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Solution Technologies

By Fred Noer

“Location, location, location” is the well-known mantra driving the real estate industry. Similarly, location is a significant reason why Solution Technologies has experienced growth since starting in 2008 and is primed for more.

The wiring harness and cable assembly manufacturer in Dallas, Texas, is located within five miles of five major suppliers of wiring and components. The firms provide next-day delivery, and under a tight deadline Solution Technologies (ST) can pick up items from the companies.

“Our location in the Dallas-Fort Worth

Metroplex means that our lead times average one to two weeks,” said Carlos Cardenas, 52, ST general manager. “Lead time for buyers is really important, and we’re trying to be a company that is quick and responsive. That gets you in the door as a company that buyers are interested in.

“More than 90 percent of the time our turnaround time is quicker than any other company’s,” Cardenas said. “Having local suppliers is a big advantage because big customers are very demanding. If I can’t get material on time, then I could lose an opportunity.”

The three component suppliers are Mouser Electronics, Mansfield; Heilind Electronics, Plano; and Graybar, Dallas. The two wire suppliers are Interstate



Solution Technologies staff members work four 10-hour days either Monday-Thursday or Tuesday-Friday to save on gas for commuting and allows for a weekday off.

Wire Co., Dallas, and Industrial Electric Wire & Cable, Plano. ST uses a total of 25 suppliers.

Cardenas works at fostering strong supplier relationships. Rather than ordering on-line, he contacts inside sales reps. “They give me different pricing than on-line,” he said. “The formal quote and paperwork are time-consuming but help to keep cost down and make sure you get what you need. And, there’s no extra cost for shipping because we’re local.”

Another benefit of the relationships is that Cardenas accompanies supplier sales reps on calls to their customers needing contract manufacturing. “Being in the same meeting is good,” he said. “It has produced a lot of business. It also is good for my distributors because it gives

them the value-add they need and solidifies the volumes they have in stock for me.

“My suppliers are exceptional,” Cardenas said. “They go above and beyond and will do anything to get me what I need. We have very close partnerships with them.”

Location also is important once products have been manufactured. Many of ST’s 13 customers are in the Metroplex, so delivery by ST is easy, a selling point because of cost savings. Other customers are in Houston and other parts of Texas as well as the northeastern U.S.

“Our trademark is our cost-out approach,” Cardenas said. “We want to be a world-class provider. To get our foot in

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Understanding Cable Assembly Molding

By Mike Levesque, Shawn Young & Brock Richard, C&M Corporation

While a molded cable assembly can offer significant advantages over a similar product of a mechanical construction, the art of insert molding remains somewhat of a mystery to cable assembly consumers. While attracted by the potential for a more aesthetically pleasing product that can be sealed from the environment and rendered ‘tamper proof’, the complexity of the insert molding manufacturing process is often overlooked.

Many cable assembly engineers who are consumers – but not producers – of molded assemblies are familiar to some degree with conventional molding. In

this environment, the goal is the maximization of process speed which translates directly to bottom line financial performance. Manufacturing lot sizes are often characterized by long runs, where the same part is produced continuously over a considerable amount of time. The molding machines are usually horizontal in construction, use a closed cavity approach with auto-ejection of the finished parts, and operate at much higher injection pressures and speeds than an insert molding process. Additionally, the often uniform nature of the parts relative to wall thickness, balanced runner systems, and sufficient draft on the molded parts being produced serve to support consistent quality in the face of

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Cloud based CAD Target Trends in the Wiring Harness Market

By Fergus Kendall
CTO, Cadonix Ltd.

The three irresistible forces of Competition, Globalisation and Regulation are addressed by new cloud-based design-for-manufacture tools

Recent years have seen major upheavals right across the wire harness industry. A market once dominated by a few large players has perhaps been slow in responding to globalisation and competition. Major players have been stung by massive penalties for breaching rules on price fixing and competition. Poor financial performance of these large manufacturers has been overshadowed by the excellent performance of medium and small manufacturers. Across the board, harness makers need to control costs evermore strictly. At the same time



**Fergus Kendall
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as demanding cost reductions, customers are looking for increasingly complex harnesses to meet the require-

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Solution Technologies has experienced growth since starting in 2008 and is primed for more.

1 Understanding Cable Assembly Molding
There are four major areas of consideration when discussing the intricacies of insert molding. These include the operator, tooling, equipment and the process itself. This article will examine each of these in more detail.

1 Cloud Based CAD Target Trends in the Wiring Harness Industry
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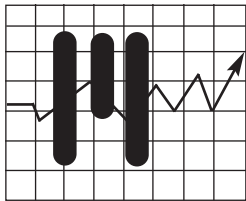
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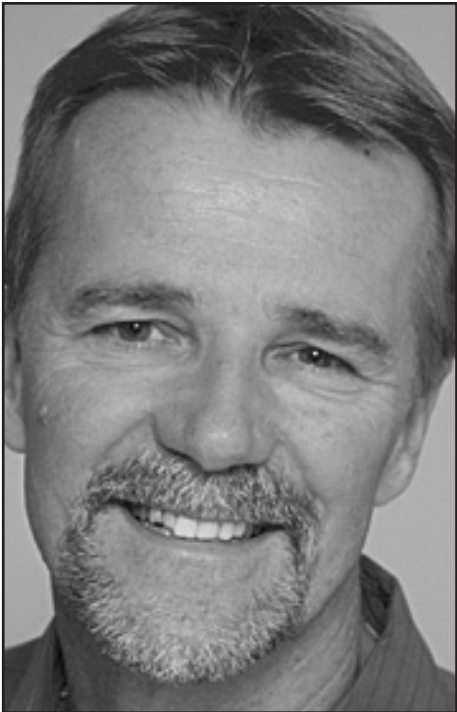
Value Check

By Paul Hogendoorn

My father in law is 81. It's been over a quarter of a century since he retired from Goodyear, but every year he still attends the company golf tournament, and he keeps connected with many of his former working colleagues. The bulk of his career was in the time where people would spend their whole working life working for a single company, and where there was a reciprocated loyalty between employer and employee. (I still don't dare to buy a different brand of tires because I know he will notice it right away, and in a small way, I know that it would offend him.)

I entered the work force at the beginning of the end of that era. As a "field engineer" for a large computer company ("business machines" in that day), some of my coworkers were people that had been for there for thirty or forty years. During my second year there, one co-worker retired after forty plus years, and the branch management arranged a small party to mark the event. His efforts were acknowledged in front of his peers, and he was given some bright travel luggage, along with all of our best wishes to start his retirement adventures. Those were different times.

Things are different today. Companies are different, employees are different, and the expectations are different. Many large companies that were considered




Paul Hogendoorn

rock solid for generations have completely disappeared because they couldn't adapt to changing times or circumstances. Those that survive or thrive today do so because they do adapt, but often the strategic and corporate structure changes they make result in direct and sudden consequence to many of their employees. Even the employees that survive the 'consolidation', 'reorganization', 'right-sizing', 'off shoring' or 'sub-contracting' event are affected; their confidence in their employment has

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Value Check

Continued from page 4

been shaken, as has their basic trust in their employer.

Workers today are certainly different than in my father's day, or even my day for that matter. In dad's time, it was common to expect to work for the same company for your whole life. When I graduated, statistics were cited that suggested we should expect to change employment at least 3 times over the course of our career. Nowadays it seems that when people take a job, their attitude is that they'll try it for a year or two to see if they like it, and then perhaps they'll try something different after that. To some degree, I think this is just a reflection of a different generation in a different time, but to some degree I think it's also a consequence of the fractured relationship between employers and employees in general; the trust has been broken.

Over the years, I have written a lot about vision, but this topic is all about the other ingredient necessary for long term success - values. A company's relationship with their work force should be as clear and obvious a reflection of their values as their financial results, their environmental stewardship, and their commitment to their customers' satisfaction. The ebbs and flows of business will sometimes necessitate things that result in layoffs and job losses, but some companies seem to navigate through those times with far less impact on their peo-

ple and their families than other companies. In the last 30 years, I have spent a lot of time in many different manufacturing companies - large, medium and small. I can think of several companies in each category that I know have navigated through those times far better than most companies, with respect to causing a minimal disruptive effect to their workforce. They are intentional about keeping their people employed. It often takes creativity, sometimes courage, and always cooperation. Perhaps cooperation is the key, but cooperation is built on trust, and trust takes time to build.

It's not a coincidence that those same companies - the ones that always seem to get through without breaking that relationship trust - are the ones that still enjoy that reciprocated loyalty. Their families drive the cars that they help build, or use the brands they help produce. Their sons and daughters don't just work there, they are proud to work there too. The chatter at the coffee shop, or in the bowling lane, or at the company picnic or the family barbeque, is never negative about the company. They are part of their company's extended family, and the company is part of their life's fabric. This cannot be accomplished as a strategy, tactic or policy; it can only be realized as a company value.

Times do change, but values don't.

Paul Hogendoorn can be reached at paulh@getfreepoint.com or visit www.getfreepoint.com



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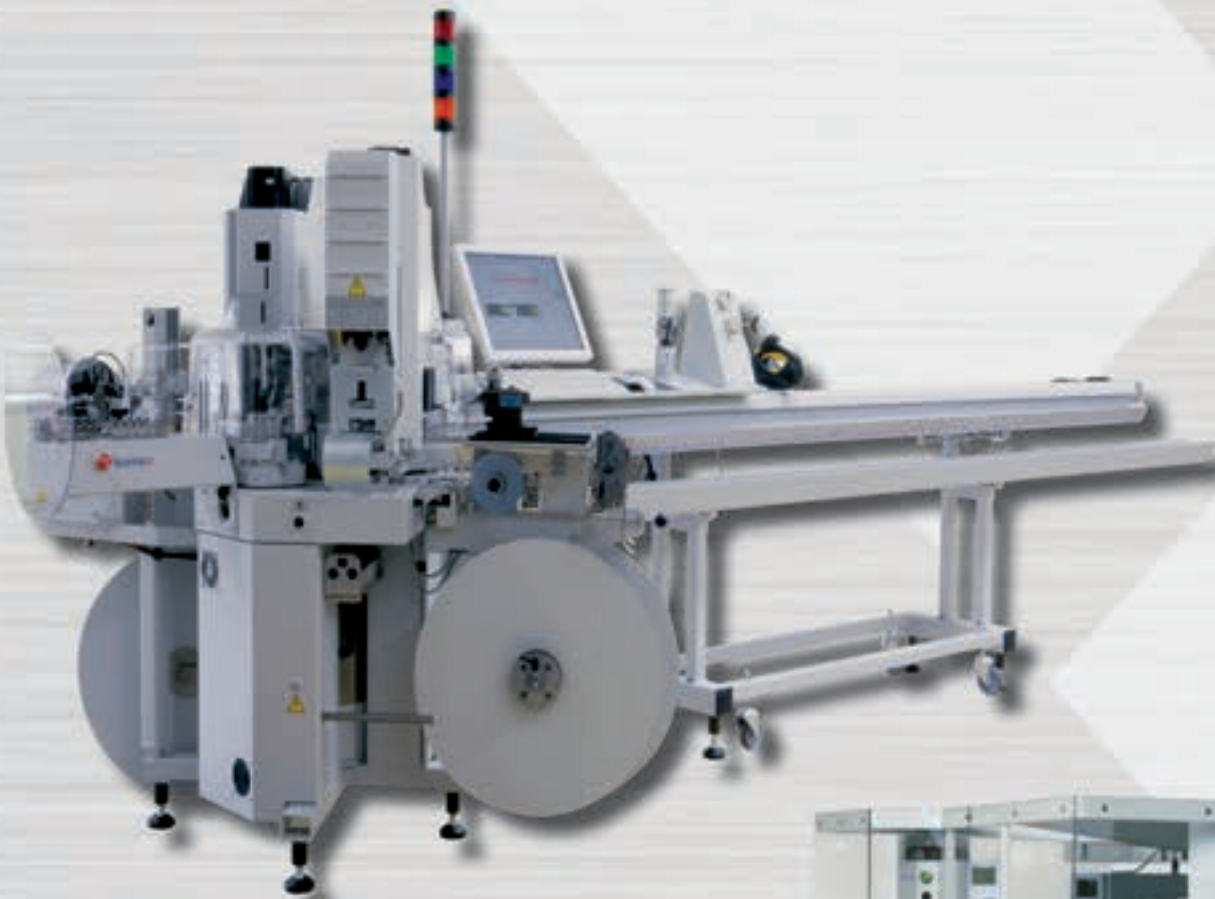
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Unions in Wire Harness Plants?

By Loren Smith

Let me begin by saying that, in general, I am not opposed to labor unions. I recognize and respect the role unions have played in our country's history and how, in many instances, they have leveled the playing field, mitigating abusive working conditions and providing employees with needed leverage in bargaining with employers. Moreover, we know that even today the presence of a union can be necessary in enabling workers to protect their interests against exploitive practices.

And as a personal note, my daughter is an attorney with the National Labor Relations Board, the government agency that protects the rights of private-sector employees. I am very proud of the work she is doing to help settle disputes wisely and fairly.

During my 25 years as an owner of a wire harness manufacturer, however, we never had a union, and I believe that was fortunate. As a labor-intensive business, producing products per customers' designs and contending with an abundance of competitors, the flexibility required to produce harness assemblies would have been seriously compromised with a third party – a labor union – standing between me and the people working in the factory.

But in my early years of ownership, we did experience a union-organizing attempt that had a fluky origin. A summer hire, whose father was a union



Loren Smith, CEO

organizer, seemed to think it would be fun to initiate the process, even though my employees had not voiced a problem with wages, benefits or any other issue.

For a union to represent employees, of course, first it must get voted into the company by winning an election. If that occurs – after what can be a contentious period of hampered productivity – the newly established union can then negotiate with management on behalf of members.

In our case, despite the good will we had developed with our employees, some employees believed that a union would be able to benefit them in some way, such as negotiate a pay raise. And because the union was quite effective at organizing, it was temporarily able to

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Unions in Wire Harness Plants?

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distract workers, drive a wedge between management and labor, and even jeopardize the survival of my business.

In the end, however, by facing off against the unionizing attempt and reminding our workers of the excellent relationships we had fostered, I prevailed.

It is possible that a few wire harness manufacturers today operate in conjunction with a labor union, but in my many years in the industry I've never known of one. In a fragmented industry like

ours, a unionized harness company would operate at a distinct disadvantage when competing with a company that did not have a union.

Our industry's tradition of operating without unions seems to me to carry two pluses: One is the efficiency of our operations for reasons I've briefly outlined. The other is the implication that wire harness manufacturers tend to value their employees highly and treat them well of their own volition.

Loren Smith can be reached at lms@blvcapital.com or www.bluevalley-capital.com

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William Starn, CEO of Mecal by Starn states "The industry is busy and growing, and so are we. We noticed a need for a more efficient applicator for processing of Mylar tape, so we put our engineering

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Mecal by Starn Tape Mounted Applicator

minds to work and came up with what we think will change the way tape mounted terminals are crimped and managed in an applicator.”

Mecal by Starn is a Meadville, PA-based company that manufactures and distributes Mecal applicators, presses, spare parts and accessories for the wire

harness industry.

Mecal by Starn Tape Mounted Applicator is patent pending and made in the USA.

For more information, contact Jim Smith at 814.724.1057 Ext114 or email jsmith@starn.com.

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Understanding Cable Assembly Molding

Continued from page 1

maximum manufacturing speed. The ability to optimize tool cooling, standardize mounting, and implement automated processes are also major differentiators between the conventional horizontal molding and vertical insert molding approaches. The result, all things equal, is a much higher production rate for finished parts in a conventional molding process.

What then are the challenges of the insert molding process used to manufacture cable assemblies, and, more importantly, how are they met by the manufacturer?

At a high level there are four major areas of consideration when discussing the intricacies of insert molding. These include the operator, tooling, equipment, and the process itself. Let's examine each of these in more detail.

Operator: As with any non-automated process, it is the operator who is often the most important component of the success or failure of a manufacturing lot. This is especially true in cable assembly molding. In addition to knowing the basics of machine operation, the operator has several variables to properly monitor and control if he or she are to produce parts that meet the established design and quality guidelines. In light of some of the equipment and component variability discussed earlier, some of these operator focused considerations include:

• **Residence Time** – the amount of time the molten plastic can remain in the barrel of the molding machine before it produces aesthetic issues on the finished part.

• **Part Loading** – with components loaded into the molding machine by hand, improper location during the process may result in a non-conforming finished part.

• **Cable Management** – Keeping the cable out of 'pinch points' where it can become damaged. This can become an area of concern for molded assemblies that include a great deal of bulk cable as well as composite products where several molds have already been applied to the product before an additional molding operation is initiated.

• **Process Adjustments** – due to potential differences between similar components in the areas of dimensions, heat withstand, pressure withstand (compression), as well as the ability to properly shut off in key areas of the part, the operator's degree of experience and ability to recognize the early signs of potential process variation are critical to ensuring the efficiency and quality of the molding operation.

• **Shot Consistency** – The failure to introduce enough molding material during the molding process – a short shot – can result in

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exposed components which may or may not be able to be re-worked depending on the amount of material introduced during the process and the adhesion of that material to the specific components involved. Conversely, the introduction of too much material during the process - over packing - can result in a compromise of the connector's physical parameters, material visibility in the face of the connector, and damaged cable jackets to include holes in the jacketing sheath. Both conditions can be defeated by an attentive - and experienced - operator.

It should be noted that even the most well trained, most experienced operator will bring a degree of variability to the equation not present in the automated, high volume environment of conventional molding. Training, process feedback, and proper engineering and supervisory support are basic mechanisms critical to minimizing the variability between operators and ensuring production is maximized while cost is driven to the lowest possible levels.

In addition, operator performance can be maximized through additional strategies which include:

- *Cycle Time Maintenance:* It is important to establish a work flow where the molding machine is not left waiting for the operator to initiate a new cycle due to load time inefficiency. This can be accomplished by proper staging of materials which includes consideration of whether the operator is right or left handed; Kaizen events focused on reducing or eliminating any unnecessary motion or material handling that detracts from an optimized machine loading time; and additional molding support for jobs that require significant materials preparation or in depth recording of critical dimensions.

- *Operator Evaluations:* A formal assessment of the operator in the areas of manual dexterity, eye-hand coordination, and organizational skills as to ensure the individual is properly matched to the requirements of the job.

- *Training in Machine Mechanics:* While knowing how to operate the molding machine is important,

knowing how the molding machine operates is equally critical. By understanding the machine technically, the operator is better positioned to identify and defeat potential problems before they can affect the manufacturing efficiency.

- *Tooling:* Because connectors and cable can vary from manufacturer to manufacturer, or even within the scope of a specification if purchased from a single manufacturer, the mold tooling must be designed with the ability to properly direct and contain (shut off) the molding material even in the face of component variability. The tooling designer is faced with additional variables introduced by the presence of the insert - or connector in most cases - and cable.

Those variables include inconsistent wall thicknesses, cable and insert compression, and the effects of thermal exposure, to name only a few. Proper gate size and location will serve to defeat a multitude of cosmetic and mechanical issues such as knit lines, sink marks, and jetting. In addition to the aesthetic and mechanical considerations, the design engineer cannot lose sight of operator ergonomics, an equally important design consideration.

In a manufacturing environment where product appearance is critical and cannot be sacrificed for process speed and throughput, the tool designer must also determine if a single

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Understanding Cable Assembly Molding

Continued from page 15

or multi-cavity approach is best suited to the product particulars, to include both design and expected manufacturing lot size. Due to the lower durometers of some of the molding plastics often associated with cable assembly molding and the longer set up times for those materials, as well as the available real estate on the smaller mold sizes associated with cable assembly manufacturing, often there is no opportunity to add ‘knock out pins’ or automate the ejection of the part. An experienced tool designer can, however, include design elements that allow for efficient manual ejection of the finished part.

Equipment: As with any manufacturing process, the proper equipment is a critical part of successful operations. Preventative maintenance, as well as daily house-keeping, are both necessary to ensure minimal downtime for the molding machines. Matching the requirements of the part to the capabilities of the machine is an important part of the equipment discussion that is often overlooked. Molding machine manufacturers recommend that between 20% and 80% of a machine’s barrel – which is directly related to its


ability to process molding compound – is used when the machine is in operation.

Choosing a machine that is too small for the application will significantly increase the potential for non-conforming parts as the machine cannot introduce the required amount of compound during each cycle thus creating a ‘short shot’ condition. If the machine chosen is too large, the molding material will be required to spend too much time in the barrel before introduction, thus increasing the possibility of aesthetic issues with the finished part resulting from heat damage to the molding compound as a result of thermal residence issues. Improper machine selection can result in inefficiency and manufacturing inconsistencies which will impede throughput, disrupt schedules, and increase cost.


Process: Unlike the long run, high speed, low variability parameters of conventional molding, insert molding presents an environment fraught with process challenges. The smaller lot sizes by definition imply multiple set ups. It is not uncommon for an operator to break down and set up several times over a

Continued on page 23

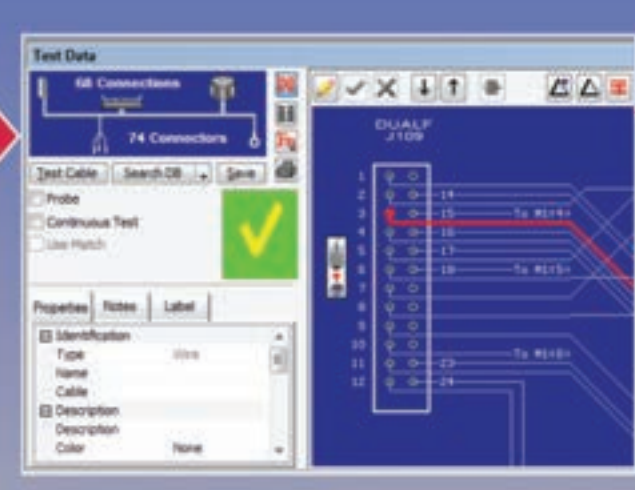
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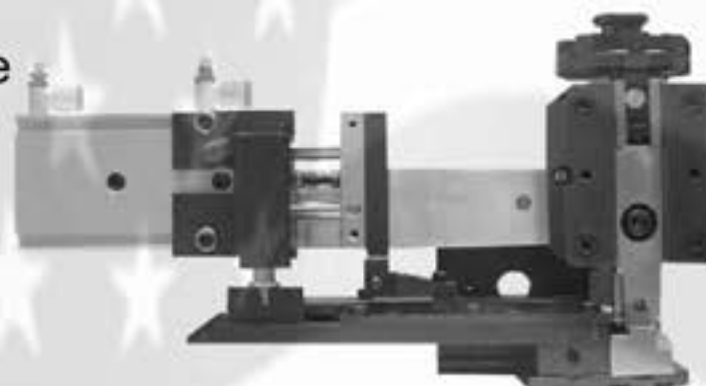


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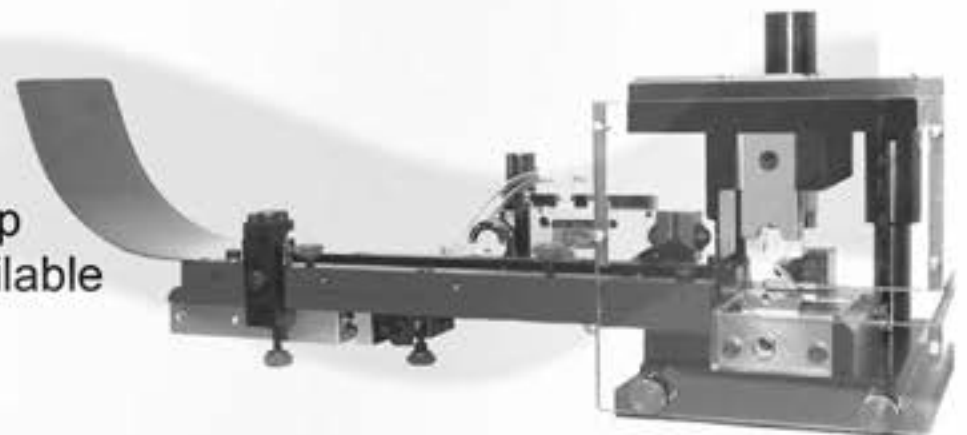


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CONTROL CABLES COLOR CODES

Standardized wire and cable color codes are essential in complex applications. Color codes decrease potentially hazardous confusion by ensuring cables are in compliance with applicable codes and providing a quick visual assurance that cables are connected correctly.

The most common standard used for control cables is ICEA (Insulated Cable Engineers Association) Standard S-73-532, NEMA (National Electrical Manufacturers Association) Standard WC57, *Standard for Control, Thermocouple Extension, and Instrumentation Cable*. This standard describes different methods of identification and provides tables of color sequences to use with these methods.

The ICEA/NEMA methods describe the way conductors are identified, for example using different insulation color combinations or using a single insulation color with printed numbers on each conductor. It is important to specify both the method and color sequence (if the selected method uses different insulation colors).

METHODS

Although there are many methods and color sequences within ICEA S-73-532 / NEMA WC 57, only a few are commonly used in industry. Methods 1, 3, and 4 are the most widely used:

- **Method 1** - Different color insulation with tracers
- **Method 3** - Single color insulation with surface printing of number and color designations
- **Method 4** - Single color insulation with surface printing of numbers only

COLOR SEQUENCES

Color sequences are the base and/or stripe colors that are assigned to each conductor in the cable. The two most common sequences are in Tables 1 and 2 of Appendix E of the ICEA/NEMA standard and are therefore referred as E-1 and E-2. It is important to note that in earlier editions of the ICEA S-73-532 / NEMA WC 57 the color sequences were located in Appendix K and were referred to as K-1 and K-2. Older wire and cable specs may reference K1 or K2 color codes, but they are the same as E-1 and E-2.

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E-1 consists of six basic colors (black, white, red, green, orange, blue). The colors then repeat with a colored band or tracer. The color sequence starts at the center and works outward in a circular pattern. The color sequence is clockwise when viewed from one end of the cable and counter clockwise when viewed from the other.

Color sequence E-1 cannot be used in all applications since the National Electrical Code (NEC) 2014 specifies that a conductor colored white can only be used as a grounded/neutral conductor (Section 200.6 Means of Identifying Grounded Conductors) and that a conductor colored green can only be used as an equipment grounding conductor (Section 250.119 Identification of Equipment Grounding Conductors). The use of Table E-1 color coding would therefore be in violation of the NEC in a cable having more than six conductors.

To address this issue, a different color coding sequence was developed by ICEA for cables that are used in NEC application. Table E-2 (formerly K-2) of the ICEA/NEMA standard provides this color sequence. If a white conductor is required the standard allows one to be inserted into Table E-2 as the second

conductor in the sequence. If a green insulated conductor is required, it likewise can be introduced into the table. However, the white and green colors may only appear once.

INDUSTRIES COMMON PRACTICES

Although there are eleven different ICEA/NEMA methods and seven different ICEA/NEMA color sequences for conductor identification, only three combinations are in common use as shown in Table 1.

The most common multiconductor control cables sized at 14 AWG–10 AWG use Method 1, Table E-2 color coding. The cables do not contain a white or green conductor. Control cables sized 8 AWG and larger typically contain three conductor cables having black insulation surface ink printed with the numbers 1, 2 and 3; also known as Method 4 color coding in the ICEA standards.

The electric utility industry often specifies control cables with the E-1 color coding sequence. For applications where the NEC is applicable, such as in industrial and commercial applications, the E-2 color sequence is normally used.

Continued on page 20

ICEA/NEMA Method	ICEA/NEMA Color Sequence	Type of User
1	E-1 (formerly K-1)	Utilities (non-NEC)
1	E-2 (formerly K-2)	Industrial/Commercial (NEC)
4	Not applicable	Miscellaneous

Table 1: Standard color code practices per industry.

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Continued on from page 19

Although it is important to specify the method and color sequence for control cables in all types of applications, specifying the individ-

ual colors is recommended. This is especially necessary for NEC applications that involve a ground and/or neutral in order to ensure the correct colors are applied during manufacturing.

INSTRUMENTATION AND THERMOCOUPLE WIRE COLOR CODE

There used to be a separate standard for instrumentation and thermocouple cables, ICEA S-82-552 (NEMA WC55) Instrumentation and Thermocouple Wire. It contained methods and color sequence tables for instrumentation and thermocouple cables. This standard was withdrawn in 2002 and instrumentation and thermocouple wires were moved into the ICEA S-73-532 / NEMA WC 57 control cable standard.

The ICEA instrumentation and thermocouple standard contained tables titled E-1 through E-4 as well, but in a different order so the tables did not match the ICEA control cable standard. This confusion no longer exists since instrumentation and thermocouple were moved into the control cable standard. The changes with the color sequence tables are shown in Table 2.

REFERENCES

- 1. "Standard for Control, Thermocouple Extension, and Instrumentation Cables." ANSI/ICEA S-73-532 NEMA WC 57: n. pag. Print.
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S-82-552 (Old)	Description	S-73-532 (New)
E-1	Color sequence without white and green (NEC applications)	E-2
E-2	Color sequence with white and green	E-1
E-3	Shades of color	E-6
E-4	Thermocouple extension color	E-8

Table 2: SS-82-552 Color Code Notation.

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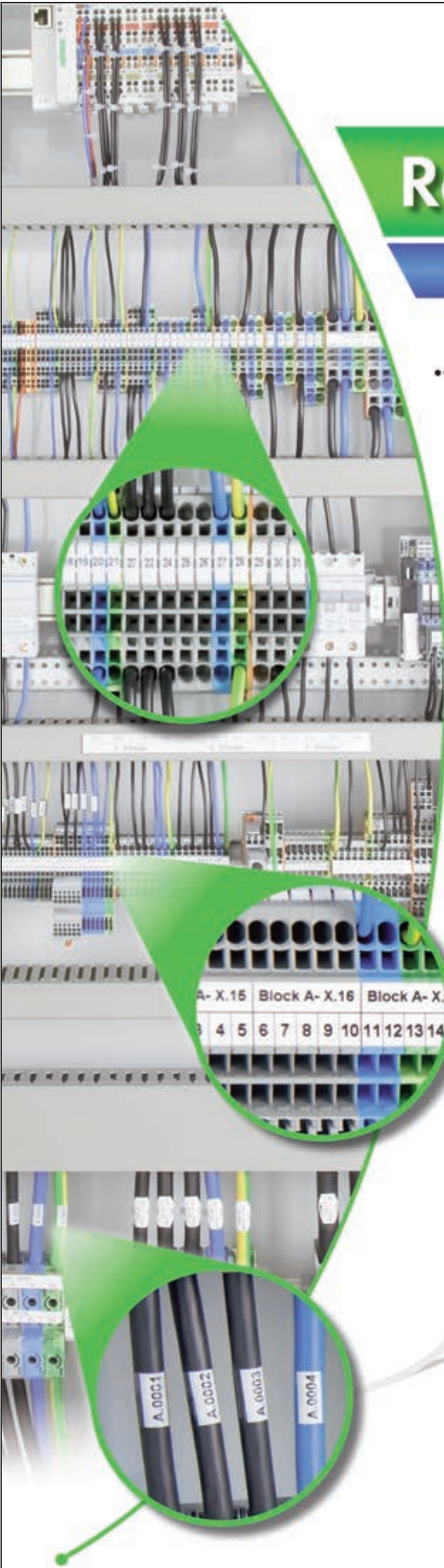
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Understanding Cable Assembly Molding

Continued from page 16

given day of production. With each set up comes not only down time, but the potential for set up scrap as each new manufacturing run obtains the proper conditions required by the specific product.

While a D-sub connector, for example, may meet certain universal specifications, frequently there are undocumented product characteristics that may vary from manufacturer to manufacturer and even between manufacturing lots from the same vendor. Because of the heat and internal pressure the molding process generates, marginal components may not be able withstand the conditions the process creates. This can result in the potential for not only scrap and downtime, but a complete cessation of production. Well designed tooling, well controlled sourcing, and experienced operators are the best defense against the effects of component variability.


In summary, the characteristics of conventional molding, namely, a high speed process with large lot sizes producing an ideally designed part all in an

automated environment are not part of the injection molding process associated with molded cable assemblies. In this world the process is bounded by variability within the components, non-uniform wall thicknesses required as part of the product specification, tooling considerations that often work against an optimum design, and a severely limited ability to automate.

For clients who understand the benefits of a molded product, which depending on the connector systems involved can include cost advantages over a fully mechanical approach, the selection of a vendor is the key to procuring a robust and reliable product. Ideally the manufacturer is an experienced vendor, has an established record of superior engineering and design support, has demonstrated success with molded cable assemblies across multiple markets, and can offer maximum control over the various manufacturing phases of the final product to include the wire and cable and mold tooling fabrication.

For more information or design assistance, please call C&M Corporation at 860 774 4812 or email us at sales@cmcorporation.com

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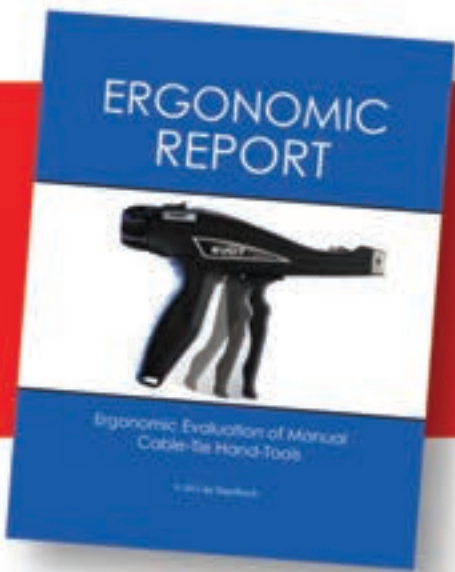
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NEWS PLUGS continued



Proheat STC® Dual Mode Heat Gun Senses & Controls Work Surface or Nozzle End Temperatures

Master Proheat STC, the world's first heat gun to sense, display and control work surface temperature, has revolutionized heating tools. Now Master introduces its new Proheat STC Dual Mode Heat Gun, Model PH-1610, combining the breakthrough STC Surface Temperature Control technology with standard electronic heat gun capability.

In STC Mode, this single heating tool with its high temperature, air-flow and power rating:

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- Allows locking the target surface temperature and airflow settings
- Greatly enhances process control over standard or conventional heat guns
- In Standard Mode, the Proheat STC Dual Mode Heat Gun:
 - Becomes a variable temperature, variable air-flow heat gun with Electronic Sensor measuring and controlling temperatures inside the end of the nozzle
 - Provides dial-in temperatures from 170°F to 1000°F and airflow from 4 to 16 CFM
 - Allows locking the temperature and airflow settings for supervisory control
 - Enables use of (19) optional professional quality, stainless steel, attachments for a full range of general heating applications, including soldering / desoldering, heat shrink tubing,

plastic welding and more Master Appliance Corp. is a leading designer and manufacturer of professional quality heat tools for industry. Assembled in the USA, the new MASTER PROHEAT STC® Dual Mode Heat Gun is available exclusively from select authorized Master Appliance Distributors. For more information contact Master Appliance Corp. at (800) 558-9413, at sales@masterappliance.com, or visit our website at www.masterappliance.com.



Master Appliance Proheat STC Dual Mode Heat Gun

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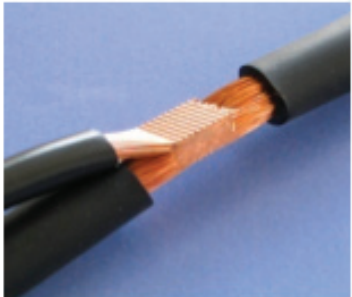
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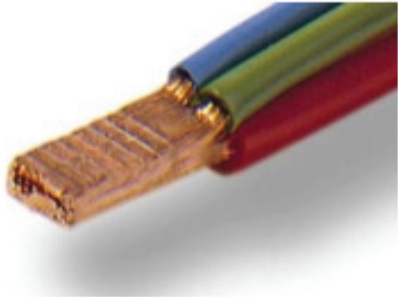
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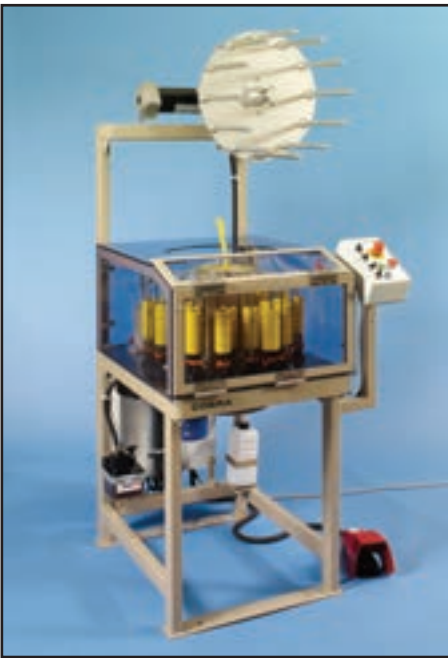
Cobra Braiding Expands Line of Harness Braiders

After feedback from customers in Mexico and Germany Cobra Braiding Machinery has expanded its line of harness braiders to include the Cobra 450 model P-2. This features a motorised capstan with rods, which allows operators to automatically feed harnesses through the machine and wrap the harness around the capstan. The system is also front facing enabling the operator to easily access the harness as it is being braided. An electronic clutch is incorporated to allow the operator to freely rotate the capstan when required. The coverage or pick control is now electronically controlled.

Like all Cobra braiders, they operate at 30% higher speed so improving profitability either reducing the time it takes to braid a harness or reducing the number of braiders required.

The Cobra 450 model P-2 also incorporates the normal features of the Cobra. A sealed oil bath eliminates the need for anti-slip mats or sand to absorb oil which drips onto the floor. Composite materials are used to reduce noise and to improve efficiency. The latest control systems eliminate the need for a mechanical clutch, so jog forward and reverse are available via simple button controls.

The Cobra is well recognised for the machines capability to accept large yarn packages. This reduces downtime as the Cobra braider will run for twice as long before having to be refilled. 2 strand pvc coated nylon yarns for vehicle harnesses are now starting to be used to provide greater mechanical protection and coverage on vehicle harnesses.



For wire or metal braids which are typically used in the aerospace market for EMI shielding, the package size can be increased upto 3 lb per spool. This eliminates the need for splicing on high performance harnesses.

President of Cobra, Neil Hyde comments that “users of our braiding machines continue to comment favourably on the higher profitability they achieve, resulting from greater productivity and lower overheads from reduced downtime and maintenance. My family has been manufacturing braiding machines for four generations, and the Cobra 450 Model P2 represents another addition to the Cobra family based on customer feedback”.

For further information email sales@cobrabraids.com.

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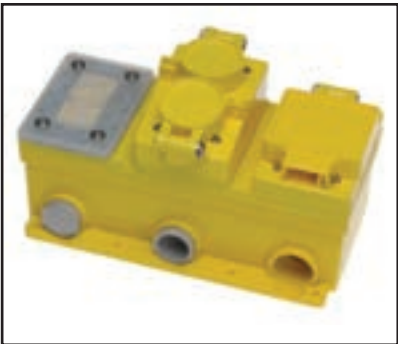
NEWS PLUGS continued



Molex Expands Woodhead® Watertite® Wiring Solutions Line With New FD Multiple Outlet Boxes Designed for Wet Locations and Harsh Industrial Environments

Molex Incorporated announces the expansion of its line of Woodhead® Watertite® Wet-Location Wiring Solutions, with the addition of three FD Multiple Outlet Boxes with Closure Plugs and Reducers.

The non-metallic Multiple FD Outlet Boxes are constructed of rigid PVC, making them extremely durable and resistant to impact, chemicals and solvents. Offering greater depth, they provide 30 percent more vol-



Non-metallic, multi-gang boxes for indoor/outdoor use offer greater depth and are NEMA 4X and IP66 rated to seal out moisture for increased protection of workers and equipment

ume than traditional FD boxes, and are available in single-, two- and three-gang configurations to provide greater flexibility.

NEMA 4X and IP66 ratings help ensure that the boxes retain a secure, reliable watertight seal to reduce the

risk of electrical shock, nuisance tripping, and other electrical hazards, even in environments where frequent high-pressure equipment wash-downs are required. The FD boxes are designed to be used conjunction with Woodhead Watertite plugs, receptacles and GFCI coverplate modules in a wide range of wet locations and harsh industrial environments. Typical applications include food, beverage and chemical processing facilities, oil and gas refineries, water treatment plants, and outdoor construction locations and event sites.

Tony Quebbemann, Molex product manager, Industrial Products notes: "Indoor and outdoor electrical connections exposed to moisture and harsh environments pose a significant risk of injury or even death to workers operating in those settings.

The Woodhead Watertite product line is the first in the industry to provide a totally integrated, watertight wiring solution to mitigate risk in environments requiring a higher level of GFCI protection. Molex continues to develop new and innovative products that can help improve electrical safety and worker protection, giving users greater peace of mind."

The Woodhead family of Watertite components is designed and built to perform reliably in a wide range of industrial and harsh environments. In addition to a selection of FD Non-Metallic Boxes, the Watertite portfolio also includes: GFCI coverplate modules and standard coverplates, cordsets, plugs, connectors and receptacles.

For more information about Woodhead Watertite products, visit www.molex.com/link/watertitewetlocation.html. To receive information on other Molex products and industry solutions, please sign up for our e-nouncement newsletter at www.molex.com/link/register.

KOA Speer Introduces 1 Watt-1206 Size Metal Plate Chip Current Sense Resistor

KOA Speer Electronics introduces the TLR2BW metal plate chip current sense resistor, featuring a 1 watt power rating in a 1206 chip size, and a low resistance of 1 mΩ ~ 20 mΩ. The metal alloy of the TLR2BW provides superior corrosion and heat resistance, with small size SMD type metal plate providing low resistance for current detection.

KOA Speer's TLR2BW resistor has a TCR of ±75



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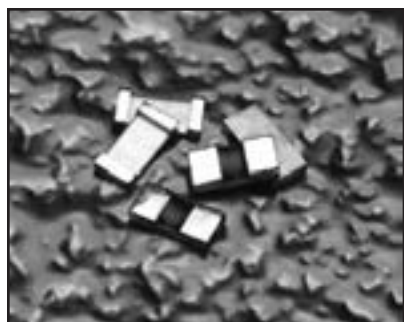


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Lead time for the TLR2BW is 12 weeks. Samples are available upon request.

KOA Corporation, whose global presence includes corporate headquarters in Japan, and sales locations in the USA, Germany, China and Singapore, offers a wide range of products which include thick and thin film resistors, current sensing resistors and resistor arrays; thermal sensors, fuses and varistors; wire wound, multilayer, power and thin film inductors; LTCC's and modules. KOA Speer Electronics, an affiliate of KOA Corporation, has served the electronics industry since 1980. Visit www.koaspeer.com.

RTI Launches New Website

RTI, a leading manufacturer of Schimmelman Wire Marking Machines and Dielectric Tubing has announced the launch of their new website at www.rectube.com.

"So much has changed here at RTI, it was time to do a major overhaul of our website and the information provided," said Dennis Sherlin, President of RTI. "This new site is far more user friendly and includes lots of detailed information about our products and services.

"We are sure our customers and prospects will find it of great value as they search for precision laser wire marking systems and dielectric tubing," added Sherlin.

The new website features a wide variety of tubing solutions, including dielectric kraft, phenolic

impregnated kraft, vulcanized fibre, Nomex, Ce-Quin I, II, V, Fiberglass, as well as combined materials.

Also featured is the company's line of quality Schimmelman wire marking machines, including hot stamp wire markers and foil, ink jet wire markers, laser wire markers, and thermal print tubing markers. To view these products, visit the new website at www.rectube.com.

Located in City of Industry, California, RTI provides precision laser wire marking and dielectric tubing to the defense, aerospace, aviation and

wire harness industries. Their dedicated and highly skilled engineering and manufacturing team apply innovative solutions to each project. The backbone of Rectangular Tubing's success remains their service oriented philosophy and long-term commitment to successfully meeting and exceeding the unique requirements of all their customers.

For more information about their products and capabilities, contact Dennis Sherlin at 626-333-7884 or visit their Website at www.rectube.com.

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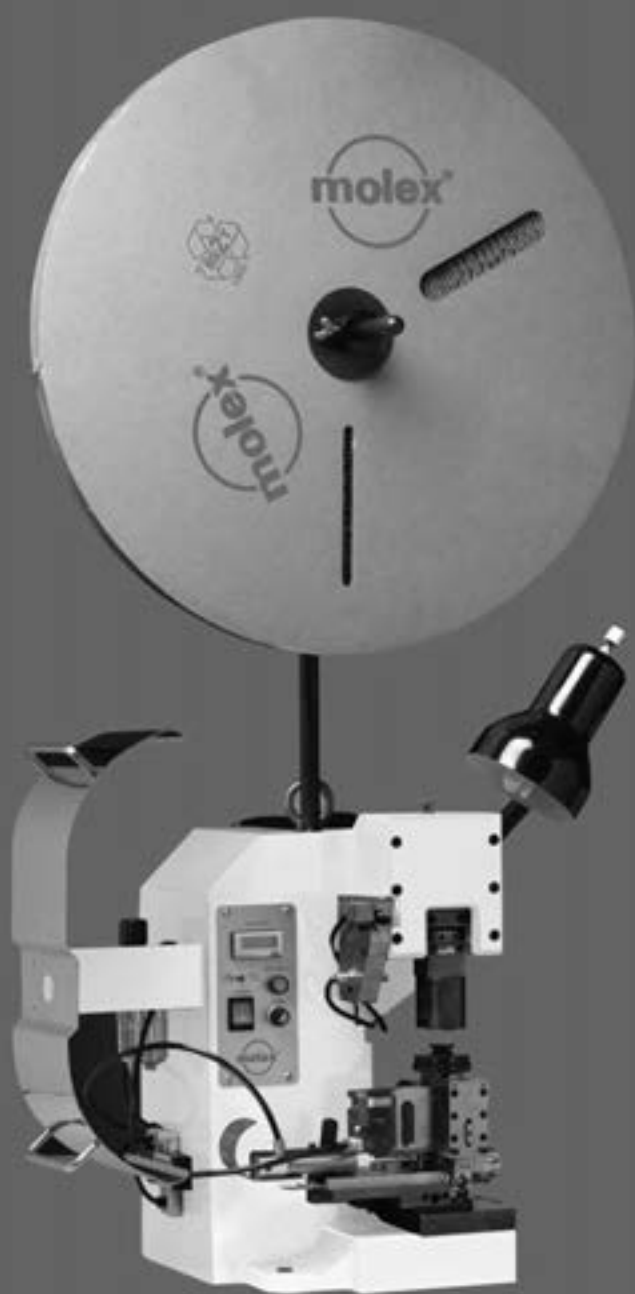




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- Accepts any Molex applicator and most industry-standard applicators
- Can be used with Molex Tape Module (64016-2000)
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The Tape-Terminal Crimp Module efficiently crimps terminals to wires from 4 to 30 AWG with minimal setup adjustments and achieves optimal cycle rates for mid-to-high volume, semi-automatic operations.

Features and Benefits of the Tape Terminal Crimp Module Include:

- Quick-change modular tooling accepts all existing ATP-201 and ATP-301 die sets
- Used in Molex TM-3000™ and TM-4000™ presses, which accept Molex applicators and most industry standard applicators
- Independent adjustment of insulation crimp height provides flexibility for various wire insulation thicknesses
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Lower Vibratory Amplitude and Higher Vibratory Force Provides Better Impedance Match for Successful Welding

Sonobond’s ultrasonic technology provides ultrasonic system capable of welding the tin-coated wires and terminals essential to electrical applications for high-temperature, high-humidity and other environmentally challenging conditions.

Tin-coated copper wiring is preferred for marine motors and electronics, appliances, solar panel wiring, and some automotive applications. Sonobond’s ultrasonic units can achieve consistently reliable welds that remain highly conductive without sacrificing the protective properties of the tin coating.

Advantages of the Wedge-Reed System

Sonobond’s Wedge-Reed System was specifically designed for high impedance metal welding. It combines low vibratory amplitude with high vibratory force, directed in a shear mode parallel to the interface of the materials to be welded. The shear mode is essential for ultrasonic metal welding.

The Wedge-Reed System uses a vertical, vibrating reed, driven by a wedge-shaped coupler and transducer assembly that’s perpendicular to the reed. With the line of static clamping force directly above the parts to be welded, high clamp force can be achieved with-

out bending stress or stalling. The tin coating is dispersed and the copper wire is welded without compromising the conductivity of the copper.

Ineffective Results with Welders Designed for Plastics

In contrast, many welders use a lateral drive system, combining high vibratory amplitude and low vibratory force, designed for low impedance plastic welding but rotated 90 degrees to provide the shear motion necessary for metal welding. The welding tip is part of – or attached to – a longitudinally vibrating transducer horn assembly driven parallel to the metals being welded.

“Because of its cantilevered approach, clamping force is applied some distance from the weldment, resulting in a bending moment on the coupler that limits static force. While this lateral positioning works for many applications, it does not produce acceptable welds for tinned or oxidized wires and terminals,” explains Janet Devine, Sonobond president.

The Sonobond Difference

By definition, the impedance is proportional to vibratory force and inversely proportional to vibratory distance or amplitude. With Sonobond’s Wedge-Reed System, the vibratory amplitude is about one-third and the vibratory force is about three times that of a lateral drive system operating at the same power level, resulting in an impedance value about nine times that of the lateral drive system. Since the density of the material being welded determines the load impedance, the Wedge-Reed System provides a much better impedance match to a metal weldment than a lateral drive system because most metals are six to nine times more dense than plastics.

Reducing Cost and Increasing Efficiency

Previous production methods for tin-coated assembly have included mechanical crimps and resistance welding but neither provides acceptable results.

“Mechanical fastening is inconsistent and resistance welding or soldering use more energy and often produce inadequate bonding,” explains Devine. “Our ultrasonic method is less expensive, uses a fraction of the energy needed for resistance welding, ensures RoHS compliance which is problematical with soldering, and speeds up the production process.”

Sonobond Equipment Options

Sonobond offers a variety of ultrasonic welders that handle a range of wire bundle sizes starting at one sq. mm. Its SpliceRite™ units provide one-pulse wire splicing of up to 100mm² in stranded bare copper wire and tinned wire to 60mm². Its SonoWeld® and Dual Head Spot Welders can be custom-tooled to suit special configurations such as wire to

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The all-new WT3-200 wire terminal tester is an integrated solution for measuring wire and tube termination pull force. An ergonomic lever easily produces up to 200 lbF (1,000 N) of force for wire diameters up to 0.25 in (6.3mm). The WT3-200 includes a long list of features and functions, such as data outputs via USB, RS-232, and Mitutoyo, on-board data storage for 1,000 readings with statistical calculations, password protection, and more. It can be operated on a rechargeable battery power, or AC. All at a competitive price of just \$2,195.

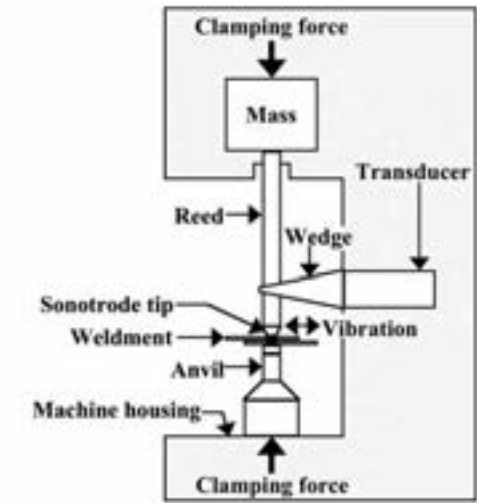
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Sonobond's Wedge-Reed System, designed for high impedance metal welding, combines low vibratory amplitude with high vibratory force directed in a shear mode. It uses a vertical, vibrating reed, driven by a wedge-shaped coupler and transducer assembly that's perpendicular to the reed. With the line of static clamping force directly above the parts to be welded, high clamp force can be achieved without bending stress or stalling.

terminal applications. Sonobond's equipment also welds tinned wire to other bare and coated wires or terminals, completing most assemblies in less than one second with minimal operator training.

All machines feature a microprocessor controller that can program welds by height, energy or time, and store and recall up to 250 jobs. Plus, all units have heat-treated, taper-lock tips that are able to be redressed and can produce up to 100,000 welds before being discarded. They're easily replaceable without requiring machine readjustment or calibration. Additionally, Sonobond equipment offers automatic frequency control and overload protection, and can detect and prevent wrong-part or no-part welding when equipped with an optional distance measuring device.

Free Welding Viability Test

To ensure that Sonobond equipment meets their needs and specifications, manufacturers are encouraged to take

advantage of Sonobond's free, no-obligation Ultrasonic Welding Viability Test. "We use materials provided by the manufacturers, enabling them to confirm that our units will deliver the quality welds they need," says Devine.

Sonobond service and technical support is provided before, during and after installation, ensuring its equipment is properly incorporated into the customer's production process.

For more information on Sonobond's ultrasonic technology, equipment or submitting materials for a free Ultrasonic Welding Viability Test, please visit www.SonobondUltrasonics.com.

You can view an informational video on Ultrasonic Wire Splicing, and view or download our Ultrasonic Metal Welding Primer and our Wedge-Reed vs. Lateral Drive Ultrasonic Welding System Comparison on our Metal Welders section. Call 800-323-1269, 610-696-4710, or email JDevine@SonobondUltrasonics.com for immediate attention.

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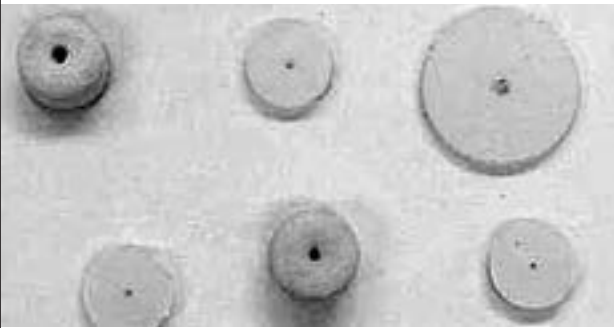
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NEWS PLUGS continued



Nordson EFD Introduces Updated ValveMate Controller

Nordson EFD, a Nordson company a leading precision fluid dispensing systems manufacturer, introduces the 7160RA ValveMate™ controller.

The controller provides an intuitive way to program Nordson EFD's 782RA internal Radial Spray Valve and 7860C-RS Radial Spinner System. The controller's unique microprocessor circuitry provides exact time control of the dispense cycle with an improved user interface.

"The valves used for dispensing are very important, but it is the con-

troller that actually drives the consistency and reliability of the dispensing process," said Claude Bergeron, Nordson EFD global product line manager. "ValveMate controllers provide the primary control of the deposit size. They bring fluid dispensing control close to the dispense valve and provide numerous user-friendly features that simplify valve set-up and operation, maximizing automated assembly machine efficiency and convenience."

The ValveMate 7160RA controller is a fast, convenient way to make on-the-fly adjustments for Radial Spray or Radial Spinner system applications. Spray or dispense valve open time can be adjusted in increments as small as 0.001 seconds.

For Radial Spray installations only,



7160RA ValveMate™ controller

an air pressure regulator provides low-volume, low-pressure (LVLP) air to the nozzle, providing a high transfer efficiency without overspray. The result is an exceptional spray pattern definition without time-consuming programming or mechanical adjustments that could shut down the production line.

Nordson EFD's 782RA Radial Spray valve is a precision spray valve that produces a narrow radial output ideal for coating the interiors of cylinders using a rotating air cap. LVLP technology enables uniform coatings of lubricants, primers, and other low- to medium-viscosity fluids. When paired with the ValveMate 7160RA's built-in air pressure regulator, specially atomized nozzle air ensures high transfer efficiency without overspray. Instant fluid cutoff at the end of the spray cycle ensures that coatings are applied evenly from start-up to shutdown.

Similarly, Radial Spinner Systems apply consistent bands of low- to medium-viscosity fluids, such as lubricants, solvents, and silicone oils. During operation, the system dispenses a controlled amount of fluid onto a spinning disk. As the fluid leaves the edge of the disk, it is evenly distributed onto the production part. When controlled by the ValveMate 7160RA, the process combines precision with convenience to facilitate radial dispensing applications.

For more information visit Nordson EFD on the web at www.nordsonefd.com, www.facebook.com/NordsonEFD, or www.linkedin.com/company/nordson-efd, email info@nordsonefd.com, or call +1 401.431.7000 or 800-556-3484. For Nordson EFD LLC sales and service in over 30 countries, contact Nordson EFD or go to www.nordsonefd.com.

Nordson is also a leading formulator of specialty solder pastes for dispensing and printing applications in the electronics industry.



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- **Hand tools** combine ease of use with reliability and precision.
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Tesla Motors Drives Innovation with Schleuniger

It is possible that a few wire harness manufacturers today operate in conjunction with a labor union, but in my many



Schleuniger's RotaryStrip 2400

Tesla Motors is known for making some of the best electric cars and electric powertrain vehicles in the world, and as a company that began as a Silicon Valley start-up, it is expected to move fast and constantly be innovating. Yet, when prepping the wires used in its vehicle batteries, Tesla's method was not living up to this reputation. The stripping and twisting of these wires was done either by hand or inefficient machines that didn't fully meet Tesla's needs. The company needed a solution that could strip and twist the wires precisely and quickly in one easy step,

while ensuring the final product met Tesla's high quality standards.

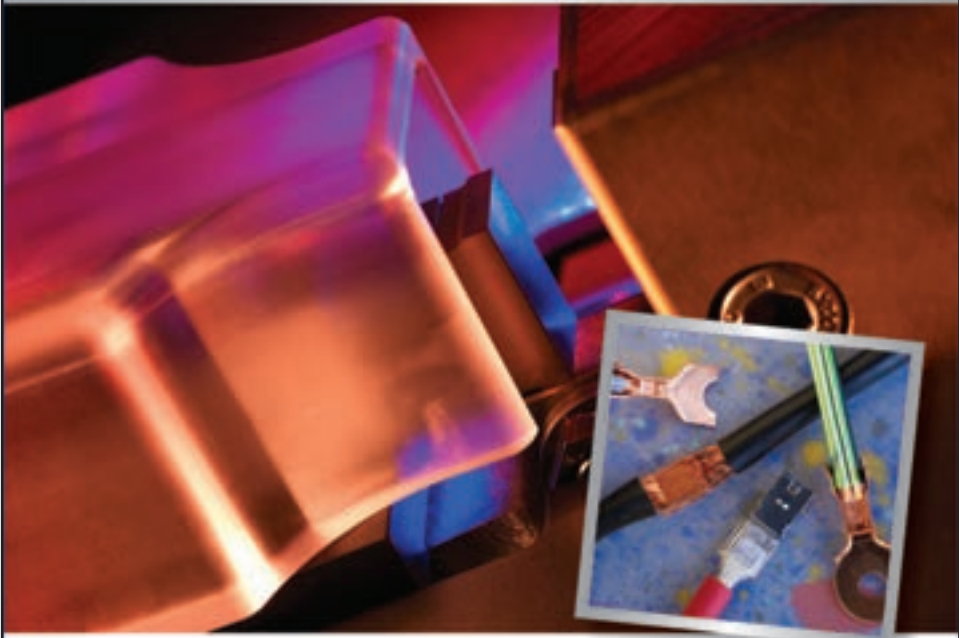
Tesla Motors' Quality Engineer, Raul Smith, turned to Schleuniger and one of Schleuniger's newest machines, the RotaryStrip 2400, to take the company's wire processing to the level they were looking for. "The previous machines we were using did not have the precision or twisting capabilities that are essential to our application. The RotaryStrip 2400 performs these actions to the standards we were looking for," says Smith.

Tesla Motors adheres to strict standards, such as the IPC 620 Class 3, which does not allow for any nicks on the processed wires. According to Smith, the RotaryStrip 2400 easily helps Tesla to "meet or exceed these standards."

Since implementing the Schleuniger machines, Tesla Motors has seen reduced processing time and has gained assurance that the wires are being processed precisely each time. In addition, due to the increased efficiency, Tesla was able to cut six processing stations from the production floor adding back valuable space.

For further information contact Schleuniger, Inc., 87 Colin Drive, Manchester, NH 03103. Phone (603) 668-8117 or contact the Toll Free Technical Support at (877) 902-1470. Visit www.schleuniger.na.com.

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TLC Electronics Celebrates 30-Year Anniversary



Guests and employees all received a "formal" Tuxedo T.

TLC Electronics, Inc. hosted its 30-year anniversary celebration and bid a happy retirement to co-founders Rich and Terri Crofford on June 26, 2014. The event was held at the company headquarters located in St. Paul, MN and included a luncheon, a slide show detailing TLC's historical timeline, a brief presentation by TLC president Jon Crofford and facility tours for guests.

Jon Crofford noted, "The employees, suppliers and customers of TLC Electronics have been touched by the ingenuity of Rich and the generosity of Terri. We look forward to carrying on the tradition of meeting our customers' needs by providing creative solutions to meet their electromechanical component and sub-assembly requirements. We will continue to strive towards providing a track record of revenue growth for our suppliers and an environment of personal growth and empowerment for our employees."

Each guest and employee received a "formal" Tuxedo T imprinted with TLC's logo and tagline "Providing Solutions for Over 30 Years". In addition, each attendee received a blue tumbler imprinted with TLC and HellermannTyton logos.

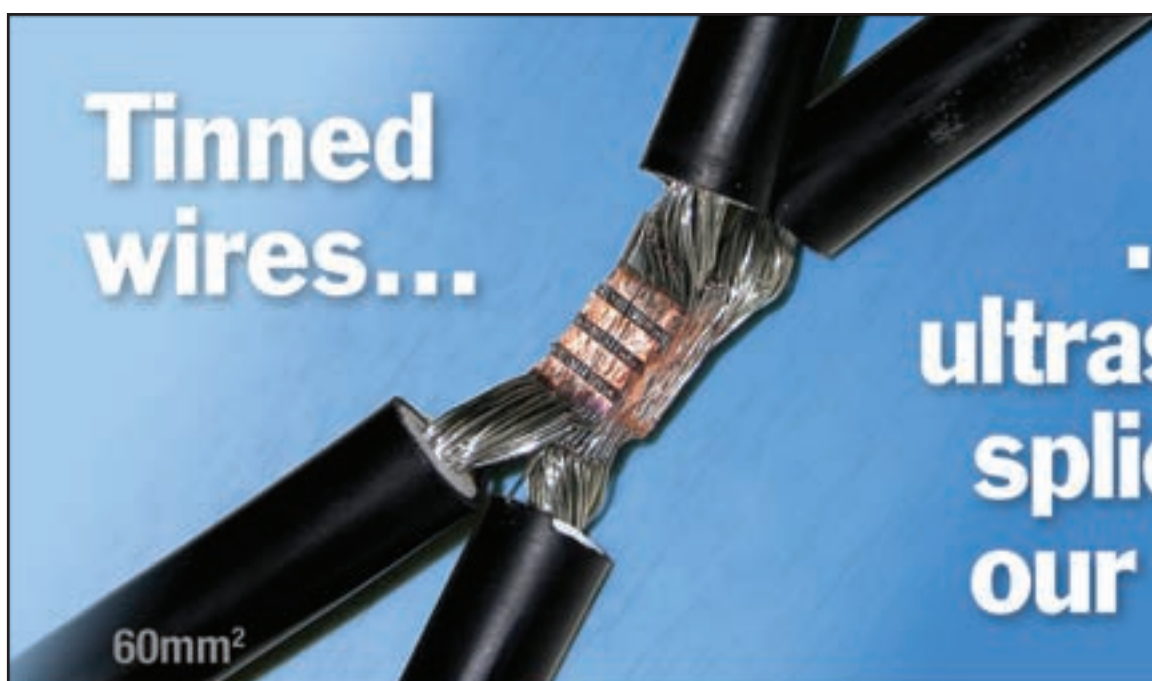
Following the luncheon, a small golf outing was arranged in order to prepare Rich for his retirement plan of improving his golf score.

Founded on June 4, 1984, TLC Electronics, Inc. is a leading distributor of interconnect and electro-mechanical products offering a wide range of value added services to meet customer specific applications. These value added services include precision wire and cable assembly, fan and blower assembly, battery assemblies, power supply modification, electromechanical sub-assembly including turn-key enclosure assembly and drafting services.

TLC Electronics is certified under ISO9001:2008 and is UL/CUL recognized. TLC's account managers and inside sales personnel are trained in the electro-mechanical product lines and services offered. TLC personnel are prepared to assist customers and prospects with solutions for their specific application. See www.tlcelectronics.com for more details on the products and services offered by TLC Electronics.

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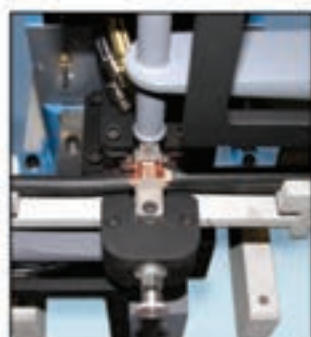


60mm²

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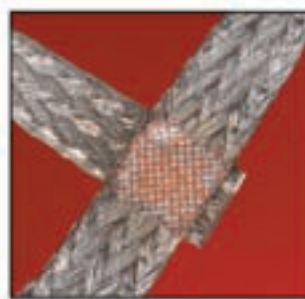
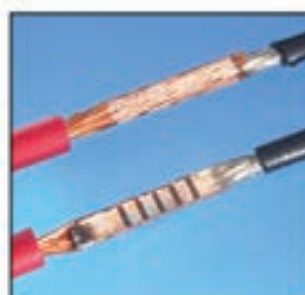
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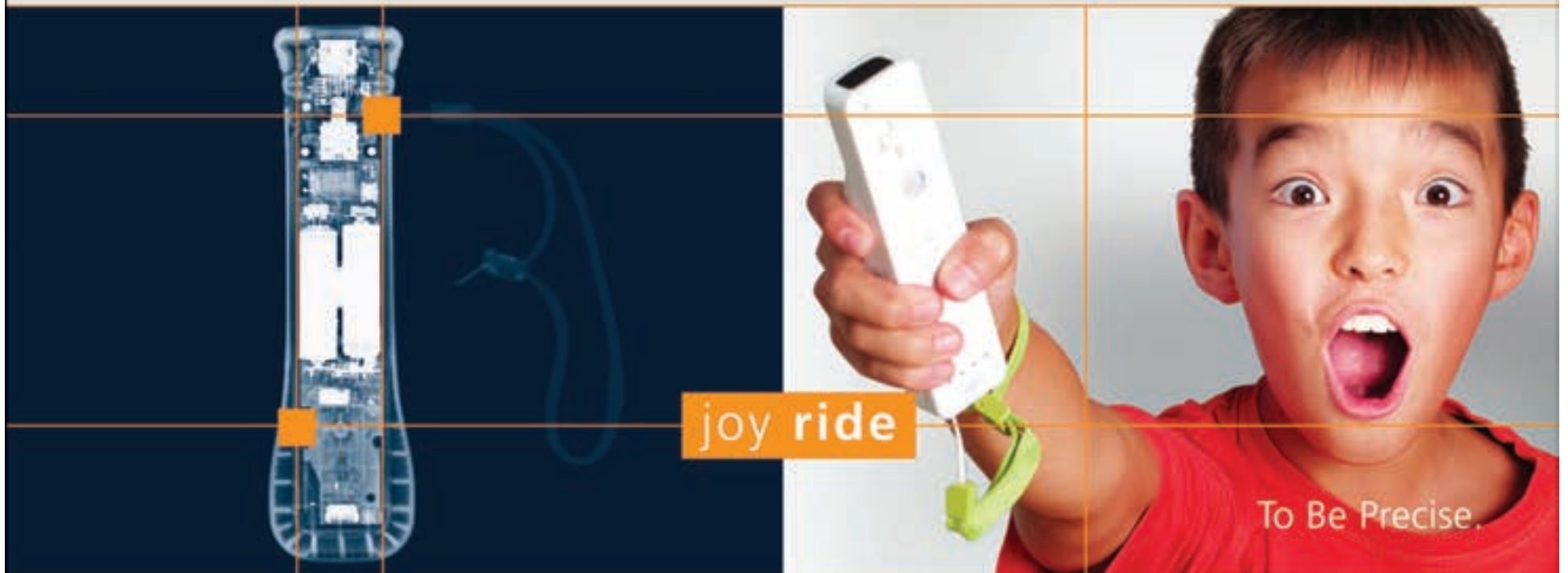
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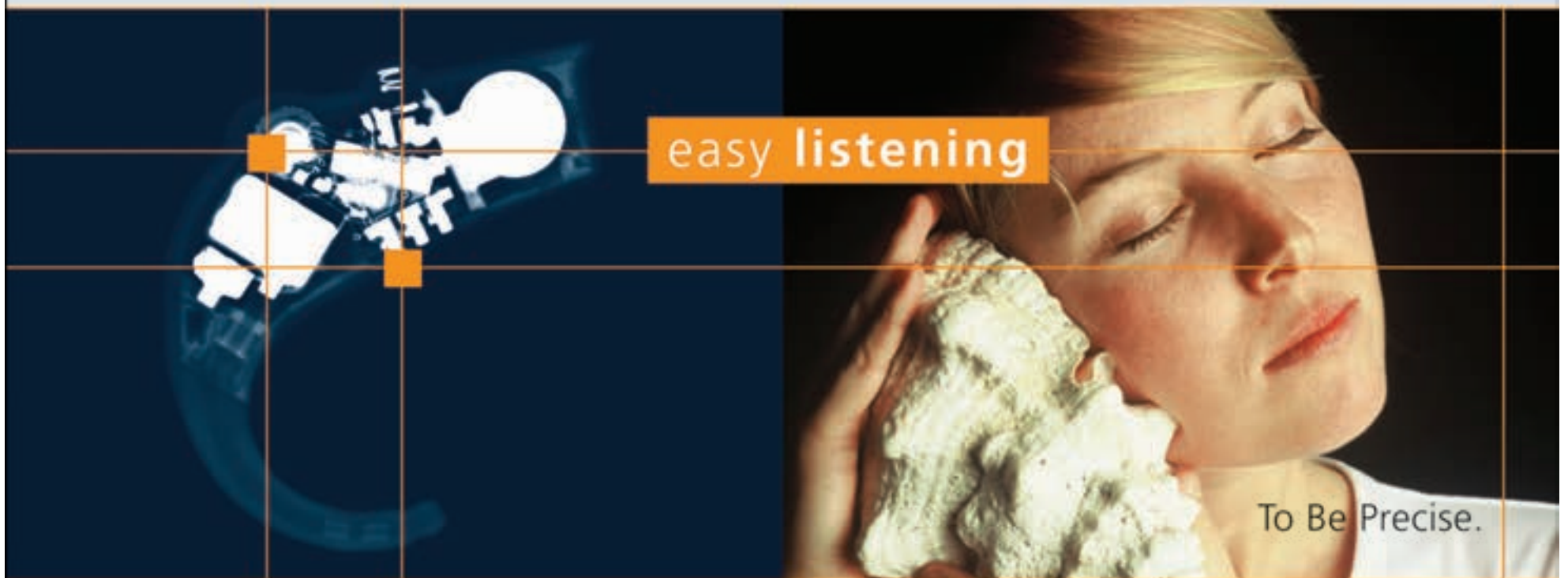


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"Schleuniger has been an integral part of our company's growth. Because of the time savings and increased productivity, we decided to purchase another Schleuniger machine and then another. These machines became our only method of stripping coaxial cables." **Joe Di Diego, Custom Cable Assemblies**





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"It has been my pleasure to collaborate with Schleuniger for over 15 years – standardizing on the Schleuniger brand for all of our wire processing equipment plant wide. Our Schleuniger sales rep's knowledge of the challenges our industry faces always impresses, and his involvement in crafting solutions to these issues is very much appreciated. We confidently look forward to growing our business, knowing we have a strong partner in Schleuniger!" **Kevin Hooiveld, ED Products**



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NEWS PLUGS continued

New Heavy Duth Connector Series from Amphenol for Size 8 and Size 12 Power Contacts Offer Higher Power

Amphenol Industrial Products Group, a global leader in interconnect systems, now offers a heavy duty connector series for size 8 and size 12 power contacts. The new ATHD series is a single pole, rugged, in-line connection system designed to replace splices as well as provide power wherever needed. Using Amphenol's exclusive Radsok technology, the connector can reach higher amperages than other connectors in its class.

Ideal for rugged, high vibration applications found in the heavy equipment and mining markets, these sealed, thermoplastic connectors are field installable and repairable, eliminating the need for costly, non-repairable splices. The connection systems also feature clip slots for a variety of harness mounting solutions.



Amphenol's Heavy Duty Connector Series

The size 8 system is rated to 70 amps continuous with the Radsok

terminals and has a contact retention of 156 N. The size 12 system is rated to 35 amps continuous with the Radsok terminals and has a contact retention of 133 N. The ATHD series is RoHS compliant and has an IP67 rating. Standard machined and stamped and formed contacts are also offered for both sizes with a variety of platings. The size 12 system has special stamped and formed contacts that will crimp to 16 gage cable where less amperage is needed. Both the size 8 and size 12 power contacts can perform up to 100 mating cycles and have an operating temperature range of -55° C to 125° C. They each have an operating voltage of 1,000 VAC and dielectric withstanding voltage of 1,500 VAC. Insulation resistance for each connector is 1,000 M Ohm.

For more information visit www.amphenol-industrial.com.



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Chemtronics® Introduces FOCCUST™ Fiber Optic Cleaning Catalog

Chemtronics has released a new fiber optic cleaning catalog featuring their FOCCUST™ branded products.

The catalog features a full line of cleaners, cleaning kits, cleaning pens, and specialty swabs and wipes for fiber optic connector cleaning.

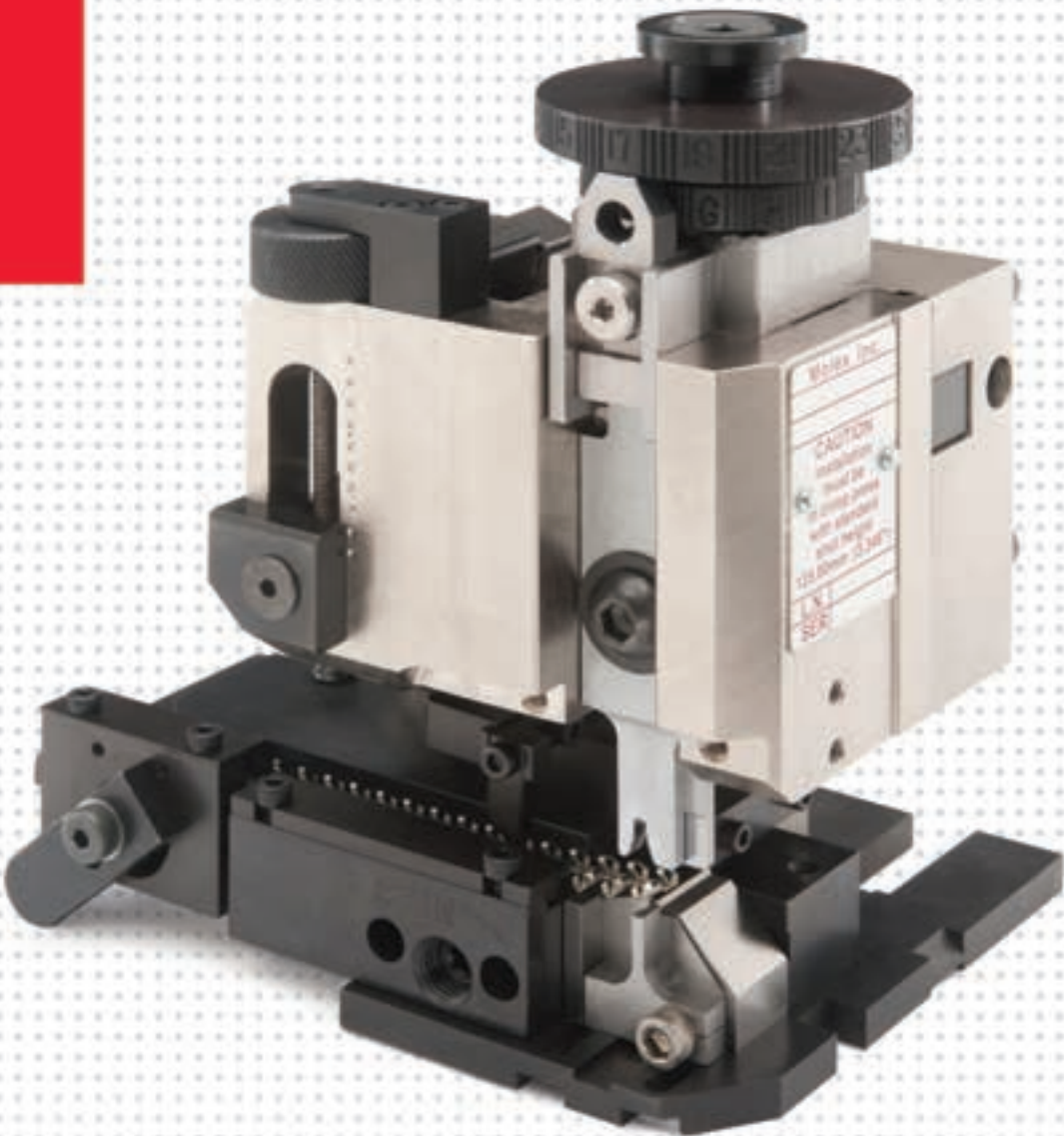
FOCCUST™ products are designed with patented technology that use the proprietary Combination Cleaning™ process. Combination Cleaning™ improves fiber optic transmission speeds by eliminating contamination that lowers bandwidth.

For Combination Cleaning™, a cleaning pen or aerosol is used to place a drop of solvent on a lint-free wipe, like what is available in the FOCCUST™ QbE Cleaning Platform. The end face is then lightly drawn in a straight line from the solvent over to the dry portion of the wipe, removing the soils and drying the end face in one motion.

Chemtronics® is an industry leader in solutions for the electronics, telecommunications and critical environments markets. Their products are engineered to meet a full array of cleaning, protecting and repairing needs. Products include degreasers, defluxers, conformal coatings, Static-Free products, desoldering braid, board repair pens, swabs, wipes, and fiber optic cleaners.

For more information visit www.chemtronics.com.

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NEWS PLUGS continued

Fairview Microwave Debuts Comprehensive Lines of IP67 RF Adapters

Fairview Microwave Inc., a preeminent supplier of on-demand microwave and RF components, introduces a comprehensive line of IP67 RF adapters commonly employed in the DAS, cellular, aviation and military industries due to their ingress protection from water and dust.

Fairview Microwave's new RF adapters are IP67 rated, meaning they use advanced ingress protection to make them virtually impenetrable to contaminants like dust, sand, and water. Offered in this release are in-series adapters including 7/16 DIN, 4.1/9.5 mini-DIN, Type-N and TNC. Between-series versions include 7/16 DIN to 4.1/9.5 mini-DIN, 7/16 DIN to Type-N and 4.1/9.5 mini-DIN to Type-N. They are compatible with all like-series connectors, cables and passive and active components. Each adapter operates to 6 GHz with excellent VSWR of 1.15:1 to 1:25:1 depending on the connector type.

Fairview's ingress protected RF adapters also come in two different versions, "Mated" and "Unmated". "Mated" adapters meet the require-

ments of IP67 only when both ends of the adapter are terminated in mating connectors. "Unmated" adapters meet the requirements of IP67 even when one or both ends of the adapter are unterminated.

"In outdoor RF communications installations, ingress protection against dust and water is imperative. This new line of IP67 adapters offers the highest level of dust and water protection without the addition of costly and time-consuming weather-proofing tapes", says Greg Arnold, Technical Sales Manager at Fairview Microwave. "Our extensive offering includes IP67 adapters compliant in the mated and unmated condition ensuring you get the level of protection you need."



Amphenol's Heavy Duty Connector Series

Fairview Microwave's IP67 adapters are in-stock and available now. You can view these new products by visiting <http://www.fairviewmicrowave.com/rf-products/ip67-rf-adapters.html> directly. For

additional information, Fairview can be contacted at +1-972-649-6678.

TLC Announces New Production Manager

TLC Electronics, Inc. is pleased to announce that Peter (Fong) Xiong has been promoted to Production Manager at TLC Electronics, Inc.

Xiong was previously the production supervisor for TLC Electronics' value added production operations. Xiong has over 17 years of experience in the manufacturing industry with 14 years at TLC Electronics. Prior to TLC, Xiong's experience included manufacturing positions at ADC Telecommunications and Medtronic.

"Peter's previous leadership experience in TLC's cable assembly manufacturing environment along with his record of achievements at TLC makes him an asset to TLC's customers, suppliers and fellow employees. This promotion is another testament to TLC's commitment to place highly qualified individuals in key roles within TLC to strengthen the company's position in the marketplace and continue our aggressive growth pattern", said Jon Crofford, President of TLC Electronics.

Reporting to TLC's president, Xiong's new responsibilities will include managing and training TLC's manufacturing personnel, job trafficking and overall manufacturing floor supervision.

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TR201 Series
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Both twisting / tinning and crimping can be changeable with quick change (TR201SS). Lead-free and regular tinning can be handled with the tinning unit.



TR202 Series
High Precision Crimping For Medium and Large Wire Gauges 28-16 AWG
Stylish body with white and stainless steel color. Single end twisting/tinning and crimping can be changeable with quick change (TR202S). Lead-free tinning can be also processed.

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

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Peter Xiong, TLC Electronics Inc

TLC Electronics, Inc., based in St. Paul, MN is one of the Midwest's largest regional distributors of electromechanical components and value-added manufacturers of wire assemblies, cable harnesses and electro-mechanical sub-assemblies for the electronics industry. See www.tlcelectronics.com for additional details on the company.

FASTAP™ with Lineman Assist™ A Novel Solution to an Age Old Problem

BURNDY® introduces FASTAP™ with Lineman Assist™ pioneering a novel solution to an age old problem. Parallel groove clamps are an industry staple for mechanical tapping of utility lines. For decades these connectors have provided a safe, reliable, and easy to install solution for most utilities. The BURNDY

FASTAP with Lineman Assist adds innovative features to this tried and true connector technology improving safety, reliability, as well as ease and speed of installation.

FASTAP™ adds three unique features to the standard parallel groove clamp: spring loaded Lineman Assist™, duckbill handle, and a conductor side entry capability. These three features work in concert to improve the installation speed, safety, and reliability of the connection. The installation begins when the lineman squeezes the duckbill handle to allow the tap conductor to be side-loaded into the connector. This side entry feature enables faster insertion of the tap conductor without removing any of the pre-filled oxide inhibitor that is necessary for a reliable connection.

The innovative spring assist then acts as a third hand by providing a constant force on the tap conductor and securing it. Using the duckbill as a guide, the lineman then snaps FASTAP onto the run conductor, tightens, and the

connection is complete. The entire process literally takes only seconds.

With increased visibility from the public during storm restorations, utilities are looking for solutions that quickly restore power in a safe, reliable, and cost effective way. The FASTAP™ duckbill design allows linemen to easily handle the connector with dielectric gloves in cold, wet, and icy environments. Add in the Lineman Assist™ feature and the linemen can now focus on getting the lights back on and not worry about the conductor falling out prior to tightening.

Headquartered in Manchester, New Hampshire with 90 years of dedicated customer support in both service and



FASTAP with Lineman Assist from BURNDY®

product. Our customers need to look no further than BURNDY for all their connector, tool, and accessory needs. BURNDY is the only manufacturer to have the BURNDY® Engineered System of coordinating dies, connectors and tools. The three elements have been specifically designed to work together and engineered to meet stringent, accepted quality standards - allowing the user complete confidence in the integrity of the connection.

For additional information, contact us at 47 East Industrial Park Drive, Manchester, New Hampshire 03109; call Customer Service at 1-800-346-4175; or visit our website at www.BURNDY.com.

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NEWS PLUGS continued

Gladding Braid Expands Product Range with Acquisition of Belgium's Eaton Filtration Braiding Assets

Gladding Braided Products, a New York State wire braid manufacturer and braided shielding provider, reports that it has acquired the braiding equipment assets of Eaton Filtration LLC's Belgium braiding operations.

This acquisition expands Gladding's capabilities for shielding wire over larger cables. Gladding's expanding technology is now used on cables servicing the oil, natural gas, electric utility, and submersible oceanic installations. Besides its own products, the Belgium equipment will expand Gladding's capacity for over-braid shielding (of wire and textile fibers) via its sub-contact braided shielding operations, doing the work for other cable companies. As more companies

choose to "out-source" their braided shielding (copper, steel, bronze) to Gladding's New York State factory, Gladding's added capacity will assure faster turn-around times and added capacity.

"With this acquisition," explained Gladding's president, DH Sparky Christakos, "Gladding is prepared to further sub-contract for others in the cable industry. Cable manufacturers are recognizing that outsourcing their braid work to Gladding saves labor, time, space, and man-power. Turn-around time is critical", explained Christakos, "and this additional equipment from Belgium gives us capacity to offer a one week turnaround, if needed."

The Eaton machinery has been installed in Gladding's main plant, a 100,000 square foot braiding facility in Chenango County, near Syracuse New York.

To learn more about this and other opportunities at Gladding visit their website, www.gladdingbraid.com or call 315-653-7211.

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*** FOR SALE ***

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- 1 - NEB 32-Carrier #2 Harness Braider, Capstan Wheel, Spring Carriers, Center Braid Tube, Head Guard, Motor, Long Legs, Steel Base Plate
- 1 - NEB 32-Carrier #2 Harness Braider, 24" Capstan Wheel, 2BX Wire Carriers, Double Thick Track Plate, Center Braid Tube, Carrier Guard, Motor, Speed Control, Foot Pedal, Long Legs, Steel Base Plate
- 1 - SCHLEUNIGER CC12 Crimp Center, Dual Crimp Station plus Crimp Force Monitor, Manuals, spare parts, full range of Adapters, new 2000
- 1 - SCHLEUNIGER CS9100 Cut/Strip Machine with a PF2000 Prefeed
- 1 - SCHLEUNIGER CS9100 Cut/Strip Machine with a CA9170 Rotary Stripping attachment, 1995
- 1 - SCHLEUNIGER CS9050 Cut/Strip Machine
- 1 - SCHLEUNIGER ES9300 EcoStrip Cut/Strip, 2007
- 1 - SCHLEUNIGER EC3200 EcoCut, #34-2007
- 1 - SCHLEUNIGER UC3750 Cutter, for wire, tubing, round and flat cables
- 1 - SCHLEUNIGER US2100 Stripper
- 1 - SCHLEUNIGER US2015 Stripper, for wire sizes 32-14ga; strip length .04" - .78"
- 1 - SCHLEUNIGER FO7045 Fiber Optic Cable Stripping Machine
- 1 - SCHLEUNIGER PF2200 Prefeed
- 1 - SCHLEUNIGER PF2000 Prefeeder
- 1 - SCHLEUNIGER PF1100 PreFeeder
- 1 - SCHLEUNIGER PF1000 PreFeeder (repairs required)
- 2 - SCHLEUNIGER CP1500 Heavy Duty Coilers
- 2 - SCHLEUNIGER Uni-A Applicators
- 2 - SCHLEUNIGER CT32, CT42 Crimp Presses
- 1 - SCHLEUNIGER HS4500 Hot Stamper
- 1 - SCHLEUNIGER PT25 Pull Force Tester
- 1 - KOMAX Kappa 235 Cut & Strip Machine w/MECHTRIX MPF-33-LCS Prefeed, '08
- 2 - KOMAX Kappa 235 Cut & Strip Machines w/Prefeeds and Conveyors, Mexico
- 1 - KOMAX Kappa 320 Cut & Strip Machine, 2009/10, absolutely Like New
- 1 - KOMAX/WEIDENBACH Model IMS 291 InkJet Printer
- 1 - EUBANKS 8000-01 Cut and Strip Machine w/Prefeed, Model 6880-05
- 1 - EUBANKS 4000-04 Tandem Cut and Strip Machine, #890-151
- 1 - EUBANKS Wire Processor, Model 9800-01
- 1 - EUBANKS Wire Processor, Model 4900-01
- 2 - EUBANKS Model 2600 Cut & Strip Machines
- 1 - EUBANKS Model 02700 Cut & Strip Machine w/6215 Prefeed
- 1 - EUBANKS Model 67200-02 Wire & Tube Marking Machine
- 1 - ARTOS CS326 Cut/Strip Machine (2010) with a PF-6 Prefeed (2011)
- 1 - ARTOS Model AM.STRIP.50 Pneumatic Cable Stripper, 2008

PLUS: IDEAL Model STP Stripper, Part #45-930; RENNSTEIG Model CM-25-1 Pneumatic Crimper, 2006; CARPENTER Model 70B Strippers (3); MEGOMAT Model ASM3001-U Cut, Strip, Crimp Machine w/Crimp Force Monitor, 1996; METRONIC Alpha Jet C Inkjet Printer, 2006/07; MULTITECH 55T Injection Molding Machines, used 1 year; ARBURG 35T Injection Molding Machine, new



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Material Suppliers Will Offer Customer Service Centers at NPE2015 to Accommodate Processors, Designers and OEMs

Among the many raw material suppliers that will participate in the NPE2015: The International Plastics Showcase, several plan to offer "Customer Service Centers" where they can engage with processors, designers, OEM/Brand, and other business professionals in comfortable facilities convenient to the exhibit floor, it was announced today by SPI: The Plastics Industry Trade Association, which produces the triennial NPE.

Thus far nine companies have committed to purchase space for Customer Service Centers, and several more firms are in discussions with SPI. The eight include The Dow Chemical Company (Dow), DSM Engineering Plastics, DuPont, Eastman Chemical Company, ExxonMobil Chemical Company, Formosa Plastics, Lyondell-Basell, PPG Industries, and Westlake Chemical Company. The Dow experience will be particularly extensive, accounting for a space rivaling the largest booth on the exhibit floor.

"Dow introduced the customer center concept in 2002 and we have worked to raise the bar every year," said Greg Jozwiak, North America Commercial Vice President for Dow Packaging and Specialty Plastics. "Providing our customers and industry partners with a comfortable, exclusive venue for meetings, meals and other business services will continue to be a priority in 2015. Dow will also use the venue to showcase the latest polyolefin, elastomer and adhesive technologies. And, with the growth projects in the plastics sector set to come online in the coming year, we expect NPE 2015 to be a market catalyst to even greater growth and innovation."

The Customer Service Centers, accounting for over 62,000 sq.ft. (5,760 sq.m), will enable NPE2015 visitors to meet with current or prospective material suppliers in settings conducive to discussion, information exchange, and relationship building. Visitors will have the opportunity to engage with supplier executives, salespeople, or technical experts appropriate to their interests. Many of material suppliers will also be conducting private tours of the exhibit floor to showcase machines using their materials.

"The emerging importance of Customer Service Centers reflects a renewed commitment to NPE2015 by raw material suppliers, and highlights the importance of the materials aspect within plastics production life cycle," said Brad Williams, SPI's director of trade show marketing and sales. "Visitors to NPE2015 will discover

the full range of technologies necessary to stay competitive, including hundreds of new machines in full-scale operation and a wealth of resin, compound, and additive innovations."

The increased involvement of raw material suppliers is in line with NPE's efforts to provide more material education as well as showcase material impacts in design, production, recycling, and reuse. NPE2015 is on track to be the largest NPE in years and poised to equal NPE's largest event ever, NPE2000. Over 950,000 square feet (88,250 sq.m) of space has already been secured, and the show is at 94% of capacity. In addition, more than 350 exhibitors report that

they will be running equipment on the show floor.

NPE2015 Registration and Housing is now open at www.npe.org. For more information on securing a customer service center meeting room, contact NPE Sales at exhibit@npe.org or 703.259.6132.

NPE is a triennial international plastics exposition solely owned and produced by SPI: The Plastics Industry Trade Association. NPE2015 will take place Monday through Friday, March 23-27, 2015, at the Orange County Convention Center in Orlando, Florida. NPE2012 had 1,933 exhibitors, 40% of which came from outside the U.S.A. The event attract-

ed 55,359 participants, 26% of them international visitors. Founded in 1937, SPI: The Plastics Industry Trade Association promotes growth in the \$380 billion U.S. plastics industry. Representing nearly 900 thousand American workers in the third largest U.S. manufacturing industry, SPI delivers legislative advocacy, market research, industry promotion, and the fostering of business relationships and zero waste strategies. SPI also owns and produces the international NPE trade show.

All profits from NPE are reinvested into SPI's industry services. Find SPI online at www.plasticsindustry.org and www.inthehopper.org.

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NEWS PLUGS continued



BURNDY® Announces the release of Y122CMR HYTOOL™

BURNDY® is pleased to introduce the new Y122CMR mechanical full cycle ratchet HYTOOL™ to its line of tooling products. The Y122CMR HYTOOL™ will accommodate copper compression HYDENT™ connectors for:

- #12 - #2 AWG Class B
- #12 - #2 Class I Flex
- #2 Solid & #3 Stranded

The die index is embossed on the crimped connector for permanent inspectability.



BURNDY® Y122CMR HYTOOL™

This tool is also available in a kit (Y122CMRKIT) equipped with a high-impact-formed sturdy metal carrying case that houses the tool and select YAV, YAZ, and YAZV terminals.

The Y122CMR ergonomic full cycle ratchet tools provide a complete positive crimp every time. The ergonomic comfort grip handles reduce operator fatigue dur-

ing continuous use. The ratchet mechanism assures the tool must complete a full cycle before releasing.

Headquartered in Manchester, New Hampshire BURNDY has over 85 years of customer support in both service and product.

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Chemtronics Adds 3 Rep Groups For Eastern US

Chemtronics®, the acknowledged industry leader for the electronics, telecommunications and critical cleaning environments, is pleased to announce the addition of three new Manufacturers Representation Agencies to the Eastern United States sales team. The addition of these groups will extend the daily reach into the areas covered.

Andy Bresnahan, Performance Technologies Group – New York, will be covering the upstate NY region. Andy brings over twenty years experience covering the electronic and industrial markets in his region.

Kevin Bomba, PHI Associates has been appointed to cover the metro NY, Long Island, NY and Philadelphia, PA market. Kevin has been servicing this territory for many years in a variety of sales roles.

Dale Robinson, Production Solutions Associates, will be servicing the DE, MD,

Continued on page 46

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NEWS PLUGS continued



Continued from page 44

VA and Washington DC areas. Dales synergistic line card and long history of sales in this marketplace make his agency a natural fit.

“These three new agencies are the types of firms that match our organizational and quality needs; they offer very professional, knowledgeable staff that have outstanding relationships with both their end user base and distribution partners”, stated Dave DiCeglie, Eastern US & Canada Sales Manager.

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Fairview Unveils Complete Family of Low, Medium and High Power Attenuators

Fairview Microwave, Inc. a supplier of on-demand microwave and RF products, announces the release of their new family of 25, 50 and 100 Watt attenuators with operating frequencies up to 18 GHz depending on the configuration.

There is a total of 236 new part numbers in this attenuator release from Fairview Microwave. Attenuation options include 3 dB, 6 dB, 10 dB, 20 dB, 30 dB, 40 dB, 50 dB and 60 dB models for most connector styles. These attenuators can be ordered with in-series connector configu-

rations including SMA, TNC, Type-N and 7/16 DIN and come in each gender interface including male-male, male-female and female-female.

Fairview’s new RF attenuators have average power ratings of 25 Watts, 50 Watts or 100 Watts and a peak power rating of 500 Watts. The 25 Watt versions are bi-directional, while the 50 Watt and 100 Watt models are directional. These attenuators are constructed with black anodized aluminum heatsink bodies and are designed with large cooling fins which aid in heat dissipation at high temperatures. Common applications for these fixed attenuators include power limiting, impedance matching and signal leveling inside RF test systems.

“Our newest lines of 25, 50 and 100 Watt attenuators are an essential addition to our growing portfolio of RF attenuators,” explains Greg Arnold, Technical Sales Manager at Fairview Microwave. “With over 236 new low, medium and high power attenuators to choose from, cus-

tomers now have the freedom to select their desired products from one of the largest offerings of off-the-shelf fixed attenuators in our industry.”

Fairview Microwave’s family of low, medium and high power attenuators is available from stock and can ship the same-day ordered. For additional details on the expanded line of RF attenuators or company information, please visit <http://www.fairviewmicrowave.com/rf-products/25-watt,-50-watt-and-100-watt-attenuators.html>. Fairview Microwave can be contacted by phone at +1-972-649-6678.

New PV Connector from Amphenol Meets the Three Highest Certification Standards on the Market

Amphenol Industrial Products Group, a global leader in interconnect systems, now offers a PV connector that meets all three of the highest certification standards on the market, allowing this one connector to be used globally. The new H4 UTX meets EN50521 TUV 1500V- Class A (All Access), UL6703 1000V (Americas) and JET 1500V (Japan).

These certifications make the connector ideal for use by all PV module manufacturers, installers, developers, electrical distributors as well as inspectors, combiner box companies and engineering procurement construction (EPC) firms worldwide. The H4 UTX is available in all AWGs, from 14 AWG to 8 AWG, and are fully matable with all existing H4 PV connectors and the typical PV industry standard connectors.

A larger version of the H4 UTX, known as the H4 UTX-XL, can accommodate 8 AWG PV wire, up to 2kV. This larger version can mate with the H4 UTX as well as with all existing H4 connectors in all AWGs.

Martin Booker, general manager, Amphenol Industrial Products Group, said, “The connector’s efficient design keeps costs low and improves flexibility, since it can mate with all PV wire sizes. The added benefit of meeting three of the highest global certifications in the solar market truly makes the H4 UTX a single, cost-effective device for use worldwide.”

Amphenol’s H4 UTX uses Amphenol’s proven RAD-SOK technology to achieve higher current ratings and lower contact resistance, resulting in lower power losses.

Technical Specifications:

- Triple certified for global use: TUV 1500V Class



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A (All Access); UL 1000V; JET 1500V

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For more information, please visit <http://www.amphenol-industrial.com> or e-mail mfarrelly@amphenol-aio.com.

New Barrel Inlay for General-Purpose Molding and Extrusion Provides Enhanced Resistance to Wear and Corrosion

A bimetallic barrel alloy with enhanced resistance to corrosive and abrasive wear extends the working life of extrusion and injection molding barrels in general-purpose applications and provides greater assurance of product quality and consistency, it was announced by Nordson Xaloy Europe.

The key to the corrosion resistance of the X220™ alloy is its higher chromium content relative to other barrel inlays for general-purpose use—double the chromium content of Nordson Xaloy's own X200™ inlay and greater than the standard alloy in Europe. The new inlay also exhibits greater hardness: 64 to 69 on the Rockwell HRC scale, as against 58 to 65 for the X200.

In acid immersion tests of sample weight loss, X220 alloy exhibited a 55% improvement over other European alloys in sulfuric acid and a 44% improvement in hydrochloric acid (see graphs).

"The new X220 inlay improves productivity and product quality through better screw-to-barrel fit, reduces downtime, and prolongs the working life of the barrel," said David Hotchkiss, global product manager.

A bimetallic inlay is a high-hardness alloy that lines the inner wall of the barrel. As general-purpose inlays, the iron-based X200 and the iron-chromium-based X220 can be used with a wide range of polyolefin, styrenic, and other resins at filler loadings up to 15%. For vinyls, certain fluoropolymers, and other potentially corrosive resins, Nordson Xaloy supplies the X306® nickel-cobalt alloy. The tungsten carbide / nickel-based alloy X800® provides exceptional wear and corrosion

resistance for highly filled resins and high-temperature engineering polymers.

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test and inspection, UV curing and plasma surface treatment, all supported by application expertise and direct global sales and service. Nordson serves a wide variety of consumer non-durable, durable and technology end markets including packaging, nonwovens, electronics, medical, appliances, energy, transportation,

construction, and general product assembly and finishing. Founded in 1954 and headquartered in Westlake, Ohio, the company has operations and support offices in more than 30 countries. Visit Nordson on the web at <http://www.nordson.com>, [@Nordson_Corp](https://www.facebook.com/nordson), or www.facebook.com/nordson.

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Harnesses, cables, PCBs and assemblies represent 25 percent of ST production. The 75-percent balance is cutting, stripping and even soldering discrete wire.

blies represent 25 percent of ST production. The 75-percent balance is cutting, stripping and even soldering discrete wire. Quantities can reach 25,000. The largest has been 210,000, with the wire combined with assemblies and packaged.

Gauge size is between 8 and 36. “All applications are going smaller to nano and mini,” Cardenas said. “We pride ourselves in dealing in smaller gauge.”

As for quality, each product is built to IPC/WHMA A-620 specifications. ST always has complied with ISO 9001:2008 and should gain certification in November. External rejects are less than one percent.

A unique service is wire waterproofing, which amounts to impregnating wire with resin, according to Cardenas. “There’s no change in the form, fit and function,” he said. “Customers with applications in harsh environments have used overmolding, potting or a coating, but it’s messy and changes the look of a product. This is low cost and doesn’t change the look.”

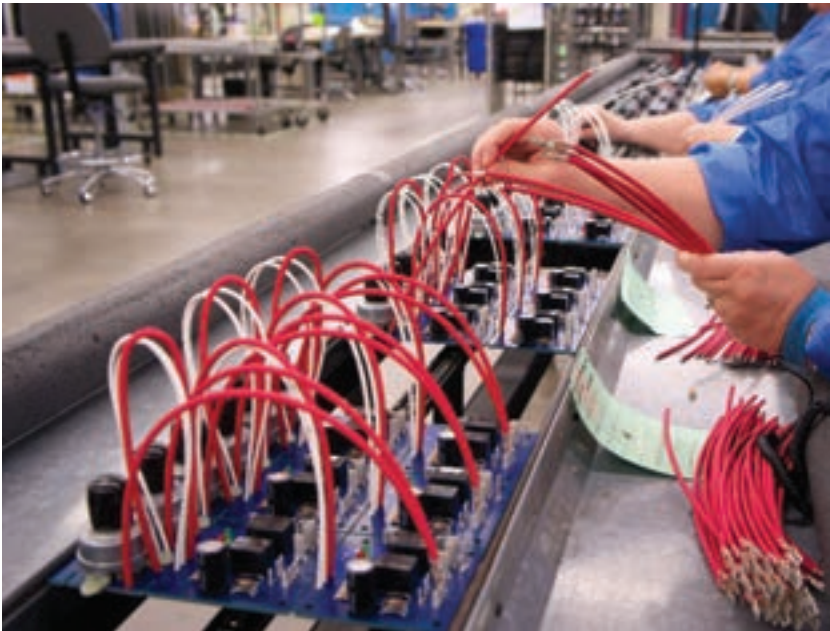
Production, which is laid out based on 5S, is done on equipment from Schleuniger, Carpenter and other manufacturers. It includes high-volume cut-and-strip machines, bench-top strippers, automa-

Continued on page 51

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Sample Screen Report ▼

Line	HDR-64 B1	HDR-64 B2	Value	HiPot Results	DC Current	DC Voltage	DC Isolation	AC Current	AC Voltage	AC Isolation
1	1	65	↔ 0.1 Ω	✓	< 1 µA	1200 V	> 1 GΩ	0.064 mA	818 V	13 MΩ
2	2	66	↔ 0.3 Ω	✓	< 1 µA	1200 V	> 1 GΩ	0.067 mA	818 V	12 MΩ
3	3	67	↔ 0.1 Ω	✓	< 1 µA	1200 V	> 1 GΩ	0.071 mA	820 V	12 MΩ



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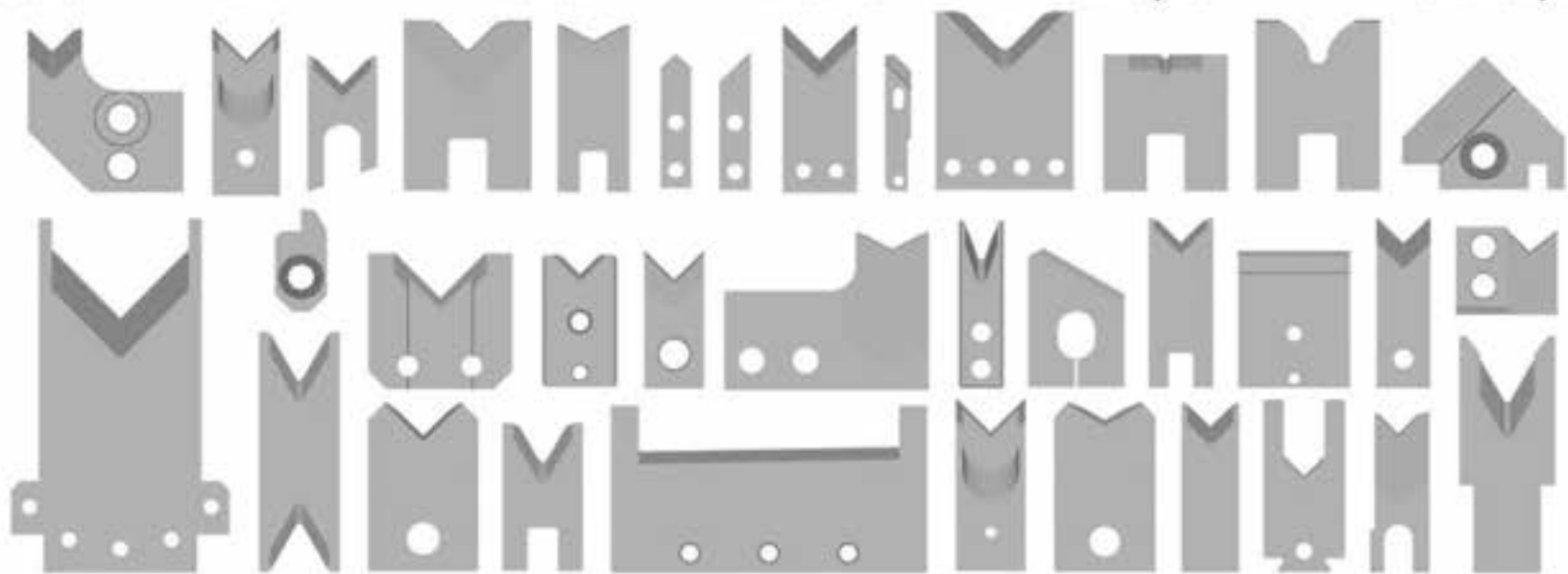
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- MPF-35 Prefeederers for high speed fully automatic wire processing machines



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| • Artos | • KM Digitech | • Koderia | • Makfil | • Schleuniger | • Toyojamco/JAM |
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|-----------------------------------------------|------------------------------------------|
| • Wire Prefeeder Equipment | • Terminal Carrier Strip Cut-off Devices |
| • Heavy Duty Benchtop Wire Stripping Machines | • Terminal Paper Winding Machines |
| • Automatic Center Stripping Machines | • Terminal Applicators |



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Solution Technologies

Continued from page 49

ed crimpers, a heat-shrink oven and a shrink-tubing cutting machine.

Business amounted to \$2.5 million in sales in 2013, ST's best year, but is projected to drop to \$2 million this year. With Cardenas hoping for \$1 million in new business in place to start 2015, income for the year could reach \$3 million.

That number could be even higher because an outside sales person will be added to the staff, as will an engineer. Their work will complement the ST marketing effort that consists of e-mailing, trade show networking, cold calling and following up on quotes (which are provided within 72 hours). A Web site upgrade and Minority Business Enterprise certification also are planned.

ST always has been located in Dallas. The first location, which had 4,000 square feet, was occupied from August 2008 to May 2012 before the move to the current facility of 10,000 square feet. ST could add 4,000 square feet available in the building, or company owners may buy their own building.

Besides managing ST, Cardenas shares ownership with four other people, considered silent partners. Two of them are men involved in other businesses but do handle the ST finances and planning. The other two are a couple, one a cardiologist and the other an attorney who act solely as investors.

One of the active partners met Cardenas when he worked at Flextronics in Houston from December 2003 to May 2006, first as a process engineer and then a production manager. They saw opportunity in the small orders the global company did not accept.

ST was founded on Aug. 4, 2008, and Cardenas and another man were the only workers. They handled all aspects of company operations, which manufactured discrete harnesses and cables.

Prior to Flextronics and ST, Cardenas worked in the food distribution industry 17 years at Pepsico Food Systems as an operations manager and Chiquita Brands International in the Dallas area. He studied biomedical technology at DeVry University in 2010-13, pursuing his lifelong intrigue with how machines worked. Even in high school he was

employed by a company that refurbished mechanical phone systems.

Cardenas did not work at ST from August 2010 to August 2012. Another man who specialized in procuring government contracts handled day-to-day operations. During that time Cardenas was a technical assembly supervisor and a production supervisor at Hutton Communications in Carrollton, Texas.

Much of Cardenas' focus at ST is sales, which he had not done prior to ST. "The experience of working directly with buyers and suppliers has taught me the importance of trust and relationships," he said. "I work at building a relationship first and investing time with customers. If you do that, they will remember you,

and the business will come after that.

"My business partners have trusted me with the entire company on my shoulders," Cardenas said. "They give me the resources and believe in me. They know me as a person of integrity. The trust factor is very key."

Cardenas' challenges include growing the business, maintaining its profitability and hiring people "who are the right fit and believe in our vision of personalizing our business to build partnerships with our customers and be here in the

long run," he said. "The love of my life is helping someone grow."

"My first mentor was my late father Florentino. He told me that whatever it is you are working on to do it better than the next guy," Cardenas said. "Then doors will open for you. I have seen that happen time after time."

For more information, call 214-221-0323, e-mail carlosc@solutiontechmfg.com, fax 214-221-0756, visit www.stechtx.com or write 9635 Wendell Rd., Dallas, TX 75243.

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Wardwell Harness Braiding Machine



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

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NEWS PLUGS continued



Portable Wiring Tool Kit Cuts Cable Jacket, Insulation and Strips Wire

An upgraded tool kit with three essential hand tools that store in a handy tri-fold canvas pouch for all types of wire and cable preparation and repairs is being introduced by Xuron Corp. of Saco, Maine.

The Xuron® TK2300 Wire Harness Tool Kit features the three tools used most for assembly and field service wiring applications all packed into a handy tri-fold canvas pouch that fits into a tool kit or pocket. Included is the Model 440 precision scissor for slitting coaxial cable jacketing and cutting foil insulation, Model 2175 Maxi-Shear™ flush cutter for wire up to 12 AWG, and the Model 501 thumb adjustable wire stripper-cutter

for 10 to 26 AWG.

Suited for professionals who need to assemble, install, or repair wire and cable in a facility or in the field, each tool in the Xuron® TK2300 Wire Harness Tool Kit is ergonomically designed with soft rubber hand grips, no finger loops, a Light Touch™ return spring, and a non-glare black finish. The canvas pouch has pockets for each tool and a hook & loop closure.

The Xuron® TK2300 Wire Harness Tool Kit is priced at \$ 56.95 (list).

For more information contact Xuron Corporation, 62 Industrial Park Rd. Saco, ME 04072-1840. Phone (207) 283-1401 or Fax (207) 283-0594. Visit www.xuron.com

KOA Speer Again Receives Top Supplier Awards from TTI

KOA Speer Electronics, a leading supplier of passive electronic components, announced they have received TTI's 2013 Platinum, Diamond and Best Quality

Awards for Supplier Excellence. The TTI Supplier Excellence Award Program represents the highest recognition possible of a supplier's performance within TTI. The program is centered on quality measurements that include: on-time delivery, receiving quality, customer-reported quality, administrative quality, operations and business systems.

2013 marks the fourth consecutive year KOA Speer has received the Diamond and Best Quality awards, which are awarded to the supplier with the overall highest point achievement, and to the supplier who scores the highest in each of the possible Quality categories. KOA Speer has been a Supplier Excellence Award recipient in 18 of 19 years that TTI has presented the awards. The Platinum Level Excellence Award is an honor that can only be achieved after superior performance for a minimum of 5 consecutive years.

Melanie Pizzey, TTI Vice President Global Product Operations, stated "We are pleased to announce this year's Diamond

Award and the Best Quality Award will be presented to KOA Speer Electronics for the fourth year in a row, acknowledging their distinguished performance in the Americas for 2013. KOA Speer has continued to demonstrate their dedication and commitment to excellence."

Jeff Rice, President of KOA Speer Electronics, commented "Being named Top Supplier by TTI is very rewarding for our entire organization. Our team works extremely hard to carryout the principles of our Quality 1st program and deliver outstanding service on a daily basis."

TTI, Inc., a Berkshire Hathaway company, is a specialty distributor of passive, interconnect, electromechanical and discrete components. TTI is the distributor of choice for electronic manufacturers worldwide. TTI's extensive product line includes: resistors, capacitors, connectors, potentiometers, trimmers, magnetic circuit protection, filters, relays, switches, sensors and discrete semiconductor devices. TTI is recognized as the industry's

leader in service and quality and provides a broad array of supply chain services to its customer base. TTI along with its subsidiary Mouser Electronics employs more than 3,500 with over 100 locations throughout North America, Europe and Asia.

For more information about TTI visit www.ttiinc.com.

KOA Corporation, whose global presence includes corporate headquarters in Japan, and sales locations in the USA, Germany, China and Singapore, offers a wide range of products which include thick and thin film resistors, current sensing resistors and resistor arrays; thermal sensors, fuses and varistors; wire wound, multi-layer, power and thin film inductors; LTCC's and modules. KOA Speer Electronics, an affiliate of KOA Corporation, has served the electronics industry since 1980. Visit www.koaspeer.com

Dynalab Test Systems Introduces Major Release 18

Dynalab Test Systems has been committed to continuously updating its products and capabilities. With over 25 years of experience and over 30,000 testers sold, Dynalab offers products that reflect the highest level of industry knowledge and experience. The company's systems, software, and services are designed to help customers develop solutions for their testing needs quickly, reliably, and economically.

Dynalab's release 18 includes several new features that increase accuracy and

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Continued on page 59

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

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

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



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Focus-Lite™
Heat Shrink Processing Machines

Cloud based CAD Target Trends in the Wiring Harness Market

Continued from page 1

ments of high-tech automobiles and aircraft. Increased regulation necessitates tighter-than-ever control of quality, especially for aerospace, defence and automotive sectors. Increasing competitiveness has made security another key concern.

In the light of these factors, computer-aided design has become an increasingly important factor in improving quality, driving down costs, lowering time-to market and maintaining a competitive edge. Emerging CAD technologies are set to raise the bar even higher: to the cloud, in fact.

Removing barriers to entry

A key advantage of cloud technology is that it lowers the dependency on capabilities of both the designers and their workstations. Tools like Arcadia, created by Cadonix, are designed for ease-of-use from the start, making them accessible to lower skilled, lower-cost, labour markets such as Eastern Europe, South America and North Africa. All the

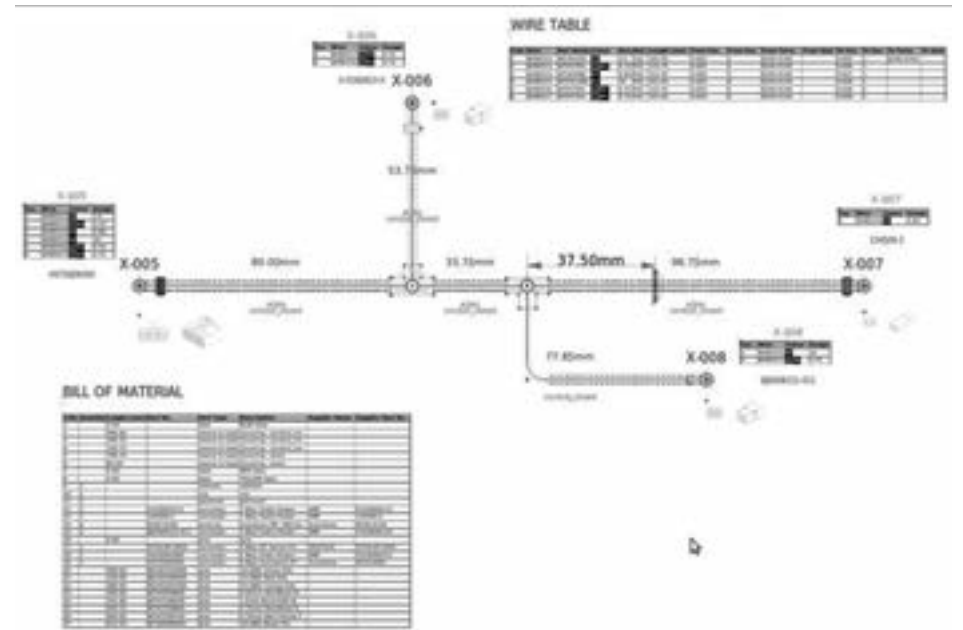


Figure 1 - Arcadia wiring schematic showing running in a standard web browser.



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processing power that is needed for schematic routing and simulation, harness design rendering, database operations and reporting, is located at the server end. High-bandwidth networking means that users only need a modern Web browser to send commands to the server and respond to its outputs. This platform-agnostic approach means harnesses can be designed on any desktop, laptop or mobile device, anywhere that has an Internet connection. There is no software needed and designers can log in and work from the office, at home or anywhere.

Designers using cloud-based CAD can tap into a lot of computing power from the server. For example, Arcadia delivers schematic design, animated circuit simulation and analysis, electrical networking, harness design as well as full design rule checking for wire harness layout and manufacture. Users can select from around 12,000 components in the standard database and import many thousands more from their existing data and newly created catalogues.

Complex solutions - no problem

Cloud-centric CAD offers virtually limitless storage, allowing designers to readily monitor the ever-expanding range of connectors, fuses, switches and other circuit components coming onto the market. Bundles are quick and easy to create in the harness editor, either from existing schematics or as new designs. Sleeves, connectors, terminals and seals can all be incorporated. Legacy designs from older software are easily incorporated into the system, complete with their bill of materials and component data.

Even complex harnesses can be designed quickly using cloud-based CAD. Integrating schematic layout with electrical simulation makes it simple to verify harness designs, checking voltages at any node and ensuring that components are performing well inside their limits. A comprehensive set of reporting options helps new and modified designs satisfy statutory scrutiny (See Figure 3 - Page 56).

Continued on page 56

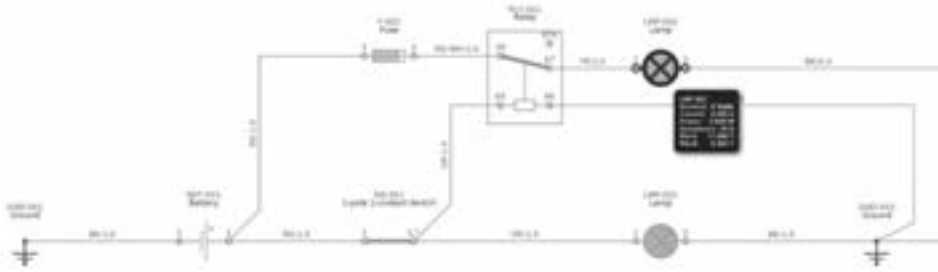


Figure 2 - Arcadia Schematic provides real-time schematic simulation.

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

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Cloud based CAD Target Trends in the Wiring Harness Market

Continued from page 55

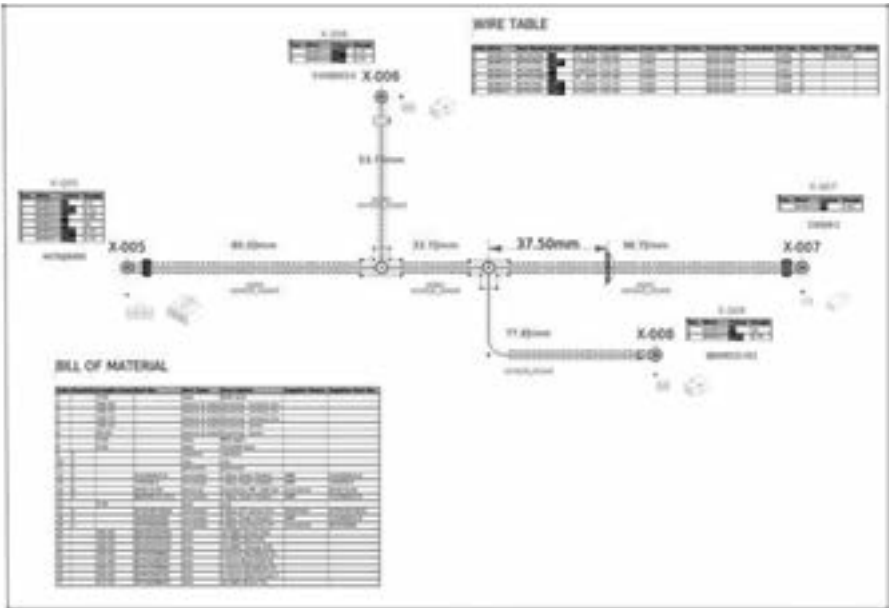


Figure 3 - Wiring harness design on Arcadia showing wire table and bill of materials.

Impressive as this is, there is so much more that cloud solutions can bring to the increasingly global wiring harness industry. Their inherent facility for collaboration is one of the major added benefits.

Collaboration in a connected world

With many harness manufacturers today operating through a distributed network of production facilities, their design, test and manufacturing functions can be geographically very remote from each other. Engine wiring schematics may be designed many thousands of miles from where the designers of main body harnesses and lighting circuits are sitting.


Solutions like Arcadia make it easy to share data. Because each schematic can now be designed independently, work can progress in parallel whilst maintaining full visibility amongst all participants. Updates and changes can be flagged in a two-way linkage across project manage-


ment or PLM systems, with Red line, Release and Lock instructions automatically added to each collaborator. Built-in collaboration means it is quicker than ever to re-spin and synchronise; it is the quickest route from design, through prototyping to production.

Comprehensive and connected reporting is a vital ingredient in keeping costs competitive. BOM reports can include supplier information, part numbers and cross references, for example. The inclusion of applicator information in cutting lists allows manufacturer-specific information to be factored into the equation, such as the tooling available on individual sites. There is even a connector report showing operators exactly how to wire up the ends of each harness (See Figure 4 - page 58 & 5 - page 60). Each job can be optimised for the capabilities of the allocated site, delivering productivity gains and cost reduction.

Continued on page 58

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Cloud based CAD Target Trends in the Wiring Harness Market

Continued from page 56

Reports can be created as Web pages and Excel spreadsheets, and then distributed to recipients without the need for them to access the cloud system. Anyone and everyone can stay informed.

The Cloud improves security

Many of these gains could be lost if competitors were able access the manufacturer's designs, manufacturing data and cost information; and housing these data in the cloud naturally leads to concerns about security. An additional concern is the cost and disruption, should




Harness Connector													
Harness Part No		HAR000022			Description			Large Harness					
Customer Issue					Customer Name								
Revision		A			Drawn By			admn					
Drawn Date		2014-06-25											
X-001								Connector View					
Connector Part No.		HDP06-24-3137-401		Supplier		 							
Connector Description		31 Way HDP06 Series 3rd Wg Black w/ Ring Adapter		Supplier Part No.									
JESD		FLAB000003		Connector Identification Label									
IF PART													
Qty	Wire No.	Ident	Wire PN	Colour	Size	Material	To	Pin	Terminal	Seal	MC ID	Strip Length (mm)	Next Op
1	001		WTFV020002	BR	1.0	PVC	X-002	1	100-15-0022	DUMMYSEAL1		4.00	
2	002		WTFV020002	BL	1.0	PVC	X-002	2	100-15-0022	DUMMYSEAL1		4.00	
3	003		WTFV020002	BR	1.0	PVC	X-002	3	100-15-0022	DUMMYSEAL1		4.00	
4	004		WTFV020002	GY	1.0	PVC	X-002	4	100-15-0022	DUMMYSEAL1		4.00	
5	005		WTFV020002	GN	1.0	PVC	X-002	5	100-15-0022	DUMMYSEAL1		4.00	
6	006		WTFV020002	OR	1.0	PVC	X-002	6	100-15-0022	DUMMYSEAL1		4.00	
7	007		WTFV020002	VT	1.0	PVC	X-002	7	100-15-0022	DUMMYSEAL1		4.00	
8	008		WTFV020002	GN	1.0	PVC	X-002	8	100-15-0022	DUMMYSEAL1		4.00	
9	009		WTFV020002	WH	1.0	PVC	X-002	9	100-15-0022	DUMMYSEAL1		4.00	
10	010		WTFV020002	YE	1.0	PVC	X-002	10	100-15-0022	DUMMYSEAL1		4.00	
11	011		WTFV020002	TD	1.0	PVC	X-002	11	100-15-0022	DUMMYSEAL1		4.00	
12	012		WTFV020002	BK	1.0	PVC	SP-001	12	100-15-0022	DUMMYSEAL1		4.00	
13	013		WTFV020002	BK	1.0	PVC	SP-001	13	100-15-0022	DUMMYSEAL1		4.00	
14	014		WTFV020002	BK	1.0	PVC	SP-001	14	100-15-0022	DUMMYSEAL1		4.00	
15	015		WTFV020002	GN	1.0	PVC	X-002	15	100-15-0022	DUMMYSEAL1		4.00	
16	016		WTFV020002	BR	1.0	PVC	X-002	16	100-15-0022	DUMMYSEAL1		4.00	
17	017		WTFV020002	TD	1.0	PVC	X-002	17	100-15-0022	DUMMYSEAL1		4.00	
18	018		WTFV020002	WH	1.0	PVC	X-002	18	100-15-0022	DUMMYSEAL1		4.00	
19	019		WTFV020002	YE	1.0	PVC	X-002	19	100-15-0022	DUMMYSEAL1		4.00	
20	020		WTFV020002	BL	1.0	PVC	X-002	20	100-15-0022	DUMMYSEAL1		4.00	
21	021		WTFV020002	BL	1.0	PVC	X-002	21	100-15-0022	DUMMYSEAL1		4.00	
22	044		WTFV020002	BK	1.0	PVC	X-004	12	100-15-0022	DUMMYSEAL1		4.00	
23	045		WTFV020002	RD	1.0	PVC	X-004	14	100-15-0022	DUMMYSEAL1		4.00	
24	046		WTFV020002	BR	1.0	PVC	X-004	15	100-15-0022	DUMMYSEAL1		4.00	
25	047		WTFV020002	BL	1.0	PVC	X-004	16	100-15-0022	DUMMYSEAL1		4.00	
26	048		WTFV020002	BL	1.0	PVC	X-004	17	100-15-0022	DUMMYSEAL1		4.00	
27	049		WTFV020002	GY	1.0	PVC	X-004	18	100-15-0022	DUMMYSEAL1		4.00	
28	050		WTFV020002	BK	1.0	PVC	X-004	19	100-15-0022	DUMMYSEAL1		4.00	
29	100		WTFV020002	BL	1.0	PVC	X-005	1	100-15-0022	DUMMYSEAL1		4.00	
30	101		WTFV020002	BR	1.0	PVC	X-005	2	100-15-0022	DUMMYSEAL1		4.00	
31	102		WTFV020002	OR	1.0	PVC	X-005	3	100-15-0022	DUMMYSEAL1		4.00	

Figure 4 - Detailed Harness Manufacturing Report For Connector Loading.

work in progress be lost. However, the fact of the matter is that cloud based solutions are inherently more secure than traditional approaches.

Users access the system by logging in securely via a standard Web browser. No information is stored on the client com-

puter: instead, it is continuously saved on the host, leaving little potential for loss. Security is not left to the end user: it is entirely under the harness manufacturer's control.

Continued on page 60



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NEWS PLUGS continued

Continued from page 52

efficiency in programming. Specifically, the “Compare Connections” feature provides change control function when making program changes, therefore reducing the possibility of human error of accidentally deleting important data. Engineers may feel comfortable that they may audit their changes and undo a programming change if a mistake were made.

The NX Editor’s importing and exporting data functions have been enhanced to make programming even easier. The new “Export Connections Data” function will export only the connections data to a spreadsheet. For multiple part numbers, a new tab is created for each part number for easier auditing and quality control.

Other functions include more control with programming functions, better reporting capability, enhanced relay testing and more.

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Primarily used for cable and wire-bundle identification where limited fire hazards characteristics are required.

MT (TAG) marker tag material provides good fluid, fuel and lubricant resistance and has excellent printing properties, remaining legible under aggressive exposure to elements such as cleaning solvents, fuel and oils. Meets ASM-DTL-23053/5 class 1 requirements as well as SAE AS811531 4.6.2 and MIL-STD-202 specs.

Thermosleeve USA is a leading manufacturer of heat shrinkable products with over 20-plus years' experience in the industry. Since 1988 our factory has grown to produce 30% of all the world's heat shrink



Dynalab’s Major Release 18

tubing products, and 40% of all PTFE Tubing. Thermosleeve USA manufactures and develops a very comprehensive range of heat shrinkable tubing in various colors and shrink ratios. All products are manufactured under TS16949 Quality System and ISO 14001 Environment System certifications and are produced to meet or exceed UL224/MIL approval requirements.

Thermosleeve USA products are widely used in the aerospace, automotive, communications, constructions, electrical, electronic, energy, military, oil and gas, and utility markets.

For further information visit www.thermosleeve-usa.com

Pasternack Expands Line of F Attenuators Operating from DC to 3 GHz

Pasternack Enterprises, Inc., a supplier of RF, microwave and millimeter wave products, announces their expanded line of 75 Ohm F attenuators. This new line of F-type attenuators is perfect for broadcast, HDTV and satcom applications in the L and S microwave bands up to 3 GHz.

Pasternack’s new F attenuators are available in 1 to 10 dB values in 1 dB steps, with 16 and 20 dB values also available. These F 75 Ohm fixed attenuators are widely used in the broadcast industry for signal leveling and to attenuate (or reduce) strong input signals to sensitive broadcasting equipment.

The new 75 Ohm F attenuators from Pasternack operate from DC to 3 GHz at a

max power of 2 Watts, making them high definition TV compatible. Pasternack HD attenuators are constructed with brass bodies that are tri-metal plated for added durability. The center contacts are gold plated which provides low loss and uniform signal strength for the life of the product. These F attenuators meet IEC 60169-24 standards and are compatible all other standard F-type components.

“Pasternack expands its 75 Ohm product offering to now include 75 Ohm HD type-F attenuators that operate to 3 GHz,” says Gerry Camacho, VP of Technical Marketing at Pasternack Enterprises, Inc. “Our new line of F attenuators are available in 1 dB steps up to 10 dB, which are a good solution for signal strength leveling.”

The new 3 GHz F attenuators are in-stock and available to ship from Pasternack now. For additional information and

Continued on page 61



3M™ Round Conductor Flat Cable 3M™ Wiremount Socket 3M™ Four-Wall Header

3M MAKES CONNECTING THINGS EASIER

For over 50 years 3M IDC technology has continuously enabled mass termination of wires to connectors across popular pitch sizes. Count on us to deliver the right interconnect solution to meet today's design needs. 3M Interconnect Solutions offers a comprehensive range of solutions for the electronics industry, with a product portfolio that includes connectors, cables, cable assemblies and assembly tooling for a wide variety of applications.

Features for 3M™ Four-Wall Header, 3000 Series:

- Military (with the 3M™ Polarizing Key 3518 and N3518) and centerbump polarization
- Optional ejector latches
- Mounting holes for securing header to board
- Optional polarizing posts available
- High-temperature insulator option suitable for "no lead" soldering operations
- High-temperature option suitable for reflow soldering using "paste-in-hole" techniques
- Solder tail option

Features for 3M™ Wiremount Socket, 3000 Series:

- Connector is mirror-image version of 3310-0000 connector
- Eliminates contact numbering problems when connecting to both sides of pin field
- Positive locking metal "J" clip provides high cover retention
- Optional strain relief and pull tab available
- RoHS compliant

Features for 3M™ Round Conductor Flat Cable, 3365 Series:

- 28 AWG wire on .050 inch centers permits mass termination to a broad line of IDC connectors
- Stranded wire provides flexibility and extended product life
- Zippable for branching or discrete termination
- Available in gray or black
- RoHS compliant




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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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Cloud based CAD Target Trends in the
Wiring Harness Market

Continued from page 56

Multiple undo steps and roll-backs allow users to backtrack if they make a mistake. They can also quickly return to where they left off, for example in the case of a computer crash, loss of power or a dropped Internet connection at the client end. This also means that no drawings on the operator's computer can be lost, copied or stolen.

Security, collaborative features and ease of use, even for complex designs, make cloud-based CAD a significant step forward in meeting the demands of today's competitive, regulated and globalised wiring harness industry.

For further information contact Cadonix Ltd., Unit 3 Ridgeway Drakes Drive, Long Crendon, Buckinghamshire, HP18 9BF.
Phone: +44 (0) 845 519 0038.
Email: enquiries@cadonix.com.
or visit www.cadonix.com.

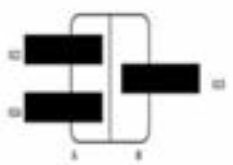


Harness Splice																	
Harness Part No		HAR000022		Description		Large Harness											
Customer Issue				Customer Name													
Revision		A		Drawn By		admin											
Drawn Date		2014-06-25															
SP-001					Splice View												
Splice Part No.:																	
WIRE PART:					A CSA:2		B CSA:1		Total CSA:3								
Splice Side	Wire No.	Wire Ident	Wire Colour	Wire Size	Wire Material	To Connector	To Cavity	Wire Part Number	Strip Length (mm)	Next Operation							
A	002		Bk	1.0	PVC	X-001	12	WTPV10X03	8.50								
	004		Bk	1.0	PVC	X-001	14	WTPV10X03	8.50								
B	001		Bk	1.0	PVC	X-001	13	WTPV10X03	8.50								
SP-002					Splice View												
Splice Part No.:																	
WIRE PART:					A CSA:3		B CSA:3		Total CSA:6								
Splice Side	Wire No.	Wire Ident	Wire Colour	Wire Size	Wire Material	To Connector	To Cavity	Wire Part Number	Strip Length (mm)	Next Operation							
A	004		RD	1.0	PVC	X-011	1	WTPV10X03	8.50								
	005		RD	1.0	PVC	X-011	2	WTPV10X03	8.50								
	006		RD	1.0	PVC	X-005	1	WTPV10X03	8.50								
	001		RD	1.0	PVC	X-004	20	WTPV10X03	8.50								
B	002		RD	1.0	PVC	X-004	21	WTPV10X03	8.50								
	003		RD	1.0	PVC	X-004	22	WTPV10X03	8.50								

Figure 5 - Splice Assembly Report for Splice Assembly.



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NEWS PLUGS continued



Continued from page 59

details about these HDTV attenuators, please visit http://www.pasternack.com/pages/Featured_Products/fattenuators.htm. For inquiries, Pasternack Enterprises, Inc. can be contacted at +1-949-261-1920.

A leader in RF products since 1972, Pasternack is an ISO 9001:2008 certified manufacturer and supplier that offers the industry's largest selection of passive and active RF, microwave and millimeter wave products available for same-day shipping.

For further information contact Pasternack Enterprises, Inc. 17802 Fitch, Irvine, CA 92614. Phone (949) 261-1920 or visit www.pasternack.com

Nordson MARCH White Paper, Plasma Clean to Reduce Wire Bond Failures, Now Available Online

Nordson MARCH, a Nordson® Company, and global leader in plasma processing technology, announces that the white paper, Plasma Clean to Reduce Wire Bond Failures, is now available on the Nordson MARCH website at <http://bit.ly/PlasmaWP>. The article discusses the two areas of wire bonding: the wire bonding process itself (wire bond "statistics") and the long-term reliability of the device.

"In an ideal world we would be bonding onto clean metal surfaces on both the semiconductor device and the substrate or leadframe we are connecting it to," explained John Maguire, business manager, Nordson MARCH and author of the white paper. "In practice, there are a number of sources of surface contamination which influence the wire bond statistics and the device reliability. These contaminants cover the surface we want to bond to, preventing us from making a good bond. A bonding process can run for hours or days without encountering any issues and suddenly go out of control for no apparent reason. Decreases in bonded area, average shear strength, and pull strength are all indicators that when the bond is made, the area of contact between the bond wire and the pad will be sub-optimal. This is due to the surface contaminant impeding the process of "welding". Surface contamination will lead to a bond which does not reach its maximum potential strength."

The article shows that plasma cleaning results in

- Reduction or elimination of non-stick on pads (NSOPs)
- Reduction or elimination of lifts
- Increase in average shear strength

- Increase in bonded area
- Increase in average wire-pull strength
- Increase in process window for the bonding process
- Reduction or elimination of cratering and other damage arising from a too aggressive bond process

The introduction of an appropriate plasma process prior to wire bonding will always deliver a cleaner surface to bond to. The article describes wire bond failures, their causes, and ways to eliminate them. Potential benefits are improved wire bond statistics, improved device reliability, and the elimination of excursions caused by non-systemic influences such as random pollution of the surfaces to be bonded by uncontrolled factors.

For more information, contact Nordson MARCH at info@nordsonmarch.com or visit us on the website at www.nordsonmarch.com.

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NEWS PLUGS continued



DG Interconnect introduces new miniature auto-coupling connector

DG Interconnect is introducing the all new QL-5 series connector to meet the growing demand for a miniature, high density connector capable of ultra-high mating cycles in a cost effective package.

“The QL-5 is the perfect complement to our QL-7 Series product line. The medical industry has demanded all of the same magic in a smaller package!” says DGI’s General Manager, Dave Galambos.

The QL-5 auto coupling mechanism latches with a fluid, rotational action that provides positive confirmation that the connector pair is fully engaged. The QL-5 is ideal for instrument applications requiring up to 14 sealed contacts in a quick-lock package and meets medical industry



QL-5 series miniature auto-coupling connector

set of United States government regulations that control the export and import of defense-related articles and services on the United States munitions list. This certification enables Digicom to manufacture products and take on projects that are marked to be under ITAR control.

“Our attention to quality and detail and our ability to handle low volume, high end products has enabled us to prototype and manufacture many military, aerospace, and government-related projects,” explained Mo Ohady, general manager, Digicom Electronics. “Receiving ITAR certification expands the base of projects we can accept and gives more flexibility to our customers whose products we are already producing and who now have projects that require ITAR certification.”

Digicom is also certified for ISO 9001:2008, ISO 13485:2003 medical devices quality, and quality system regulation 21 CFR 820. Products are manufactured in Digicom’s new state-of-the-art facility in Oakland, California. Digicom will be exhibiting at the Design-2-Part Show in Santa Clara, CA on May 21-22 in booth #407. For more information or to schedule an appointment, contact Digicom at +1 510-639-7003, email info@digicom.org, or visit our website at www.digicom.org.

Digicom Electronics offers advanced electronics manufacturing with “Made in the USA Quality” that fits the needs of larger enterprises while at the same time providing the benefits and individual attention needed to serve start-up companies. Digicom collaborates in all aspects of the process from the design to the final, fully compliant product.

standard for contact density and performance in a 0.5” diameter package.

What sets the QL-5 apart is an elegant design that blends well with contemporary electronic consoles. Like the larger QL-7, the QL-5 shatters the interconnect service paradigm with a configurable design that facilitates the quick, low cost delivery of samples, prototypes, and pilot production cable assemblies. The average volume price is approximately \$20 depending on lead length and contact arrangement. The QL-5 also eclipses most competitors with versions equipped to endure 100K mating cycles! For more information visit www.dginterconnect.com.

Digicom Electronics Awarded ITAR Certification

Digicom Electronics, Inc., a technology and quality driven electronics manufacturing services company, announces that it has received International Traffic in Arms Regulations (ITAR) certification. ITAR is a



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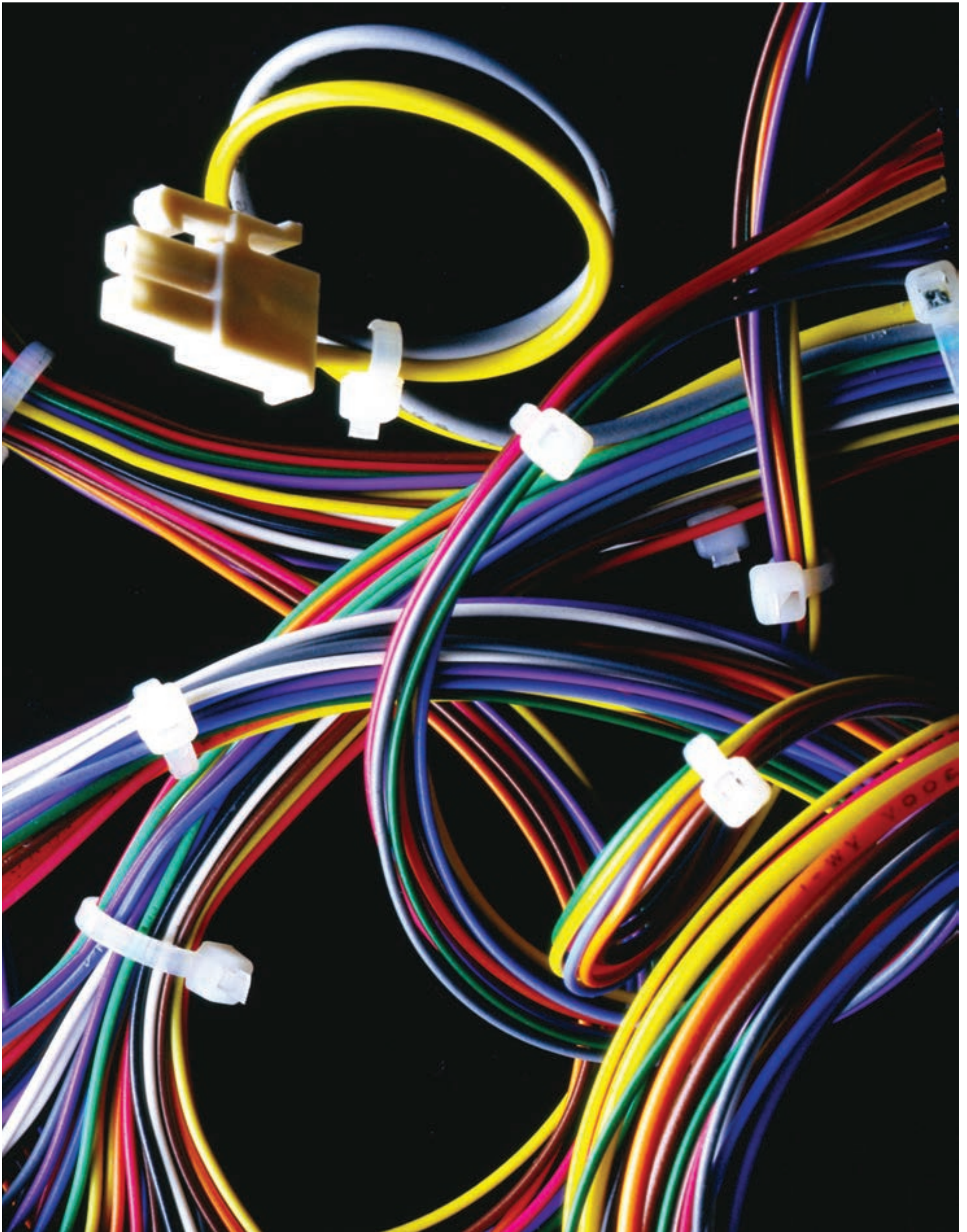
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Mentor Graphics Announces Acquisition of XS Embedded GmbH

Mentor Graphics Corporation (NASDAQ: MENT) announced the acquisition of XS Embedded GmbH (XSe), a technology leader in the creation of automotive system architectures and hardware reference platforms. XSe has over ten years of direct experience in the automotive electronics design industry across twenty automotive programs that combine hardware and software expertise. XSe brings a pioneering approach to accelerate system design and verification by providing automotive-grade hardware and software to reduce the time to SOP. Mentor is now well positioned to address the cross-functional collaboration needs required to address the trends towards integration of Advanced Driver Assistance Systems (ADAS), Driver Information and Infotainment domains.

Modern automotive systems push the technology envelope with feature-rich embedded systems that combine high-quality graphics, domain-specific audio, multi-media, mobile device integration and connectivity. The design challenges are tremendous with millions of lines of code per vehicle, cross-domain function consolidation, mixed safety criticality, security, and the use of heterogeneous multi-core SOCs. These challenges are exacerbated by extraordinary cost pressures and a traditional development lifecycle for systems that is measured in years while automotive consumer expectations require the latest in technology to be ever present.

“XS Embedded is recognized for its deep automotive domain expertise and unique IP including the AXSB automotive-ready reference board and software modules,” stated Glenn Perry, Mentor Graphics Embedded System Division general manager. “The hardware design and architecture expertise of XS Embedded combined with Mentor’s extensive automotive technology suite, including Android, Linux®, AUTOSAR, Security and Hypervisor solutions, provides greater flexibility while also reducing the time to SOP.”

XSe has pioneered a new approach that provides Tier 1 suppliers with reference platforms that approach A-sample quality. By taking advantage of this unique automotive-ready

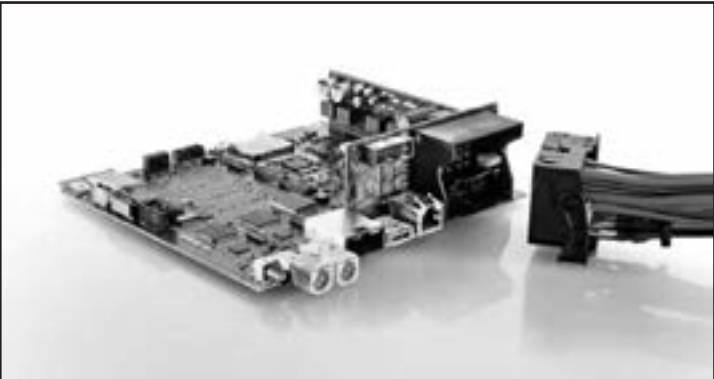
reference platform Tier 1 suppliers can not only drastically reduce time to SOP, but also improve architectural optimization, the partitioning of software and ultimately reduce design costs. XSe achieves this by partnering with key semiconductor vendors to supply truly automotive-grade hardware, such as XS AXSB based on the Texas Instruments Jacinto 6 platform, and integrating optimized IP including the XS OPTstack® software, a flexible software stack designed to be quickly ported and optimized to underlying hardware.

“By combining Mentor’s Android, hypervisor, security, AUTOSAR & Nucleus solutions with XSe automotive-ready solutions, we are able to address the entire vehicle software infrastructure requirements of the most sophisticated

vehicles in design today,” said Rainer Oder, managing director of XS Embedded. “The next-generation ADAS systems are a great example of the need for a unified vehicle software infrastructure and we are proud to be the first to market with an end-to-end solution.”

Mentor Graphics Corporation is a leader in electronic hardware and software design solutions, providing products, consulting services and award-winning support for the world’s most successful electronic, semiconductor and systems

companies. Established in 1981, the company reported revenues in the last fiscal year in excess of \$1.15 billion. Corporate headquarters are located at 8005 S.W. Boeckman Road, Wilsonville, Oregon 97070-7777. World Wide Web site: <http://www.mentor.com>



The XS AXSB Optimized Hardware and Software Platform from XSe, now a part of Mentor Graphics



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M85049/128-4	600-052-1	Standard, Stamped, Coiled
M85049/128-5	S3175-3	Mini, Welded, Flat
M85049/128-6	S3175-3C	Mini, Welded, Coiled
M85049/128-7	600-057	Mini, Stamped, Flat
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Applications

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Controlled Heating Zone

The Model 16B processor has two stamped foil heating elements that are manufactured to a strict wattage specification. Consistent temperatures (ambient to 650° C) are controlled by a thermocouple embedded into the upper heating element connected to a closedloop temperature controller. An alarm light illuminates whenever the actual heating element temperature varies from the set point temperature.

Speed Control

The belt speed is selected using a 3-digit thumbwheel via a closed-loop motor controller and DC gear motor.

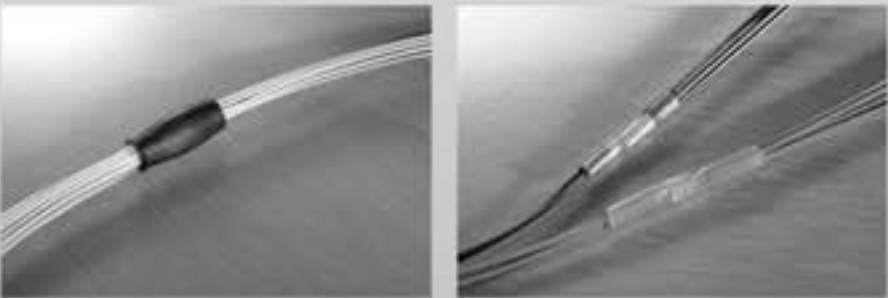
Minimal Skill Requirements

There are clearly marked guides for aligning the assembly as well as the tubing or device. The operator only has to center the assembly then the tubing and slide it into the belts. The belts carry the assembly through the heating and cooling zone, depositing them into the bin.

Labor costs are reduced significantly because once an operator loads an assembly, that operator can begin preparing another assembly. The throughput rate is usually limited by the rate at which the operator can load assemblies into the process.

Versatility

The processor is designed to process a broad range of heat-shrinkable products up to 19 mm [0.75"] in diameter and 90 mm [3.5"] in length. Heat output can be controlled to accommodate a wide variety of products and substrates.



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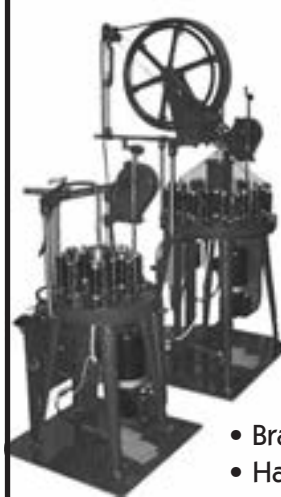
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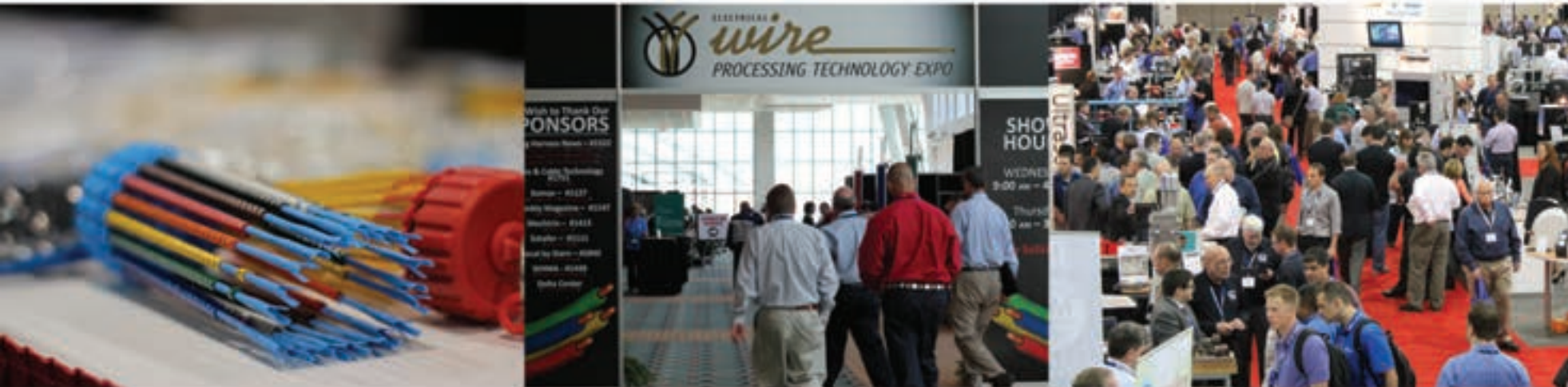


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