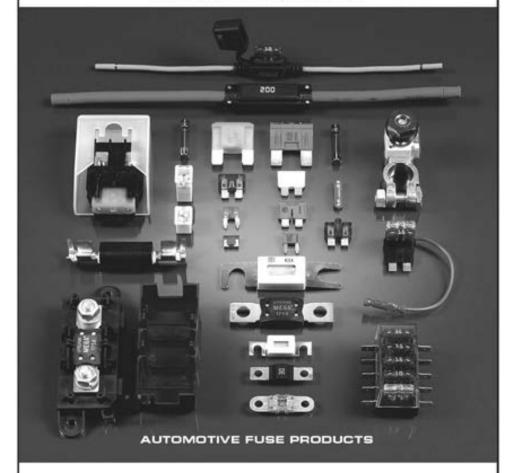
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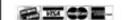


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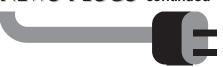
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NEWS PLUGS continued



Continued from page 25 ___

tionally offers product development services together with engineering support. Sullins' edgecards, headers, bi-level and CompactPCI connectors are widely specified for use in mission-critical applications by a broad spectrum of leading industrial,

commercial, military and consumer products manufacturers. Sullins' connectors and interconnect systems are available through a global network of sales representatives and distributors.

Heilind Electronics (www.heilind. com), with sales in excess of \$500 million, is a leading distributor connectors, relays and switched, thermal management, and circuit protection products, terminal blocks, wire and cable, wiring accessories, and insulation, as well as identification products. Heilind serves OEMs and

contract manufacturers in the medical devices and instrumentation, industrial controls and equipment, non-automotive transportation, aerospace and telecommunications markets. In addition to the world's largest interconnect inventory, Heilind offers a complete portfolio of innovative logistic and supply chain management services including automated inventory management and auto-replacement systems, on-line materials management tools and a full menu of electronic file sharing options.

Eraser to Display Products at 2010 MD&M West

The Eraser Company, Inc. is proud to be part of the MD&M (Medical Device & Manufacturing) West 2010 show scheduled for February 9th through February 11th in Anaheim, CA (booth #1662). This exciting show provides Eraser with the perfect venue for hands-on demonstration of their line of industrial grade medical (flexible) tubing cutters. Also on display will be Eraser's renowned wire and cable strippers, wire twisters and infrared heating equipment.

The Eraser Company, Inc., celebrating its 98th anniversary in business, manufactures a wide range of industrial products including wire, cable and tubing cutters, wire and cable strippers, wire twisters, wire brush wheels, dereelers, infrared heating equipment, measuring tools, and fybRglass® erasers. The company is ISO 9001:2000 certified. The company offers

Free E.S.P. (Eraser Sample Program). Send a 10-20 foot sample of your material and Eraser will recommend the best solution for your processing needs from its line of more than 200 products. For unique processing needs, Eraser will custom design a solution for you. For more information on Eraser's entire product line visit www.eraser.com or call 315-454-3237.

Cobra Wire & Cable, Inc. Announces Addition to Board of Directors

Cobra Wire & Cable, Inc. is proud to announce the addition of Richard L. Schwob to its Board of Directors. Schwob's career in telecommunication and electrical businesses spans many years with companies like Marconi, formally RELTEC, and Burndy Corporation.

Schwob, while at Marconi, was responsible for the overall sales and field efforts supporting the company's \$1.4B Network Components and Services business in North America. Schwob held various positions with Burndy Corporation including Vice President of Marketing and Sales, as well as Vice President? General Manager. Schwob, as Vice President? General Manager for the Power and OSP business units at RELTEC, had responsibility for the organization's overall strategic direction.

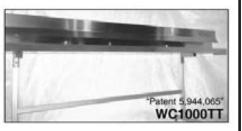
Additionally, he had responsibility for the Mexican operations and the development of RELTEC's Power and OSP busi-

_Continued on page 28





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- Designed to collect wires up to 12 feet in length
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- Height adjustable from 24 to 42 inches
- Standard Collector lengths (WC 1000 TT - 10 FT.) (WC 500 TT - 5 FT.)

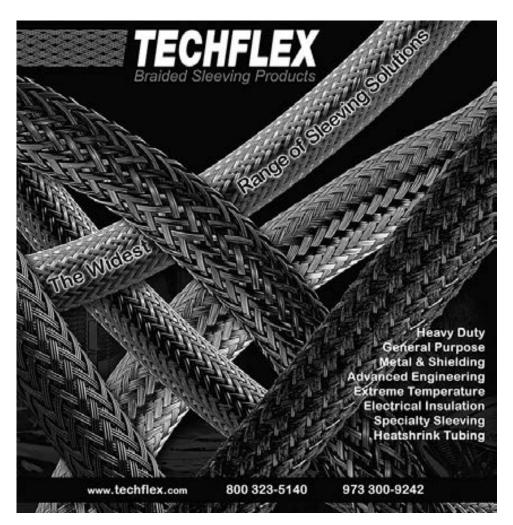
CONTACT US TO DISCUSS YOUR WIRE CUTTING NEEDS!

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The Eraser Company Inc., will be displaying these products at the MD&M (Medical Device and Manufacturing) Show February 9-11 - Booth #1662



Mecal Tooling Sentry The easy way to the ISO TS 16949



IMPROVE YOUR QUALITY!
REDUCE YOUR COST!

PROVE YOUR CUSTOMER THEY CAN TRUST YOUR QUALITY PRODUCTION!

USE THE TOOLING SENTRY AS A COMPETITIVE ADVANTAGE!

THE TOOLING SENTRY IS A QUALITY MANAGEMENT SYSTEM BUILT ROUND THE SENTRY MODULE (ATTACH TO THE CRIMP PRESS) AND THE ADM (BUILT INTO THE CRIMPING APPLICATOR)

PARTICULAR, THE ADM IS A MEMORY DEVICE WHICH IS INTERCHANGEABLE TO THE TRADITIONAL MECHANIC COUNTER. THE ADM DOES NOT NEED ANY ADDITIONAL COMPONENT TO WORK AND REPRESENTS THE ENTRY LEVEL CONFIGURATION

THE TOLING SENTRY PROVIDES THE FOLLOWING:

- □ ASSURES THE TOTAL COMPLIANCE TO THE ISO TS 16949 REGARDING PREVENTIVE AND PREDICTIVE MAINTENANCE
- □ ASSURES THE TOTAL COMPLIANCE TO THE ISO TS 16949 REGARDING MANAGEMENT OF PRODUCTION TOOLING
- □ APPLIES TO ANY TOOLING OR COMPONENT MANUFACTURER
- ANY MAINTENANCE CONCERN IS ANSWERED BY CONNECTING THE USB WIRE OF THE APPLICATOR TO THE PC. BOM AND CRIMP SPECS ARE AVAILABLE IN THE APPLICATORE DATA MODULE (ADM). YOU GET THE RIGHT PART AND THE RIGHT INFO STRAIGHTAWAY
- ☐ THE STATUS AND HYSTORY OF EACH TOOL IS AVAILABLE ON A GLOBAL INTERNET DATA BASE IN REAL TIME. REPORTS ARE GENERATED AUTOMATICALLY
- ☐ IMPROVES PRODUCTION QUALITY OVERWORKED TOOLS ARE REJECTED AT THE POINT OF USE
- □ FOR-WARNING OF PREVENTIVE MAINTENANCE TOOLING INSPECTION AND REPLACEMENT
- □ INCREASES YOUR CONFIDENCE AND CONTROL OVER YOUR TOOLING INVENTORY
- ☐ TREACEABILITY OF ALL APPLICATORS

IMPLEMENT THE SENTRY SYSTEM AND YOU WILL IMPROVE:

- □ THE SERVICE LIFE OF YOUR APPLICATORS AND THE RELIABILITY OF YOUR EQUIPMENTS
- □ THE QUALITY OF YOUR CRIMPS
- □ THE BASIC WORK SYSTEM, SUCH AS PLANNING THE PREVENTIVE MAINTENANCE, THE TECHNICAL DATABASE, THE STORE
- □ THE COST OF YOUR TOOLING STOCK AND MAINTENANCE. THE COST OF DOWN TIME AND THE PRODUCTION EFFICIENCY

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NEWS PLUGS continued



Continued from page 26

nesses in mainland China, with headquarters in Beijing and Shanghai.

Schwob holds a Bachelor of Science degree from Drake University and is a graduate of the Advanced Management Program at the Harvard Graduate School of Business. He has served on the Board of Directors for the Alliance for Telecommunications Industry Solutions, RELTEC Beijing and RELTEC Shanghai, as well as other esteemed companies.

Schwob served as an Advisory Board Member for the International Engineering Consortium. Cobra Wire and Cable, Inc., with headquarters in Hatboro, Pennsylvania, operates as an independent producer of insulated wire and cable products, and related items. With active sales in all industrial continents of the world, Cobra is committed to continued growth and product development in various industries, ranging from telecommunications and solar power to marine and medical.

Halogen-Free, UL 62 Certified Materials for AC Power Cords

SABIC Innovative Plastics' flame-retardant (FR) Flexible Noryl* resin has achieved a major milestone as one of the first non-halogenated materials to be used in AC power cords meeting stringent Underwriters Laboratories (UL) 62 TPE 90C and 105C safety standards.

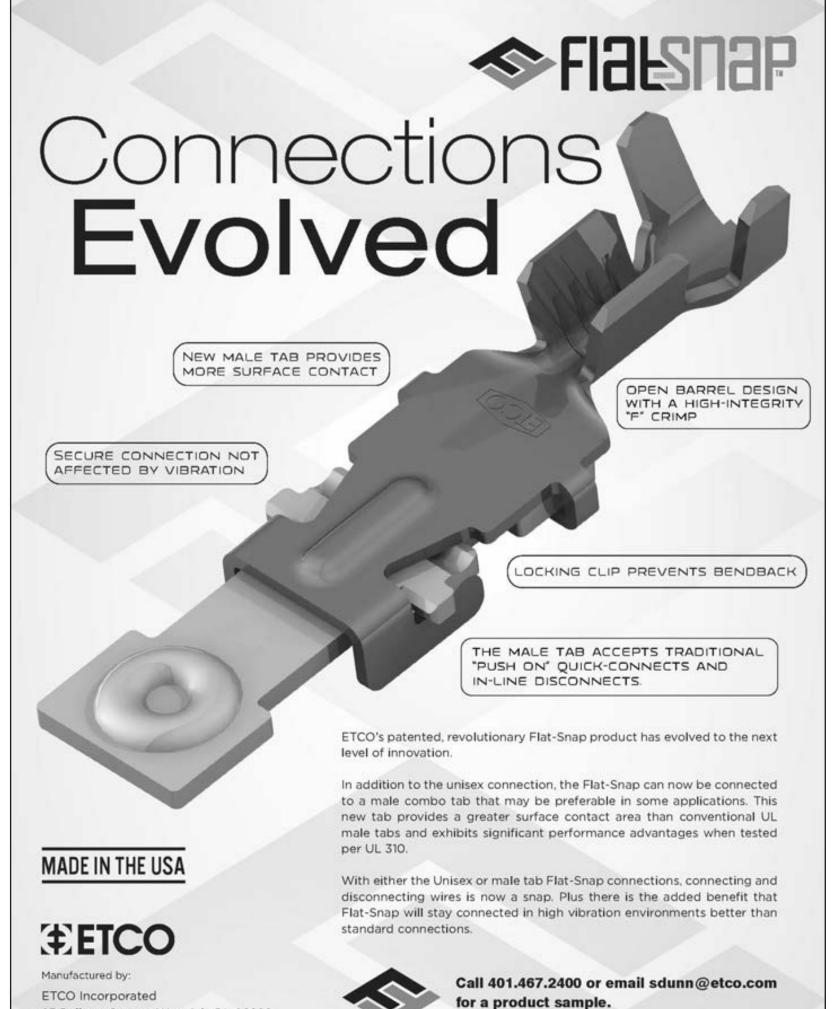
Available in three specialized grades for different AC power cord configurations, the new material provides outstanding FR performance that meets global environmental regulations and delivers excellent flexibility with a high-quality surface finish. SABIC Innovative Plastics' Flexible Noryl resin is a premier product technology developed to help wire and cable customers achieve their environmental sustainability goals, differentiate their products, and create reliable, high-performance power cord solutions.

"Global demand for environmental stewardship is especially strong in the electrical and electronics industry where global OEMs are pushing AC power cord manufacturers to deliver top-performing products that are highly efficient, cost effective, safe

and compliant with increasingly tough requirements for PVC, phthalate, and halogen-free cable systems," said Cathleen Hess, Noryl resin product marketing director, SABIC Innovative Plastics. "We focused our world-class technological expertise on developing our Flexible Noryl resin grades that can meet these requirements and deliver the insulation and jacketing performance our customers need to stay ahead of regulatory changes and remove barriers to worldwide growth."

Supporting Flexible Noryl resin cable's UL 62 TPE 90C and 105C certification, Flexible Noryl resin has been successfully proven in the Japanese market in AC power cords meeting Den-An-Ho legal requirements. SABIC Innovative Plastics is currently working with customers to achieve certification under the European Union's VDE HD 21.14 standard.

I-Sheng, a Taiwan wire and cable manufacturer, recently applied for the UL 62 90C and 105C certificates for several types of AC power cords. Mr. Bob Wang, executive vice president for I-Sheng, said, "We have been successfully using Flexible Noryl resins for AC power cords in Japan for some time. Based on our excellent experience with these materials, we expect great results from the United States as well. These high-performance materials give us a strong competitive advantage across multiple market segments to help our clients achieve their manufacturing and environmental sustainability goals."



Foxconn, also based in Taiwan, is a major supplier to the computer, communication and consumer (3C) electronics industries. "Foxconn is a longstanding user of Flexible Noryl resin for USB cable and hook up wiring, and we've been impressed by its robust, non-halogen FR performance," said Mr. Caesar Chen, senior vice president of Foxconn Group. "We are very pleased that Flexible Noryl resin meets all of our AC power cord requirements so we can give our customers the support they need to create high-end products that also address environmental concerns. It is a major win for everyone involved."

The three Flexible Noryl resin grades are designed to meet the specific requirements of different AC power cord configurations:

- With a 79 Shore A hardness, this grade is engineered for jacketing of NISPE, SVE and SJE cords. It offers excellent resistance to heat deformation and tensile elongation. To ensure a high-quality jacket surface, the material does not migrate.
- With a Shore A hardness of 85, this grade is designed for SPE power cord jacketing. It also offers non-migration and outstanding mechanical and heat performance.
- For AC power cord insulation, this grade has a Shore A hardness of 91. It is suitable for all con-

figurations, and offers the same performance benefits as the other two grades.

For additional information on SABIC Innovative Plastics' Flexible Noryl resin, please go to www.sabic-ip.com.

Heyco Products Introduces Solar Masthead™ Cordgrips

Heyco Products, Inc., a leading ISO 9001:2000 US-based designer and manufacturer of wire protection products and electronic components, has announced availability of their new Solar Masthead™ Cordgrips for solar installers and integrators.



Solar Masthead $^{\text{TM}}$ Cordgrips

Less expensive, easier to install, and more aesthetically pleasing than rooftop combiner boxes, the Masthead™ Cordgrips are threaded into an adapter that allows the cordgrips to be attached directly to rigid (PVC) or EMT type conduit

Constructed of UV resistant nylon with TPE or Buna N sealing

gland, the cordgrips provide a watertight seal for PV module output leads to inverters. Generous wrenching flats allow for ease of assembly, no disassembly is required for installation, and NPT threads easily assemble into schedule 40 fittings.

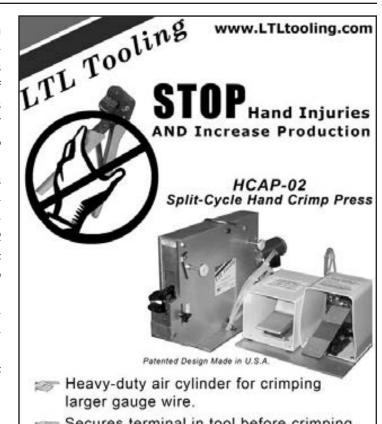
Solar Masthead™ Cordgrips resist salt water, weak acids, gasoline, alcohol, oil, grease, and common solvents, are IP68 and 94V-2 flammability rated, and handle temperatures from -22°F (-30°C) to 212°F (100°C).

For FREE samples or product literature, call toll free 1-800-526-4182, Fax: 1-800-358-7904, e-mail: sales@heyco.com or visit website at www.heyco.com.

Molex Receives Prestigious Ford Motor Company Q1

Molex Inc. announced that its Dongguan, China facility was presented with the Ford Motor Company's Q1 Award, its highest recognition for supplier quality and service. On November 5, the Ford Q1 plaque and flag were presented to the Dongguan cable team by Steve Tong, senior manager, Ford STA. Molex provides Ford with HSAutoLink™ cable assemblies and Customer Convenience Ports for vehicle infotainment and networking systems.

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Secures terminal in tool before crimping.

so 30 second tool change-over.

Use your existing hand tools.

Three (3) FREE tool modifications with each HCAP-02 or HCAP-01 purchase.

(You can use tool by hand or in press with the modification)

Same Day turn-around on tool modification.



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Also available: The HCAP-01 Many of the benefits of the split cycle (HCAP-02) at an economical value.... including speed controller.

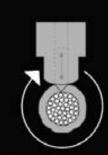
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When Armando Zacarias goes out on a Eubanks service call, unusual things happen.

"Once I helped round up a cow that got loose in a customer's plant.

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

Customers report something unusual too: Mando's "can-do" attitude.

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

"Can't be done" is not in Mando's vocabulary—either English or Spanish.
On his own initiative, he solves problems, leads training classes, helps boost plant

efficiencies, and makes lasting friendships while doing it.

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

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NEWS PLUGS continued

Continued from page 29

"The Ford Q1 Award is a testament to our commitment to providing high quality products and service so that our customers can be more successful," said KH Mak, Molex vice president of operations, east, integrated products division. "We are extremely proud to be recognized by Ford and feel honored to display the Q1 flag at the Dongguan facility,"

Ford, which established the global Q1 quality system to guarantee high standards from its suppliers, evaluates several key categories:

- System capabilities, including third-party certifications such as QS-9000, TS 16949,
- Ongoing performance history with Ford
- Site assessment, including the supplier's manufacturing process and customer satisfaction ratings
- Endorsements from customers to ensure the supplier is meeting expec-
- Evidence of continued improvement so that a supplier is constantly challenged to become better each year

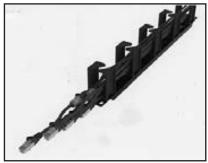
Suppliers needed 800 points to receive and retain Q1 certification. Molex achieved a score of 1,200, putting the company at the upper end of Ford's top-tier suppliers.

For more information about Molex please visit http://www.molex.com.

Richco Offers Optical Fiber Rack Bracket

Richco, Inc. is glad to announce the release of its optical fiber rack bracket. the OFRB. Designed to use with 19" rack patch panels, the OFRB holds Ethernet cables and jacketed fibers. It easily mounts into a square hole by pushing in and turning, and is removable with a quarter turn. The OFRB is available in UL94 V0 rated material as sandard and is RoHS compliant. To review the OFRB or other brackets that Richco offers please visit www.richcoinc.com.

Richco, Inc. is a global manufacturer of plastic components. Since its inception in 1954, the company has specialized in supplying quality circuit board hardwre, wire routing products, cable ties, clips &



OFRB Optical Fiber Rack Bracket from Richco, Inc.

clamps, fan accessories, motion control products and fiber optic products. Richco also offers custom product design development, 3D tool design and development, rapid prototyping, production and secondary operations.

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ÅngströmBond® AB9282, Plastic bonding and structural adhesive. AB9282 is a very high strength, solvent free, 2-part epoxy designed for bonding metals, glass, pvc, nylon and structural plastics. It is a medium viscosity adhesive that yields high impact, vibration and thermal shock resistance. This system is also excellent for sealing applications and it provides protection from moisture, solvents and salt water environments.

ÅngströmBond® AB9282 has a 1:1 mix ratio which allows it to be conveniently packages in 2.5 to 50 gram pre-weighed packets, dual barrel cartridges or bulk containers. It is a typical example of the specialty polymers offered by Fiber Optic Center.

Fiber Opic Center, In, of New

_Continued on page 34



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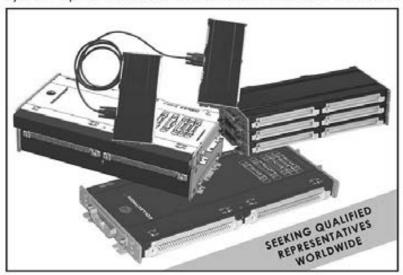
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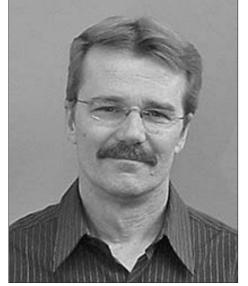
Changing Attitudes

By Paul Hogendoorn

years from now? And, will those things even still be done here in North America? So much has changed in the last 10 years, and if the recent past is any indication, much more will change in the next 10 years.

The manufacturing industry is facing many challenges. Some of the current threats have been created by external forces, but some of them are monsters we (the industry) have created ourselves. And most of these threats are nothing more, or less, than attitudes.

Some of our governments' attitudes have led to the current weakened state of our manufacturing industry. Although most have changed their tune recently, big damage was done in the years leading up to the current crisis. Employers often carry the cost of their employees' healthcare, and manufacturers in many jurisdictions carry a disproportionate share of many other public costs (including public education in my home area, the province of Ontario). The laws in some of our jurisdictions are what many would describe as "pro-labor", "pro-environment", and now so "prosafety" that it leaves many business owners shaking their heads asking "do they



Paul Hogendoorn, President OES, Inc.

think that I don't care about my employees, or the environment, or safety?" The assumption is that without the government's enforcement, employers aren't interested in doing the right things. This attitude has to change, if there is to be a manufacturing industry in North America in ten years. Our society owes its economic wellbeing to our historic manufacturing sector, it doesn't need to be protected from it.

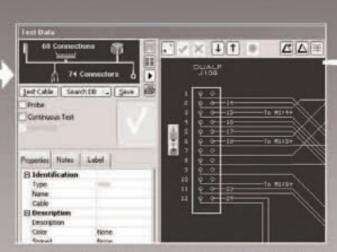
Labor needs to change its attitude too. Healthy manufacturers, that make a profit and that reinvest willingly, provide more meaningful jobs, and more secure jobs, than manufacturers that need artifi-

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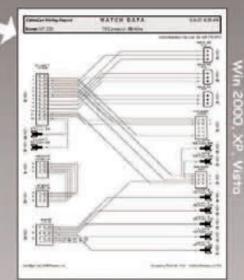
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cial stimulants to do so. Companies with healthy relationships with their workforce are the ones that adapt more quickly (and more naturally, with less need of incentives) than companies with structured and more rigid relationships. The more adaptive companies are the more proactive ones, and the proactive ones are the ones that I'd be more comfortable betting my family's future income on. All too often it's the things that are negotiated into a contract to protect the employees and give them job security that are the things that impair a factory's ability to compete, which in turn erodes its viability and contributes to its closure. This attitude needs to change, if we are to keep more facilities viable in North America. The company is the creator and provider of the jobs; they are not the

Companies need to change their attitudes too. Too many companies have placed too much control in the hands of the purchasing department. The engineering department is usually responsible for creating the product that differentiates the company from its competitors, and sometimes for the company's formation in the first place. And the sales and marketing departments are responsible for the company's brand acceptance, and for the relationship with the group that matters the most; the customers. Yet despite this, the purchasing department often has power completely disproportionate to its real importance in the organization. If cost truly is king (and not a product, or innovation, or customer satisfaction, or anything else), then it becomes a race to the bottom - when nothing has "value" except cost. With this attitude, we all lose eventually. (Some faster than others, but we will all lose.)

enemy.

Yes, these are challenging times, with many things outside of our control; the economy in general, the exchange rate of different currencies, consumer confidence, the cost of energy etc. etc.. If we want to, none of us will have any difficulty finding a reason beyond our control to explain a failure. The government can point to its prime culprits, the economic crisis or other levels of government; labor will

point to bad companies or bad government policies, or both; companies will point to foreign competition, or unfair government policies, or shareholder expectations. But the bottom line is, there is no future for anyone by hanging on to these excuses.

If we are to have a healthy manufacturing industry in 10 years time, it will be as simple as, or as difficult as, changing our attitudes.

Paul Hogendoorn is president of OES, Inc. and a founding member and past chair of the London Region Manufacturing Council. He can be reached at phogendoorn@oes-inc.com

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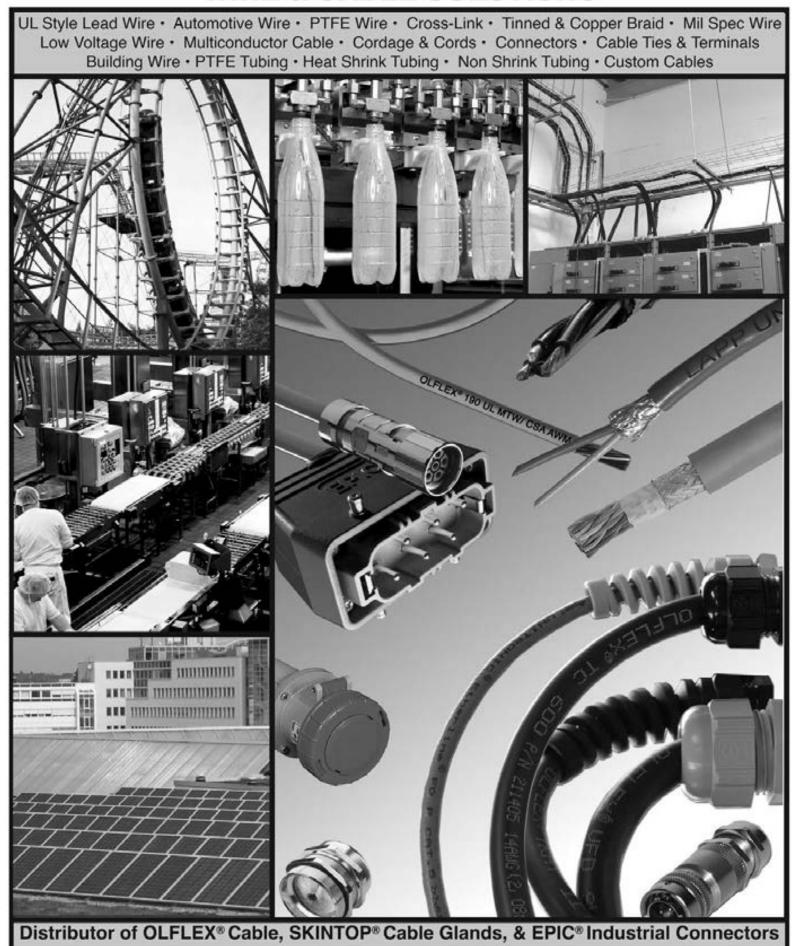
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NEWS PLUGS continued



Continued from page 31 __

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Bishop & Associates Releases New World Cable Assembly Market Report



World Cable Assembly Market Report from Bishop & Associates

Bishop and Associates, Inc. has just released a new seven chapter, 173 page research report providing a quantitative analysis of the World Cable Assembly Market, as well as the trends and factors driving the market. Cable assembly sales and forecasts are provided by end use equipment market segments, cable assembly type, region of the world, and manufacturing channel for the years 2008 through 2013. The report provides both overall analysis to assist companies with their strategy

development, and detailed quantitative information for specific market analysis and planning.

There's a full chapter providing an in-depth definition of the different types of cable assemblies by connector types accompanied by pictures. This chapter also defines the end use equipment segmentation, the regions of the world, and manufacturing channels.

The Introduction and Executive Summary of this report provides a summary of the market sizes in 2008,

projections for 2009 through 2013, and an overview of the major trends and issues identified in the report. It is intended for the executive who is looking at the big picture and a concise overall understanding.

The Research Report M-799-09, World Cable Assembly Market is available for \$3,500. If you would like additional information about this report, visit website: www.connectorindustry.com.

Additional print copies of this report are available for \$350.

Contact Bishop & Associates, Inc., 1209 Fox Glen Drive, St. Charles, IL 60174. Phone (630) 443-2702 or Fax (630) 443-2704. Email bishop@bishopinc.com or visit www.connectorindus-



alendar of Events Page 49

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NEWS PLUGS continued



Tyco Electronics Announces the Availability of the World's First Independent Lab Conducted 10GBASE-T Comparative Test Study

Tyco Electronics' AMP NETCONNECT business unit has announced that the third-party test laboratory GHMT AG has completed the first independent study of UTP ("Unshielded Twisted Pair") vs. STP ("Shielded Twisted Pair") systems for 10 Gigabit Ethernet (10GBASE-T). With the growing demand for IP bandwidth and end-user driven high speed services like the transmission of huge media entertainment files, medical records or research files, this study offers conclusive proof that the ideal cabling infrastructure system to support 10GBASE-T and larger applications is shielded copper.

This first-of-a-kind comparative study of two U/UTP and one F/UTP and two S/FTP systems from five market-leading vendors was conducted "live" using real 10GBASE-T equipment and traffic in environmental conditions established in international MICE (Mechanical, Ingress, Chemical and Electromagnetic) classifications.

The study was conducted by GHMT AG, an independent test laboratory founded in 1992, an ISO/IEC 17025 certified third-party lab and one of the world's leading cabling test labs. GHMT specializes in cabling and systems, EMC analysis and concepts, as well as wireless applications.

Key findings in the GHMT study include:

- 10GBASE-T is very noise sensitive due to higher transmission frequency and lower signal levels caused by more complex coding schemes
- Shielded systems offer high coupling attenuation and therefore extraordinary ANEXT (Alien cross-talk) and EMC performance
- Unshielded systems show significantly weaker ANEXT performance and coupling attenuation because of balance-only based noise reduction
- Unshielded systems failed four out of five electromagnetic immunity tests as specified by the international MICE definitions to describe different environmental levels
- Shielded systems work with 10GBASE-T "by design", while UTP systems require an increased level of time consuming and costly "immunity installation" practices

Full details of the study can be found at: www.utp-vs-stp.com

Tyco Electronics Ltd. is a global provider of engineered electronic components, network solutions, specialty products and undersea telecommunication systems. Tyco Electronics designs, manufactures and markets products for customers in a broad array of industries including automotive; data communication systems and consumer electronics; telecommunications; aerospace, defense and marine; medical; energy; and lighting. More information on Tyco Electronics can be found at www.tycoelectronics.com.

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- High speed coiler for stranded wires, multiconductor and fiber optic cables
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NEWS PLUGS continued



Spark Plug Terminal Design Assures Reliable Connection

A line of vibration-resistant spark plug terminals for makers of aftermarket ignition sets for cars, trucks, motorcycles, RVs, off-road, farm and marine engines is available from ETCO Incorporated of Warwick, Rhode Island.

ETCO's Spark Plug Terminals are available made from stainless steel, nickel plated steel and zinc plated steel in varying sizes and wall thicknesses in over 100 configurations to meet a wide range of ignition set applications. Featuring a tempered



Spark Plug Terminals from ETCO Inc.

spring clip which provides a tactile feel when pushed onto a spark plug and seats, these terminals assure a reliable connection.

Supplied on a carrier strip for automated assembly equipment,

ETCO's Spark Plug Terminals are offered with spring clips that are made from annealed and heat treated high carbon steel (plated to inhibit corrosion) or stainless steel. Etco also makes a wide range of insulator boots and assembly equipment, is ISO/TS 16949:2002 certified and supplies major automotive OEMs.

ETCO's Spark Plug Terminals are priced according to configuration and quan-tity. Samples, literature and price quotations are provided upon request.

For more information contact ETCO Incorporated, 25 Bellows St. Warwick, RI 02888. Phone (401) 467-2400 or Fax (401) 941-2453. visit www.etco.com

Zeus Increases its Presence in Aerospace Industry with AS9100 Certification

Zeus, Inc., a leader in material science and polymer extrusions, announces the acquisition of AS9100 certification for aerospace applications. The standard was developed by The Society for Automotive Engineers and it defines quality and management requirements. This certification is merely one indication of Zeus' increased presence in the aerospace industry. The company is also working directly with more suppliers to design end products for demanding applications. "The AS9100 certification allows current and future partners to know we are knowledgeable of industry quality requirements and tat we are committed to meeting or exceeding these benchmarks," said Rob Hall, Vice President of Engineered Extrusions. "We strive to provide a robust and responsive quality management system that will aid in the advancement of polymer solutions inaerospace applications."

Zeus continues to provide products with the highest standards of quality and control.

Products related to aerospace applications, include PEEK™ Drawn Fiber, PEEKshrink®, Insulated PEEK Wire, and wire harness products, such as high temperature heat shrinks.

Zeus, Inc. is headquartered in Orangeburg, SC USA. For further information, visit www. zeusinc.com.

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Designed in Germany, the Megomat 1000 has a modular design concept to fit worldwide demands. From simple crimping applications to seal x seal, from 28-ga. single wire to 8-ga. same wire doubling or 2-conductor parallel cable with ferrite block loading and other customer specific demands. Changeover times can be significantly reduced with new features such as the tool shuttle system and the wire revolver system.

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- Tool shuttle system for quick applicator changeover



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T.S.R., Inc Introduces Nitronic's Coaxial Cable Stripper

T.S.R, Inc., is very proud to introduce the highly innovative ST730 Coax Cable stripper from Nitronic. The ST730 takes the challenge out of stripping coaxial or triaxial cables. Multi-conductor cable or single wire with special insulation can also be processed with ease and high precision.

Nitronic was founded in 1977. It originally developed and manufactured electronic instruments. Its core areas were medicinal technology, high voltage technology, and systems engineering.

Nitronic's ST730 Coax Cable Stripper has many features including:

- Machine uses WinCoax software
- Less set-up time due to stored cable parameters
- Password protected safety parameters
 - Built-in sequence counter
- Suitable for Teflon and Kapton isolations
 - Adjustable diameter feed rate
 - Adaptive clamping force
 - Sensor activated start cycle

Other stripping technology by Nitronics includes the ST215 and the Mini-Strip. Nitronic's innovative products along with T.S.R.'s knowledgeable sales force will continue to provide customers with a true partner for all their coaxial and triaxial cable processing needs. T.S.R. currently has offices in Eastport, Michigan and Southern California. T.S.R. has a network of reps in North America, and Mexico.

For more information on Nitronic Electronic's please contact: TSR, 5185 North US Hwy 31, Eastport , MI 49697

Phone: 231-599-9956, Fax: 231-599-2965, Email: contact@tsrmi.com, website: www.tsr-mi.com | www.youtube.com/timtsr.

Coleman Cable Introduces Royal® Brand Diesel Locomotive Cable (DLO)

Coleman Cable, Inc. (Nasdaq: CCIX) expands its industrial product offering to include Royal® brand Diesel Locomotive Cable (DLO).

Coleman Cable's DLO cable has UL RHH/RHW-2 and CSA RW90 approvals and is rated for 2000 volt and 90°C wet/dry. DLO is constructed with fully annealed tinned copper that meets ASTM B-33, premium grade Ethylene Propylene (EP) insulation and a robust Chlorinated Polyethylene (CPE) jacket.

These compounds provide a cable with excellent impact and abrasion resistance, as well as superior resistance to oils, heat, flame, acids, and alkalis.

The cable also carries a sunlight-resistant rating.

"Coleman Cable continues to capitalize on our copper fabrication, thermosetting, and thermoplastic insulation production capabilities" said Gene Stang, Vice President of Product Management and Market Development. "The DLO product line will complement our recent industrial product line additions of un-insulated copper fabrication, XHHW, SIS VW1, and tray cables. Coleman Cable is committed to offer one of the broadest product lines in



Royal® Brand Diesel Locomotive Cable (DLO)

the wire and cable industry."

DLO may be used in oil and gas drilling rigs, mining and earth moving equipment, shipyards, and motor leads, and other heavy-duty industrial environments where a highly flexible single conductor cable is required.

For further information contact Coleman Cable, Inc., 1530 Shields Drive, Waukegan, IL 60085. Visit website www.colemancable.com



The CT4 Coastelmatic Pneumatic Tool Holder

The CT4 Coastelmatic hand tool holder is a device that uses air to activate spring retracted hand tools. The CT4 Coastelmatic is a great low cost alternative to automatic crimping, stripping, and cutting machines. The CT4 Coastelmatic can be set up to work crimpers, strippers and cutters. The patent pending tool holder in the applicator securely holds all tools in place, allowing the operator to use his hands freely. This new and improved cylinder delivers 10% more power through dual activation for tough jobs. Each unit is pre-assembled, tested and ready for use.

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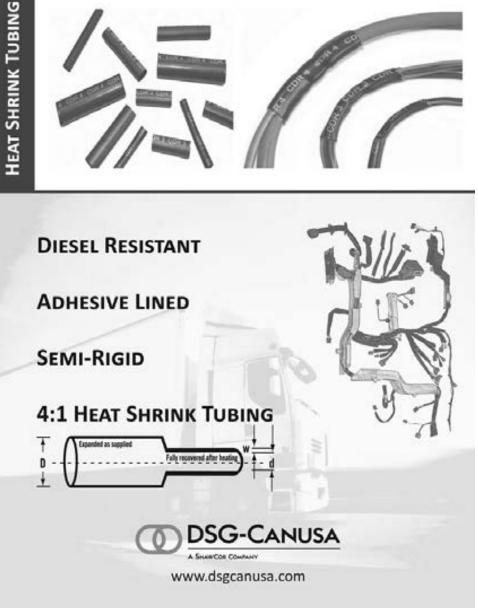


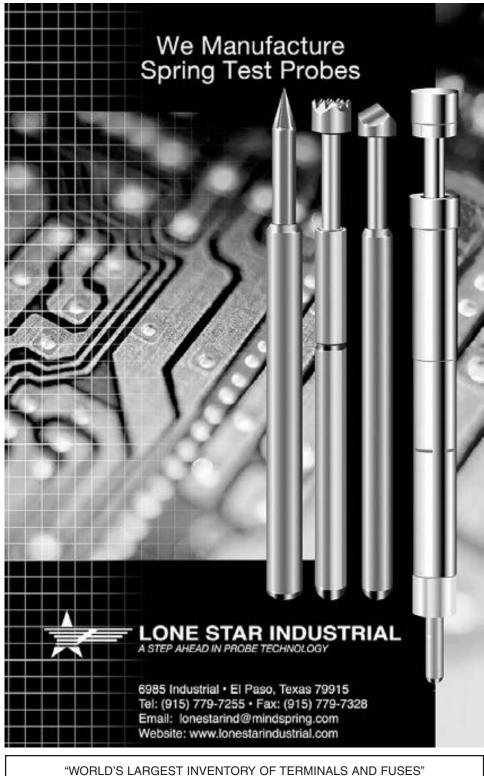
The Nitronic ST730 Coax Cable Stripper



DSG-CANUSA'S CDR: THE NEXT GENERATION IN SPLICE SEALING







NEWS PLUGS continued



General Cable Manufacturing Facilities Receive Best Manufacturing Plants Award

Two General Cable manufacturing facilities have been named as winners in INDUSTRYWEEK's 2009 Best Plants Competition. General Cable's Altoona, Pennsylvania manufacturing facility, which produces ignition wire sets, and Piedras Negras, Mexico, which manufactures Original Equipment Manufactures' (OEM) wire harnesses, have been selected by INDUSTRY-WEEK magazine, as two of the 10 Best Plants in North America. INDUSTRYWEEK'S Best Plants Award Program, which started 20 years ago, is an annual salute to outstanding manufacturing facilities that are on the leading edge of efforts to increase competitiveness, enhance customer satisfaction, and create stimulating and rewarding work environments.

The INDUSTRYWEEK Best Plants program is an annual celebration of worldclass manufacturing and continuous improvement practices, and demonstrates that manufacturing excellence continues to flourish across North America. In addition to the operational efficiency of the 10 factories chosen as 'best plants,' these facilities share the common trait of an unending pursuit of excellence, recognizing they can't be leaders in their indus-

tries without their employees' support and they are aligned in a mission of successfully tackling the challenges of being 21st century North American manu-

General Cable's Piedras Negras plant received a commemorative award during a January 13, 2010 ceremony. This honor recognizes the plant's world-class manufacturing capabilities and its commitment to continuous improvement. Its empowered workforce is the foundation for its SUCCESS.

General Cable's Altoona plant celebrated with an award ceremony on January 26, 2010. This is the second time the manufacturing facility has earned the Best Plant distinction — the first time was in 2003.

Competing plants reported management practices and plant performance in such areas as: quality; customer and supplier relations; employee involvement; productivity; cost reductions; manufacturing flexibility and responsiveness; inventory management; environmental and safety performance; and market results. The top 10 selected winners report some astounding manufacturing achievements in these

"General Cable is once again pleased to receive this award from INDUSTRYWEEK in recognition of our manufacturing excellence," said Greg Lampert, President and Chief Executive Officer of General Cable North America. "We use the INDUSTRY-WEEK competition as a benchmark for comparing our manufacturing performance against the best in North America. I

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achieve them."

"Lean Manufacturing, combined with Six Sigma quality improvement tools, continues to drive major improvements in all our manufacturing operations," added Mark Thackeray, Senior Vice President, North American Operations. "Our strategy to achieve manufacturing excellence has made General Cable a much stronger company today, despite a tough economy. Lean Thinking is part of our culture of continuous improvement, along with the engagement and contribu-

tion of our associates—something we call 'OLPC' or Operator-Led Process Control. The Altoona and Piedras Negras plants are both operating very close to our ideal vision of OLPC."

"Since 2001, General Cable has had eight plants selected as finalists in the Best Plants competition. Six of those plants have gone on to achieve the title of one of the Top 10 Plants in North America — one of them twice," continued Thackeray.

"They are Altoona, Pennsylvania, USA, in 2003 and now in 2009; Piedras Negras, Coahuila, Mexico in 2009; Manchester, New Hampshire, USA in 2008; Indianapolis, Indiana, USA, in 2007; Tetla, Tlaxcala, Mexico, in 2006; and Moose Jaw, Saskatchewan, Canada, in 2005. This achievement recognizes our Company's world-class manufacturing capabilities, as well as the mindset of continuous improvement shared by all General Cable associates worldwide."

"Our associates come to work committed to make things better every day," said Tim Wampler, Vice President and Team Leader. Communications Assembly Plants. "This award recognizes the hard work and dedication of all the associates at Altoona and Piedras Negras. We are very proud of our accomplishments and to be recognized with this prestigious INDUSTRYWEEK Best Plants Award."

"Our team has embraced Lean manufacturing for many years, which has allowed us to continually adapt, and quickly and successfully respond to challenges, be it with new customers or new products," concluded Roger Roundhouse, Senior Vice President and General Manager, Specialty Wire Harnesses. "With savvy market moves and a commitment of continuous improvement, our wire harness assembly plants are successful in the global market-place where they compete."

General Cable (NYSE: BGC), a Fortune 500 company headquartered in Highland Heights, Kentucky, is a leader in the development, design, manufacture, marketing and distribution of copper, aluminum and fiber optic wire and cable products for the energy, industrial, specialty and communications markets.

For further information phone General Cable at (859-572-8000 or Fax (859) 572-8458. Email info@generalcable.com or visit website www.GeneralCable.com.





IPC Issues Call for Nominations for Corporate and Individual Awards

IPC — Association Connecting Electronics Industries® announces a Call for Nominations to recognize the countless volunteers who contribute their time and expertise to IPC standards development and other vital IPC activities. Industry members are encouraged to highlight the special achievements of their companies and their colleagues by nominating them for one or more awards. Awards will be presented at IPC APEX EXPO™ the week of April 5, 2010, at the Mandalay Bay Resort & Convention Center, Las Vegas.

The IPC Peter Sarmanian Corporate

Recognition Award honors and recognizes a corporation (or division) in the printed circuit board industry (supplier, board manufacturer or OEM) that has taken a leadership role and made contributions to the industry while demonstrating support of IPC through participation in technical and/or management programs. The award is named for former IPC Board Chairman Peter Sarmanian, former president of Printed Circuit Corp.

The IPC Stan Plzak Corporate Recognition Award honors and recognizes a corporation (or division) in the electron-

ics assembly industry (supplier, EMS company or OEM) that has taken initiative to actively contribute to enhancing the industry while demonstrating support of IPC through participation in technical and/or management programs. The award is named for former IPC Board Chairman Stan Plzak, former president of Pensar Corporation.

The IPC Raymond E. Pritchard Hall of Fame Award is bestowed upon an individual in recognition of extraordinary contributions with broad significance to the electronic interconnection industry and distinguished service to IPC. The

nominee must support the advancement of the industry, consistent with the goals and mission of IPC. This is the highest level of recognition IPC can give to a member and is based on exceptional merit over the long term.

The IPC Presidents Award honors individuals from IPC member companies who have demonstrated ongoing leadership in IPC and have made significant contributions of their time and talent to the association and the electronic interconnection industry.

Committee Leadership Awards are

presented to committee chairs upon completion of a standard or specific program. Individuals may receive this award more than once. This award can also be bestowed to an outgoing chairman who has made contributions over a period of time.

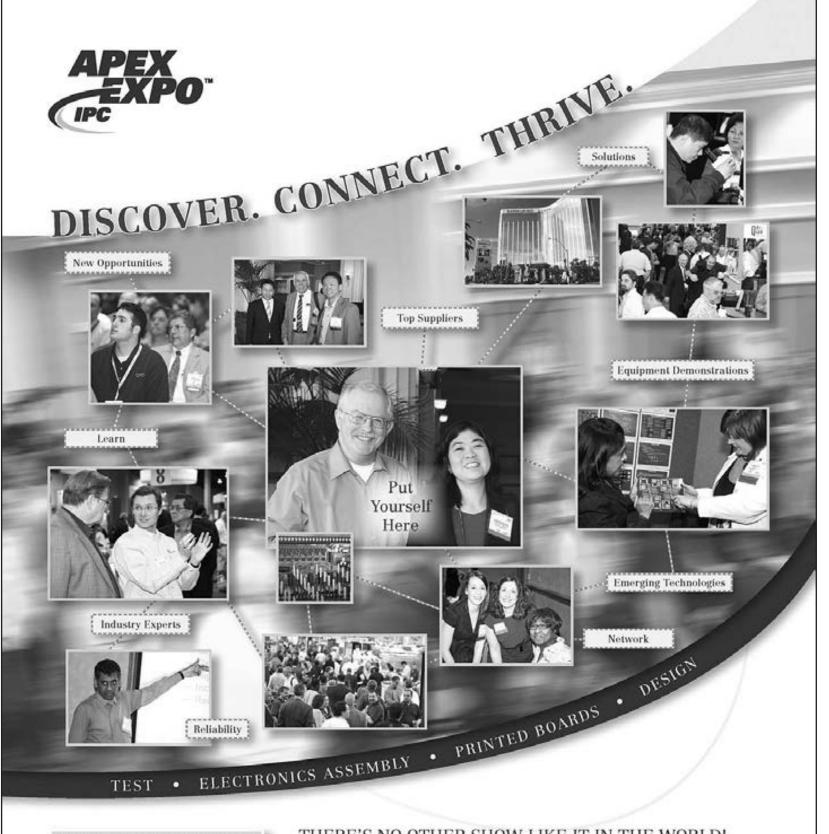
Distinguished Committee Service (DCS) Awards honor committee members who have contributed to a specific standard or other IPC program through consistent participation or regular contributions and ballot submission, as well as having made a significant impact on a document or project.

Individuals or companies who have given exceptional service to an IPC program or to the industry are honored with the Special Recognition Award. Their activity can be short-term or a one-time event.

Nominations must include the candidate's name and contact information along with a statement describing his or her contribution(s), how he or she meets the criteria and why he or she deserves recognition.

For more information on the awards' criteria, visit www.ipc.org/awards. Self nominations are acceptable.

Questions should be directed to Kim Sterling, vice president of marketing & communications, at +1 847-597-2805 or Kim-Sterling@ipc.org.



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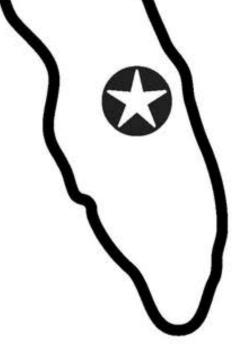
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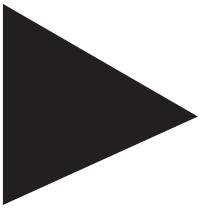
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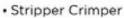


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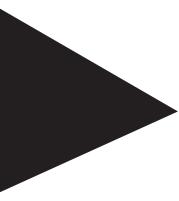
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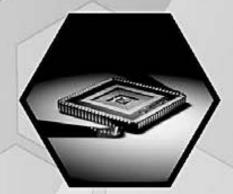
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Cables 2010 exhibition is a leading conference & exhibition on plastics cables in Europe. This exhibition is organized by the Applied Market information Ltd. It will provide a international forum in bringing together cable producers, raw materials suppliers and equipment manufacturers. A Conference will be held concurrently with this exhibition. Professionals related to the field of broadcast, video and film production equipment, HDTV, studio equipment, microwave, transmitters and receivers, test and measurement, lighting, power, cable and accessories, professional sound, audio equipment and multimedia are the target visitors.. For further information contact www.amiplastics.com.

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10th Annual National Electrical Wire Processing Technology Expo May 12-13, 2010

Midwest Airlines Center Milwaukee, Wisconsin

Wednesday, May 12: 9:00 a.m. - 4:00 p.m. Thursday, May 13: 9:00 a.m. - 3:00 p.m.

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60th ECTC 2010 June 1-4, 2010

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The premier international packaging, components, and microelectronics systems technology conference, the Electronic Components and Technology Conference (ECTC) offers attendees an outstanding array of packaging technology information. This year's conference will have 39 technical sessions, 16 professional development courses, a panel discussion, a plenary session, a CPMT Seminar, and a technology corner for exhibitors.

The technical program contains papers covering leading edge developments and technical innovations across the packaging spectrum. Topics include advanced packaging, modeling and simulation, optoelectronics, interconnections, materials and processing, applied reliability, assembly and manufacturing technology, components and RF, and emerging technologies. Both poster and presentation formats are Used. Special papers presented at the ECTC will be awarded the Intel Best Student Paper Award and best and outstanding paper awards. For further information contact www.ectc.net.

Assembly Technology Expo September 28-30, 2010

Donald E Stephens Convention Center Rosemont (Chicago), Illinois

Stay at the forefront and remain competitive with the latest technical training for manufacturing professionals. The ATExpo Conference gives you the knowledge you need to make your assembly process work better from design to endof-line packaging. Attending Assembly Technology Expo helps you keep pace with global competition with innovative products and ideas that make your process faster, better, and less costly. For further information visit www.atexpo.com.

Electrical Manufacturing and Coil Winding Expo 2010 October 18-20, 2010

Gaylord Convention Center Dallas, Texas

A technical conference with presentations from Industry Leaders related to the design and manufacturing technologies of transformers, permanent magnets, AC/DC motors, electrical coils and components. This new 6 in 1 event will attract hundreds of professionals from the electrical manufacturing industry. For further information visit www.emcw.org.

If you have an event you would like to have listed here, send it to Marilyn Magowan marilvnmaqowan@vahoo.com

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