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Serving the Electric Wire and Cable Processor

WIRING HARNESS NEWS

MAY
JUNE
2015

Voice of
the industry

INDUSTRIAL INFO-TAINMENT

Reliable Electronics

By Fred Noer

Can a company be high touch in a high-tech world? At Reliable Electronics (RE) in Mount Vernon, N.Y., owner and president Jay Friedman certainly thinks so. Enthusiastic and outgoing, he is an avowed and self-described people person, and he defines his company by the relationships built and maintained by him and everyone on the staff.

Friedman's business model for RE is what he remembers as mom-and-pop grocery stores in Mount Vernon neighborhoods when he was growing up in the 1930s, '40s and '50s. "You knew the people running the shops, and they knew you," said Friedman, 79. "I want to emulate that work ethic and get to know our customers, give good service and be supportive."

"Relationships guide me, and I enjoy being associated with people and talk-

ing to them," Friedman said. "I'm the same as my dad, who was a people person. People here at Reliable are people persons, too. I train them to have the personal touch and be hands on."

Such attentiveness to current and prospective RE customers serves to differentiate the company from others in the wiring harness industry, particularly large firms, according to Friedman. He has no intention of growing substantially because it would jeopardize the emphasis on close relationships.

"I do what the big guys don't do," Friedman said. "I don't want to become a big manufacturer. I can't compete with big companies and their big numbers and their offshore facilities. I want to stay small and do what they can't do."

"Reps today can't get to know people because of e-mail, faxes and all the automated stuff," Friedman said. "Communications today are so different. Reps don't even go out to lunch with customers anymore."

The 2015 WHMA Conference

By Joe Tito
Wiring Harness News

I'm going to defy convention and begin with the conclusion. The 2015 Whma conference was truly an inspiring and insightful event. Having attended the last six WHMA events, and several back in the early days, I can say this from a solid footing. The numbers tell the story. Attendance was at an all time high, up 14% over the previous year. The number of exhibitors was also at an all time high. WHMA even had to get creative with last minute spaces for some new exhibitors.

The past three conferences have represented a ramp-up from previous years. It has become the seminal event in the wire industry to slow down, take a reflective view of your organization, and gain tools to immediately improve operations and strategic planning. The biggest challenge WHMA faces for the 2016 conference will be topping this one. Here's why.

The keynote speaker was the Hon. Allen B. West, retired US Army, and former Representative of Florida's 22nd district. I became a fan when he ran for congress in 2011, so his inspiring story

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Thru-hole secondary assembly station.

RE is a low-volume, high-mix manufacturer of wiring harnesses, cable assemblies, printed circuit boards (surface mount and through-hole) and electromechanical assemblies on a consigned, turnkey or mixed basis. One piece or hundreds or thousands of

pieces will be produced over assorted timeframes.

"Our typical order is in the hundreds or smaller, usually one that needs a quick turnaround," Friedman said. "Doing

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The Challenge of Articulating Value

Breaking the status quo takes a conversation system, fueled by great stories and great skills

By Ted Ergo, National Director
Corporate Visions, Inc.

Whenever you hear "90 percent" at the start of any sentence, you have a good idea that what you're about to hear is either really good or highly troubling.

Well, I don't like to be the bearer of bad news, but here are three findings that belong to the latter category:

- 90 percent of all marketing material goes unused by salespeople. (Source: Business Marketing Association)
- 90 percent of salespeople admit losing not only to an inferior product, but also to one that costs more. (Source: Sales and Marketing Management)
- Nearly 90 percent (89 percent, to be exact) of salespeople fail to get a second appointment with buyers. (Source: Forrester Research)

Needless to say, these are some pretty discouraging figures. So, if your job involves equipping salespeople with the messages, tools and skills to succeed in the field, what can you do to reverse some of these glaring issues?

In my recent presentation at the WHMA Annual Conference, I discussed a few strategies to help marketers and sales reps tell a provocative, status quo-busting story that resonates from lead to pipeline to close. Here are some ways to deliver a consistent story that gets your prospect to say "yes" to leaving their current situation and "yes" to choosing you:

- Identify unconsidered needs. Messaging that responds to what customers are telling you their problems are might seem like the best way to address their pain points. The problem with this approach, however, is that you won't be the only one doing it. In other

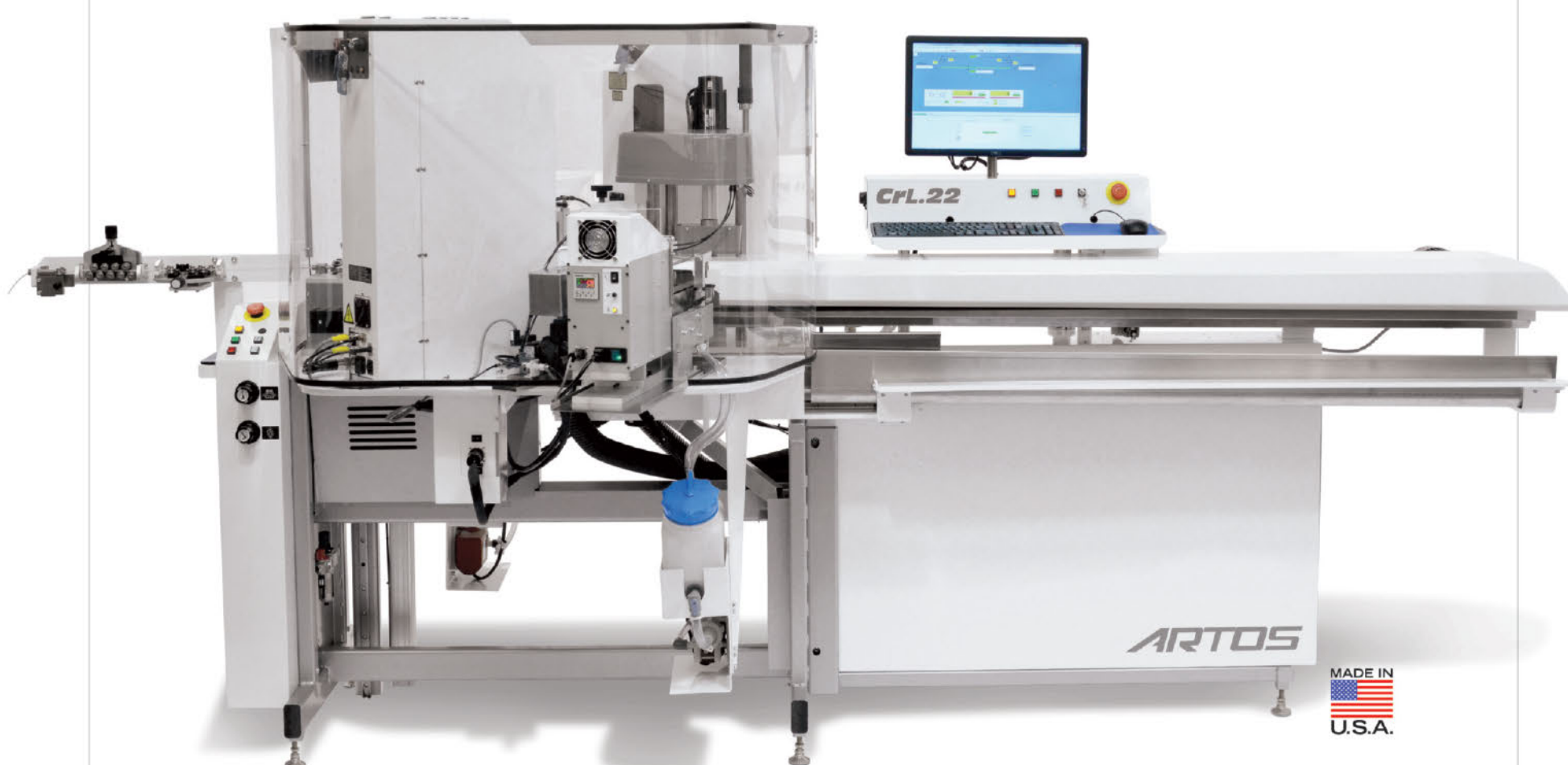
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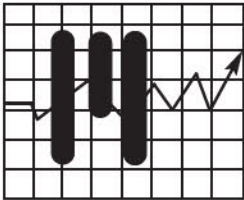
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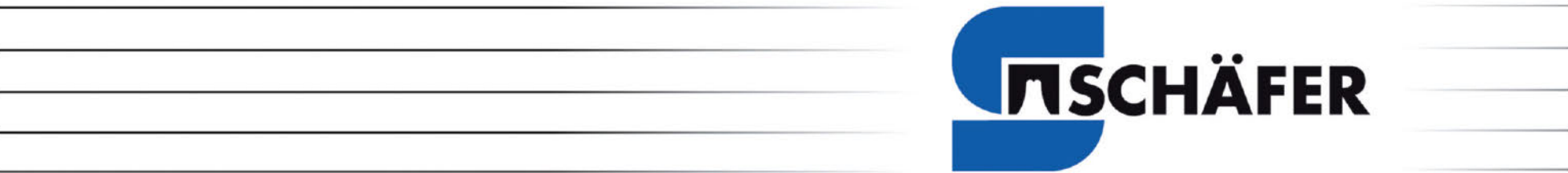
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When to Sell?

By Loren Smith

Owners of harness companies – either because they find themselves at a crossroads or because they are contemplating the future – often ask me about the most common reasons to sell their business. I respond that most reasons seem to fall into three basic categories:

Burnout

Burnout is a reality in any career, and it can particularly take a toll on entrepreneurs. Statements I hear from owners are “It seems I’m solving the same problems over and over” and “I’m tired of sitting across from a customer who doesn’t know the difference between a balance sheet and a balance beam but who has the ability to put me out of business.”

Also, many entrepreneurs have been successful largely because of their exceptionally hard work and talent for wearing many hats. Individuals who fit this profile are typically not inclined to delegate a lot of what they do, and at some point the hours and stress are just too much.

Change in personal circumstances

Leading the pack in this category is the intention to retire. When an owner does not have any family members who



Loren Smith, CEO

want to step into the business, at some point he or she needs a succession plan, and this drives the decision to look for buyers. Other factors include illness, divorce, a desire to relocate and a need for significant cash.

Whatever the personal reason, generally the owner wants to exit the business as quickly after the closing as possible.

The need for capital or expertise to grow effectively

Sometimes an owner does not want to exit the business, but change is a must. One reason is business stagnation; the owner realizes growth is imperative for survival. In the other instance, business is growing, but the owner is having

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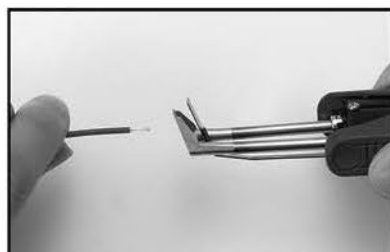
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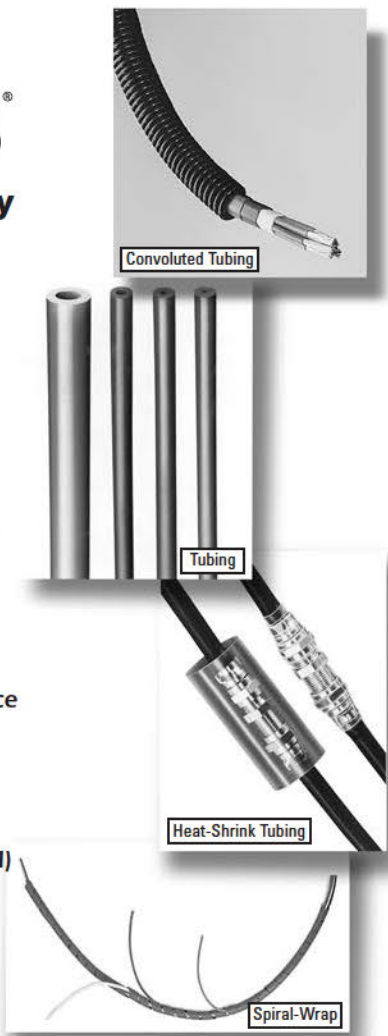
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When to Sell?

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a hard time keeping up with increased demand--and a failure to respond adequately to demand will risk losing customers.

In each of these situations, the owner recognizes the need for outside help in the form of an infusion of capital or expertise, or both. And whether the objective is capital or expertise or a combination, pursuing these solutions requires more analysis because the owner needs to determine his or her new role in the company and the desirable relationship with whoever is entering the picture.

Assisting an owner with this kind of transaction is, therefore, more involved than with one where an owner wants to walk away after a brief transitional peri-

od. We need to help the owner identify his or her optimal situation, and we need to help prospective buyers understand how growth can occur and how they will be critical in that growth. In these instances prospective acquirers will be buying the future at least as much as they are buying the past.

The bottom line

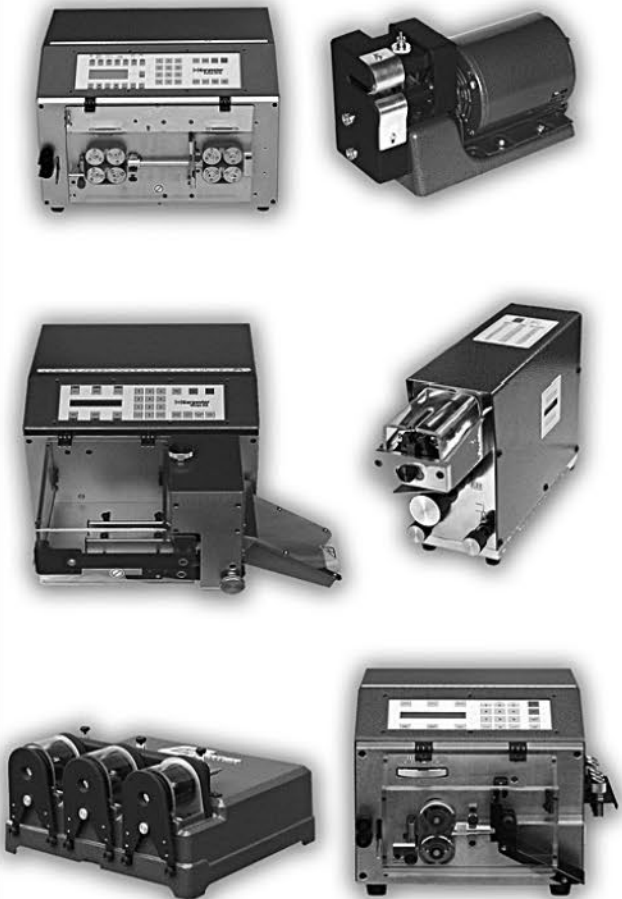
Owners decide to sell all or part of their business for entirely different reasons. As a result, it is essential to listen carefully to the owner's motivation and match his or her needs with the prospective buyers who are out there.

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



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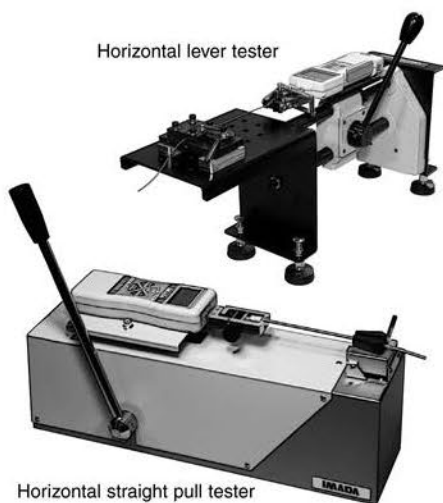
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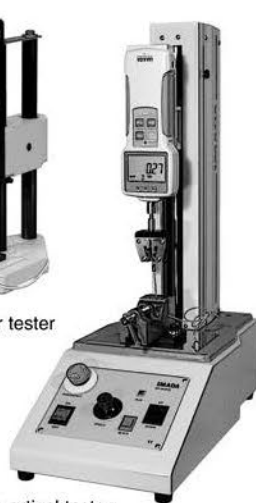
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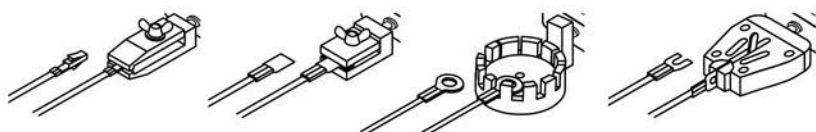
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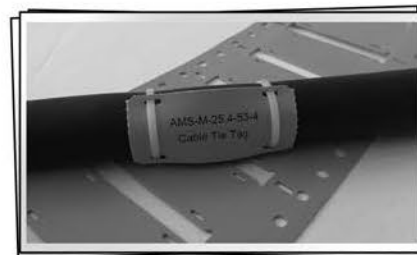
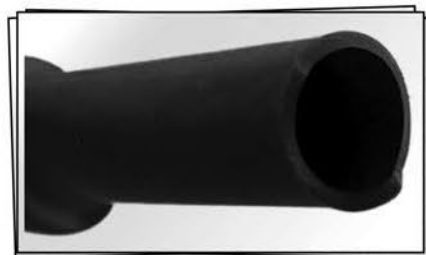


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CE-Marking of Cables

The final countdown has started

By Fredrik Rosén



Fredrik Rosén

The fire properties of cables are of great importance from a fire safety perspective. As a result, cables have been included in the classification system under the European Construction Products Regulation (CPR), following SP's proposing of the classification system to the European Commission. The European CEMAC project (CE-Marking of Cables), for which SP Fire Research has provided technical management, has recently been concluded. The results of the work will significantly reduce the volume of testing required for CE-marking of cables in Europe according to the CLC/TS 50576 standard for extended field of application (EXAP).

construction products and guarantee their unlimited use within the EU.

The CPR consists of four main elements:

- A system of harmonised technical specifications
- An agreed upon system of attestation of conformity for each product family
- A framework of notified bodies
- The CE-marking of products

The road to CE-marking

The objective of the CPR, which regulates building products on the European market, is to ensure the free movement of all construction products within the European Union with respect to the essential health and safety requirements. When it comes to cables, safety in the case of fire is the only requirement. An additional objective of the regulation is to standardise the manufacturing of

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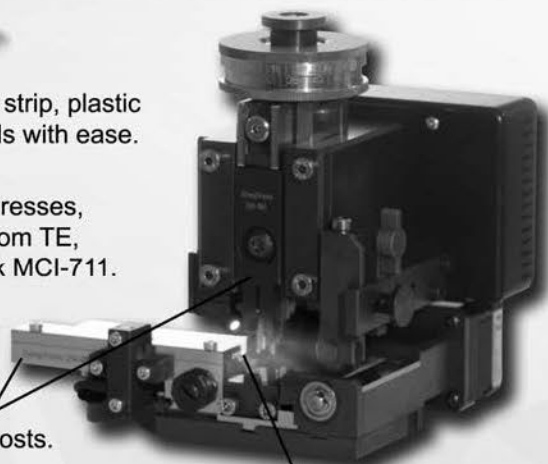


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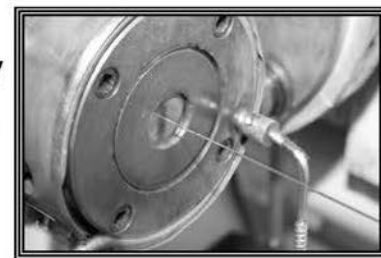
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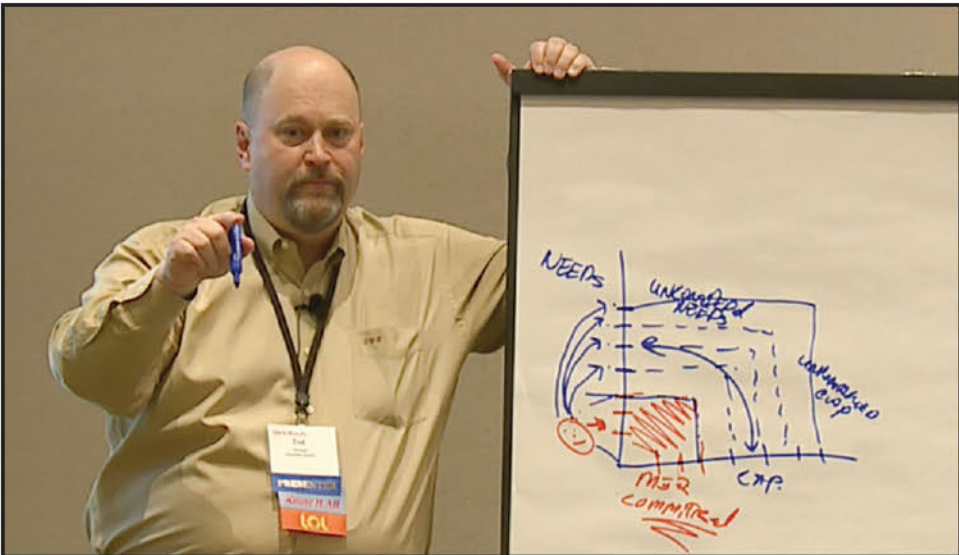
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The Challenge of Articulating Value



Ted Ergo from Corporate Visions, Inc. recently presented a program at the WHMA conference discussing “Defining Your Value Proposition.”

Continued from page 1

words, if you're just responding to known needs with known capabilities, you'll struggle to create separation between you and your competitors, and you'll end up having conversations that validate your prospects' notion that your solutions are commodities. This makes the conversation gravitate to the last thing you want it to be about—price.

your solution and your prospect's status quo, giving them no compelling reason to change. To drive uniqueness and unexpected urgency into your customer conversations, you have to unearth your prospect's unconsidered needs and then link those challenges they didn't know about to your unconsidered strengths. The key here is to focus on finding problems, not just solving them.

These commodity box conversations also fail to show clear contrast between

Continued on page 12

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1 14 To M11
2 15 To M11
3 16 To M11
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8 21 To M11
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11 24 To M11
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CableEye Wiring Report

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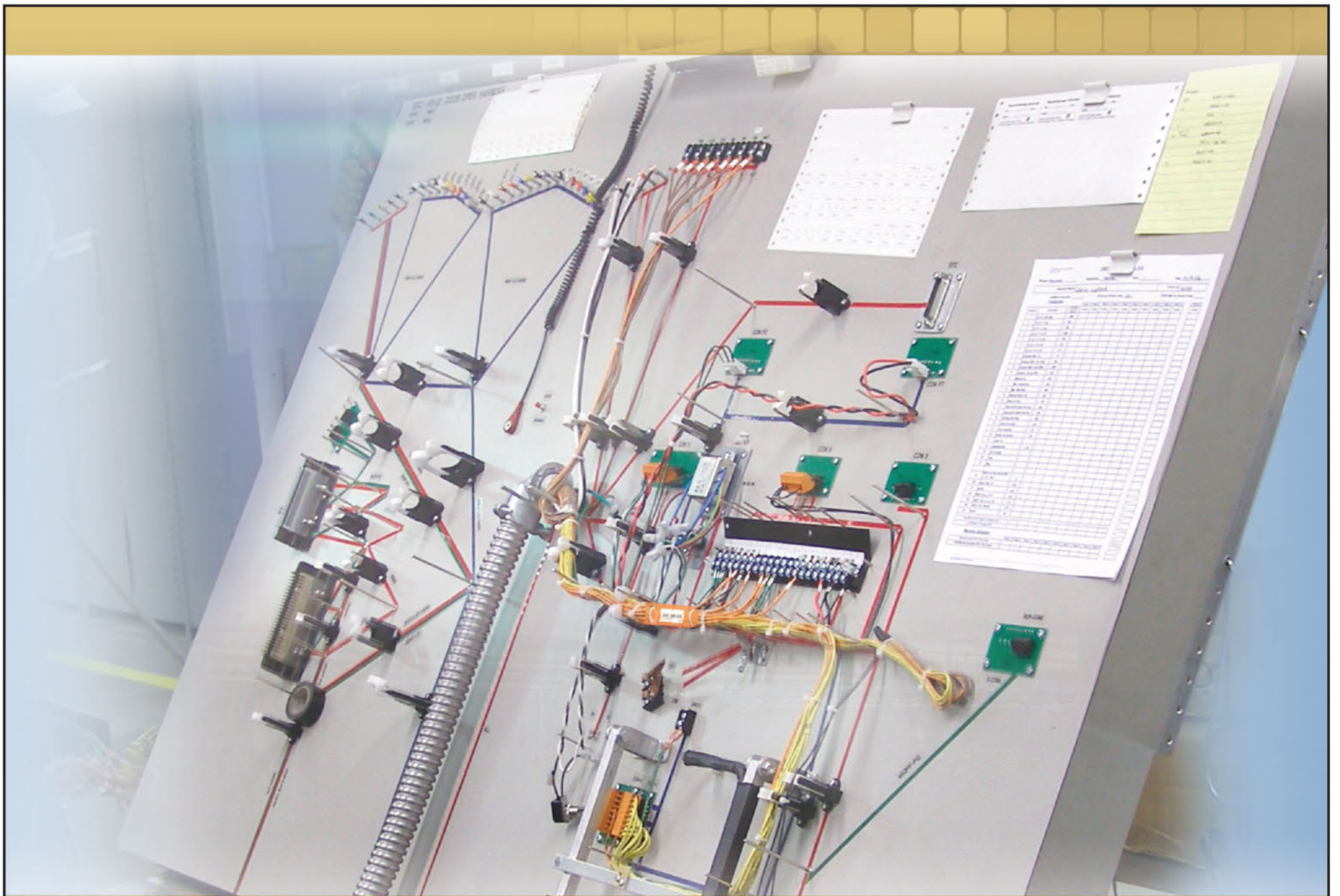
Name: HD44 PUBLICITY SHOT 2-AXIS CONTROLLER CABLE

Test Technician: David D

PASS

NOTES

2-AXIS CONTROLLER CABLE
Completed Type: High Density (24, 40, 68, 128, 256, 512, 1024, 2048, 4096, 8192, 16384, 32768, 65536, 131072, 262144, 524288, 1048576, 2097152, 4194304, 8388608, 16777216, 33554432, 67108864, 134217728, 268435456, 536870912, 1073741824, 2147483648, 4294967296, 8589934592, 17179869184, 34359738368, 68719476736, 137438953472, 274877906944, 549755813888, 1099511627776, 2199023255552, 4398046511104, 8796093022208, 17592186044416, 35184372088832, 70368744177664, 140737488355328, 281474976710656, 562949953421312, 1125899906842624, 2251799813685248, 4503599627370496, 9007199254740992, 18014398509481984, 36028797018963968, 72057594037927936, 144115188075855872, 288230376151711744, 576460752303423488, 1152921504606846976, 2305843009213693952, 4611686018427387904, 9223372036854775808, 18446744073709551616, 36893488147419103232, 73786976294838206464, 147573952589676412928, 295147905179352825856, 590295810358705651712, 1180591620717411303424, 2361183241434822606848, 4722366482869645213696, 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The Challenge of Articulating Value


Continued from page 10

- Create the buying vision. So you've finally won that critical first meeting with a prospect. There's no question that your campaigns have done their job. But just because you're meeting in person with a potential buyer doesn't mean they've committed to making a change. In all probability, you're still at a point where you need to deliver a compelling "why change" story - one that stays consistent with the messaging in your campaign content. A good "why change" story will show your prospects a pathway to change. You achieve this by creating urgency around their current situation, and by demonstrating how sticking with the status quo poses more risks than embracing a change.
- By focusing on the "why change" question first, you position yourself to differentiate even more convincingly once it's time to show prospects why they should chose you. That's because you've created a buying vision that's built around a change management project that you are uniquely qualified to lead.
- Speak to executive-level business concerns. Once you've created the

buying vision, it's now time to elevate your customer conversation to the executive-level decision makers, securing their buy-in. Doing that comes down to articulating a sound business case for your solution. Specifically, that means linking your solutions to your prospects' business problems and speaking to the financial metrics and business challenges that affect them. To be great in this conversation, your sales training needs to focus on developing financial acumen, so that your reps have the ability to deliver powerful value propositions that justify customer investment.

Many of the ongoing challenges in B2B sales are the result of customer conversations that fail to make the impact needed to defeat the status quo. The good news is that these challenges can be overcome. By messaging with a purpose, and having sales conversations that create a buying vision and highlight your business impact, you'll be able to tell compelling stories that articulate value throughout the buying cycle.

Ted Ergo is a National Director at Corporate Visions. His deep experience in all areas of sales and sales management give him a unique perspective on how to effectively communicate with customers and win more business.



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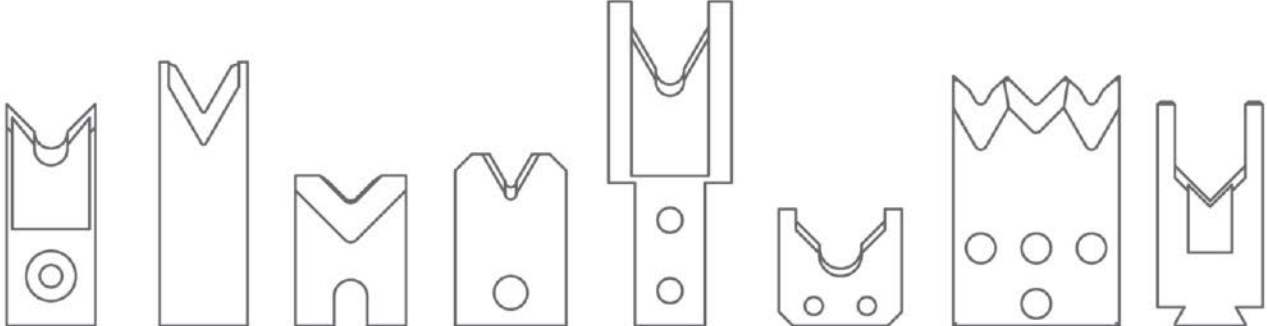
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The 2015 WHMA Conference

Continued from page 1

and frank nature were familiar to me. Many in the room were not familiar with Allen West, but were quickly enthralled by his vision of leadership. He began his speech by thanking manufacturers for producing the wiring systems for the Multiple Launch and High Mobility Artillery Rocket Systems his units deployed. Most of Allen's presentation covered what he called the 5 C's of leadership: courage, competence, commitment, conviction, and character. His definition of leadership also includes strong communication, and he stated, "Leadership is about taking a very diverse group of individuals and getting them focused on the accomplishment of a singular goal." At the conclusion of his remarks, he extolled the virtue of what he called servant leadership, meaning that a true leader is there to serve, and not to be served.

During a question and answer session, Allen West passionately encouraged the audience to communicate to employees exactly how increasingly intrusive laws and regulation affect businesses. He thinks corporate leaders are often hesitant to engage in any type of political discussion among friends and employees. He feels there should be less reticence in discussing these issues, and mentioned that when his kids bring friends around the West household, "they know they are going to get a lecture."

Ted Ergo from Corporate Visions, Inc. was next with a discussion entitled **Defining Your Value Proposition**. I felt sorry for Ted because Allen West had created such a high energy level, but Ted kept it going with a very upbeat and insightful presentation. There is a companion piece by Ted in this issue of *Wiring Harness News*, and it's a great outline of his presentation. Ted used only a white board and markers for his presentation...no PowerPoint slides! The research at Corporate Visions is overwhelming that this is a much more effective way to communicate a message. I created a link, <http://bit.ly/1CmMwik>, for a video Ted's company shared with me on this subject. I would encourage you to watch the video and share it with your sales

force.

Jean Kelly of Florida Health Underwriters Association returned this year to discuss **The Affordable Healthcare Act**. Jean does a masterful job of making sense of this constantly moving target, while keeping the conversation engaging. Jump on their website for resources to help navigate the changes if you were unable to attend.

David Pheteplace of Bishop and Associates was next with an update on the **North American Cable and Harness Market**. David's presentations are always rich with well researched market projections. I can't imagine running a cable and harness business without this data.

Here's a highlight of some of the higher 5-year compound annual industry growth rates he discussed:

- Telecom/Datacom - Up 6.4% fueled by infrastructure builds, and upgrades to support bandwidth and speed demands for mobile devices and cloud computing.
- Automotive - Up 6.1%, with this segment expected to stay strong.
- Consumer Goods - Up 15.4%, due to pent-up demand, and low interest rates.
- Industrial - Up 6.5%, primarily in support of automotive, energy exploration, HVAC, and appliance jumps.

A glimpse into the future for
Continued on page 16

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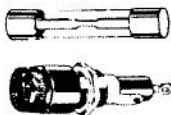
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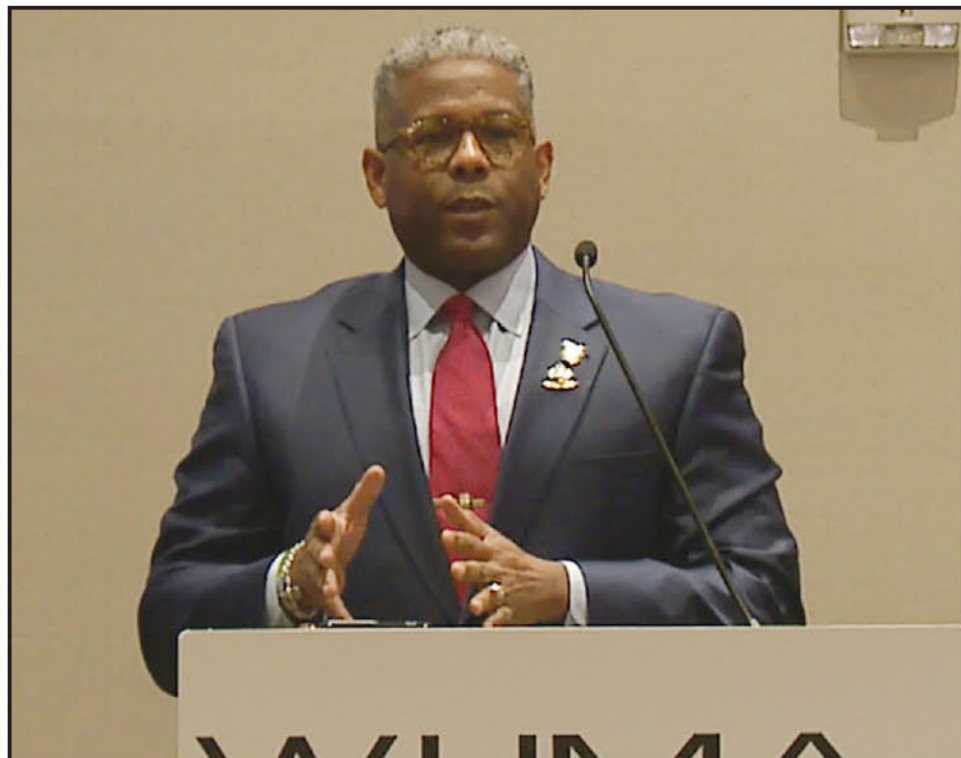
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The 2015 WHMA Conference



The WHMA Conference keynote speaker was the Hon. Allen B. West, retired US Army, and former Representative of Florida's 22nd district.

Continued from page 15

aerospace and marine wiring systems was given by David Litz of TE Connectivity. In short, look for lighter weights, higher temperature environments, smaller sizes, faster data rates, more power conveyance, and much greater corrosion resistance in these systems.

WHMA scheduled two manufacturer panels to present during the two day conference. Howard Strauss, of South-

wire, and Fred Kelly of General Cable, comprised the Wire Manufacturers Panel. Howard spoke in depth about what to expect in copper pricing. He outlined a widely expected global surplus in copper in 2015, but warned that cuts in copper mine output could lessen the surplus. He contended that it won't be until 2017 or 2018 when copper demand will again begin to outpace supply.

Continued on page 18

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The 2015 WHMA Conference

Continued from page 16

The reasons he cited for the current copper surplus are:

- Hedge fund redistributions, with heavy selling in Chinese funds.
- A strengthening US dollar.
- Lower oil prices.
- China GDP to slow to 6.8% in 2015 from 7.2% in 2014.

Fred Kelly discussed the migration from SAE to ISO wire types among OEM's, and advised the trucking industry will remain SAE. He further asserted trends towards higher performance specifications, smaller overall wire sizes, higher speed and data specifications, and alternative conductor materials in

both the automotive and trucking industries in North America. Fred's final admonition was that as emission standards go up, so do operating temperatures; so the selection of the right product will be key.

Rounding out day one was the Processing Equipment Manufacturer Panel hosted by Darren Teask of Schleuniger, Kevin Denning of Cirris, and Brent Stringham of Komax. This was a uniquely co-presented forum covering ways lean principles are working within their customers organizations. A big takeaway was the concept of Overall Equipment Effectiveness, which is the ratio between the design capacity of a piece of equipment, and its actual capacity during scheduled

run periods. They defined world class OEE as 85% or higher.

Day 2 began with a presentation entitled Digital Marketing Platform Development, with Sean Rosinko of Verndale, a Global Experience Technology company. We have all heard content is king, and since content is becoming so ubiquitous, it is wise to manage this content with the use of customer experience management software. He also advised that today's internet user is surfing more, but committing less. Verndale helps companies tailor the online experience to various user demographics, thus focusing the strategy on the user.

David Bergman of IPC was next with an update of the WHMA/IPC

A-620 specification. David stressed to the audience the importance of having a member of their organizations involved in future iterations of the specification. Because it can be costly and impractical for some companies to have team members attend meetings, IPC has set up a conferencing system called KAVI.

As a capstone to their conference presentations, WHMA routinely holds three 40 minute round table sessions with all of the presenters. Is a chance to get clarification on some of the finer points, and pick the brains of the experts to gain insights on implementing these strategies. This years round tables were lively and informative.

Networking represents one of the single biggest benefits at WHMA conferences, and there are many opportunities during the event. Cirris and Schleuniger sponsored the kick-off Exhibitor Reception, and Daniels Manufacturing sponsored the Thursday Breakfast with Exhibitors. The Thursday Luncheon with Exhibitors was sponsored by Wiring Harness News and Southwire, and IEWC covered the evening Casino Poolside Reception. YRC Freight sponsored the Friday Continental Breakfast.

This would be a good time to go back and reread the first two paragraphs. For me, the 2015 WHMA Conference was an enjoyable and enriching event. I have already put specific tactics I learned into effective use in my marketing consulting efforts. I can't wait to see how they top this for 2016!

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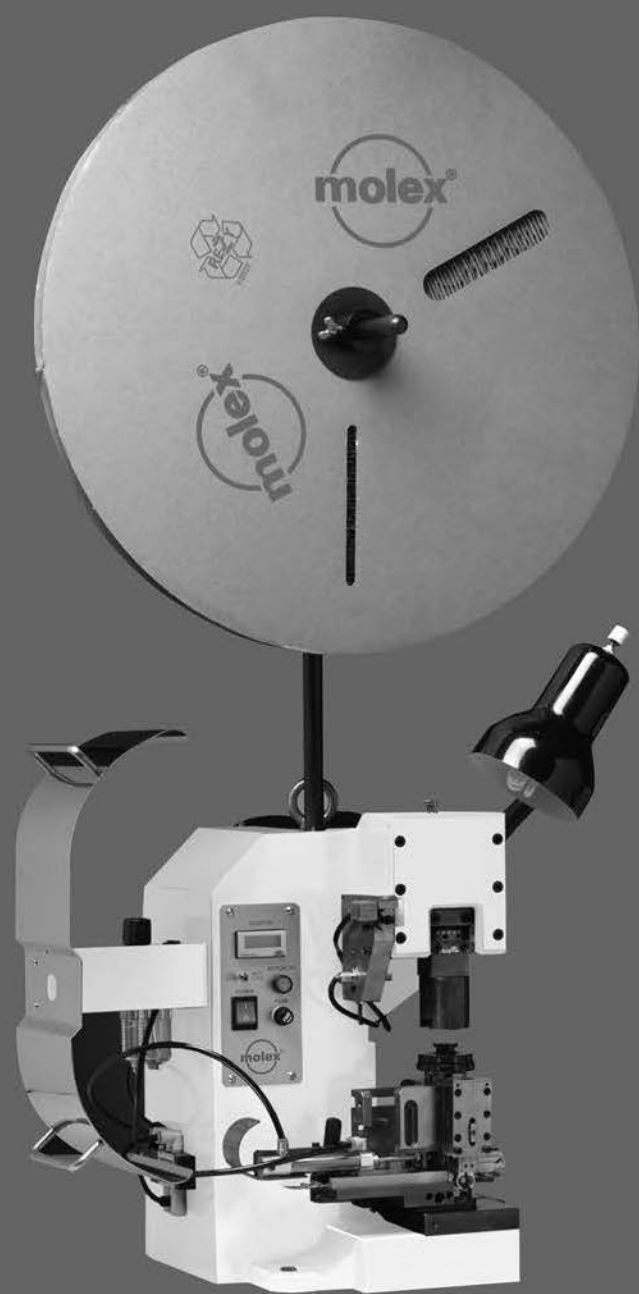
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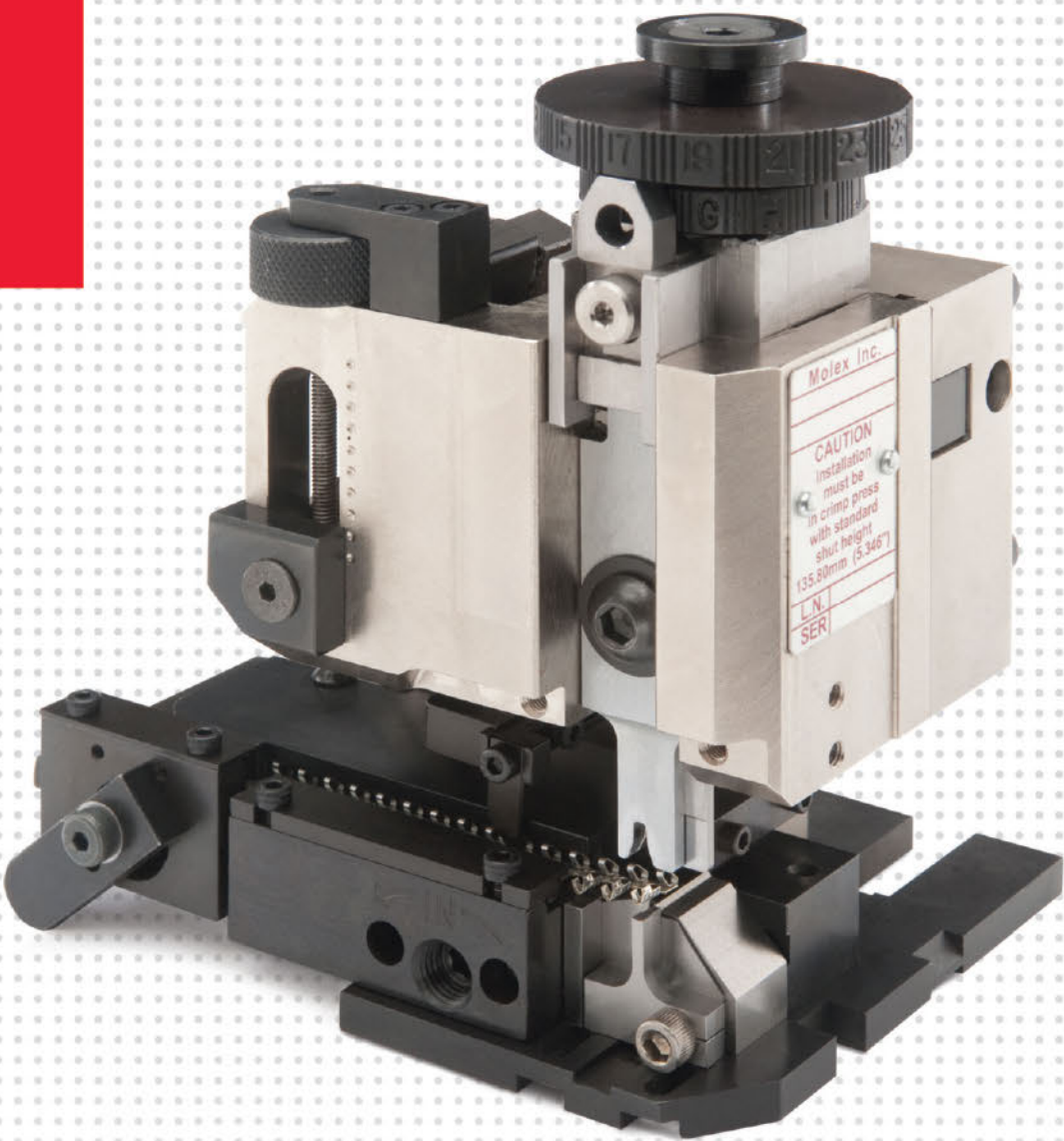
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CE-Marking of Cables

The final countdown has started

Continued from page 8 _____ described below.

The Regulation is not intended to harmonise regulations/building codes, as EU Member States are free to set their own requirements regarding the performance of works and, therefore, products. Instead, its objective is to harmonise the methods of testing, declaration of product performance values, and conformity assessment. The choice of value for intended use (fire technical classifications) is left to the regulators of each Member State.

When a construction product is covered by a harmonised standard, the manufacturer is required to draw up a declaration of performance (DoP) when it is placed on the market. This means that the manufacturer is responsible for the conformity of the construction product to the DoP.

For any construction product to which a harmonised standard applies, the CE-marking should be the only sign or symbol visible on the product. This marking visually signifies that the product conforms to the specifications of the harmonised standard it is covered by.

In order to obtain a CE-marking for cables, there are certain steps and procedures that the manufacturers must go through and comply with. These are

The Product Standard EN 50575 will make CE-marking possible

In September 2014, the CENELEC TC 20 (European Committee for Electrotechnical Standardization, Technical Committee 20) published a product standard for cables; EN 50575 (Power, control and communication cables. Cables for general applications in construction works subject to reaction to fire requirements). EN 50575 is expected to be published in The Official Journal of the European Union (OJ) in mid-2015. The OJ is the official compendium of EU legislation (L series) and other official documents of the EU institutions, bodies, and agencies (C series and its supplements).

This means that all cable manufacturers who intend to sell cables for use in permanent installations in buildings in Europe must obtain CE-marking for their products. Once the standard is published in the OJ there will be a transitional period, which has not yet been defined.

Extended Field of Application rules (EXAP)

The EXAP standard CLC/TS 50576 allows a limited number of cables



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belonging to a larger group ('family') of cables to be fire-tested. The results of these tests are interpolated for the classification of part of, or the entire, cable family. This eliminates the need for the extensive testing of the individual cables of a cable family that can be expected to have the same fire behaviour. In most cases, EXAP is a prerequisite for CE-marking.

In SP's process, cables are reviewed and grouped by product families. Based on the EXAP rules and whether a "Specific" or "General" EXAP rule is being worked with, two or three cables from each family are chosen for type testing and specified in an EXAP report.

Compulsory fire test standards

Manufacturers must test the cables specified in their EXAP report in accordance with two compulsory standards:

- EN 50399 (Common test methods for cables under fire conditions - Heat release and smoke production measurement on cables during flame spread test). This is the most commonly used fire test for cables. Measured quantities are Flame Spread (FS), Heat Release Rate (HRR), Total Heat Release (THR), Fire Index Growth RATE (FIGRA), Smoke Production Rate (SPR), and Total Smoke Production (TSP). Toxic gas species can also be measured using Fourier Transform Infrared Spectroscopy (FTIR).
- EN 60332-1-2 (Tests on electric and optical fibre cables under fire

conditions - Test for vertical flame propagation for a single insulated wire or cable). In this test, a flame with 1 kW of heat output is applied to a single cable. The measured quantity, H, is the length of the combusted or charred section of the cable.

Fire classification

There are seven fire classes specified in EN 50575: Class A_{ca} relates to non-combustible products, e.g. cables with ceramic insulation. Class B1_{ca} refers to products which are combustible, but which contribute least to the spreading of fire, while B2_{ca} and C_{ca} represent products which may spread a fire to some degree. Products in Class D_{ca} have fire characteristics similar to those of ordinary wood, while E_{ca} consists of products that are not easily ignited by a small flame, but for which there are no requirements with regard to heat and smoke release. F_{ca} indicates that no performance class has been determined. Comparing this system with that for surface-covering materials, in which Euroclass A is non-combustible and Euroclass D represents wood, it can be seen that the two run parallel.

The product strategy of the manufacturer, as well as the demand of the market, guides the manufacturer as to what fire technical class to obtain. In addition, and as discussed above, each European

Continued on page 22

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CE-Marking of Cables

Continued from page 21

in accordance with EN 50575.
(See flow chart on page 24.)

country's building code will specify which fire classifications are required.

Classification report

The results of the fire tests are presented in reports, which are then used as a basis for a classification report in accordance with EN 13501-6 (*Fire classification of construction products and building elements. Classification using data from reaction to fire tests on electric cables*).

The classification report provides the manufacturer with the basis for the CE-marking of cables

The FIPEC (Fire Performance of Electric Cables) and CEMAC (CE-Marking of Cables) projects

SP was responsible for proposing the classification system for reaction-to-fire properties to the European Commission, based on the work carried out by the FIPEC and CEMAC projects. The CEMAC project included comparison calibrations of the EN 50399 testing method, along with certain techni-

cal improvements which were subsequently incorporated into CENELEC's standardisation work. Much time and effort was put into the calibration of test equipment around Europe, as well as the calculation methods for the presentation of test data. Perhaps the most important part of the work, however, was the production of Extended Field of Application rules (EXAP).

This allows a limited number of cables belonging to a larger group ("family") of cables to be fire-tested, with the results being interpolated for the classification of part of, or the entire, cable family. This eliminates the need for the extensive testing of the individual cables of a cable family that can be expected

to have the same fire behaviour. In most cases, EXAP is a prerequisite for CE-marking.

Which AVCP system will apply to the product?

EN 50575 specifies which Assessment and Verification of Constancy of Performance (AVCP) system should be applied to the products from each fire class, along with the responsibilities of the manufacturer and the Notified Body (NB) with regard to the CE-marking process.

For System 1+, the manufacturer shall carry out:

- Factory production control
- Further testing of samples taken at the factory in accordance with the prescribed test plan

For System 1+, the notified product certification body shall issue the certificate of constancy of performance of the product on the basis of:

- Determination of the product-type on the basis of type testing (including sampling), type calculation, tabulated values, or descriptive documentation of the product
- Initial inspection of the manufacturing plant and of factory production control
- Continuous surveillance, assessment, and evaluation of factory production control
- Audit-testing of samples taken before placing the product on the market

For System 3, the manufacturer shall carry out factory production control, and the notified testing laboratory shall carry out determination of the product-type on the basis of type testing (based on sampling carried out by



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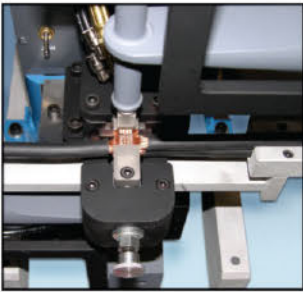
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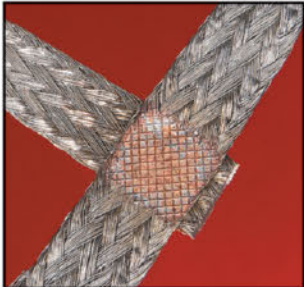
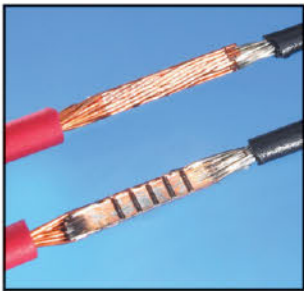
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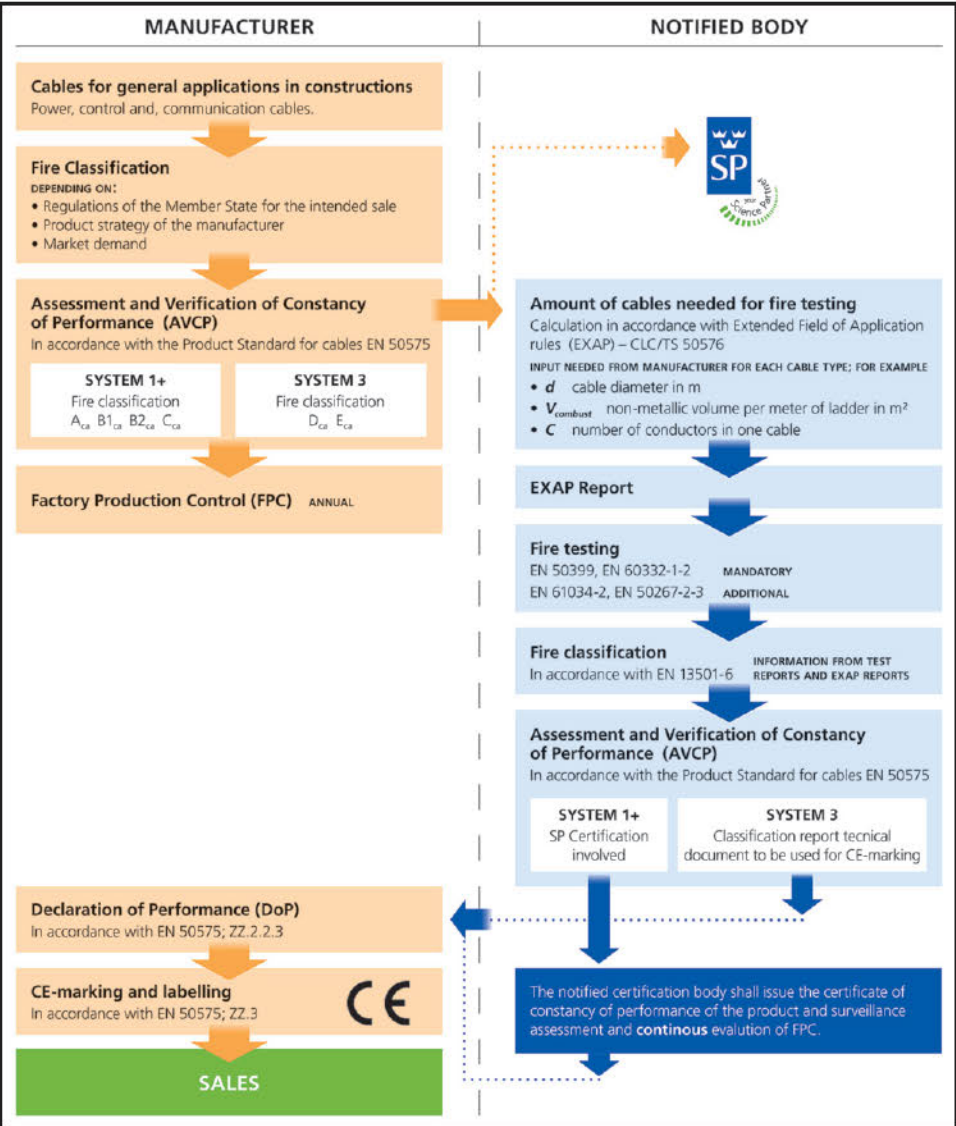


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Flow Chart




the manufacturer), type calculation, tabulated values, or descriptive documentation of the product.

Use of facilities outside of the testing laboratory of the notified body

Regarding the use of facilities outside of the testing laboratory of the notified


body, Article 46 of the CPR states that: “under certain conditions notified bodies [are allowed to] carry out tests using testing facilities outside the testing laboratory of the notified body only on request of the manufacturer”. Thus, Article 46 makes it possible for SP, in its

Continued on page 24



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CE-Marking of Cables

Continued from page 23

capacity as a Notified Body (NB), to carry out tests using e.g. the manufacturer's laboratory and testing equipment rather than its own, as SP will be among the NBs "specially designated as competent to work away from their own accredited test facilities".

In such a scenario, it is crucial that the NB acts in an independent and impartial manner. The NB may be assisted by personnel from the manufacturer's organisation, but "[t]he use of facilities outside the testing laboratory of the NB must not in any way compromise the Notified Body's compliance with EN ISO/IEC 17025".

In short, Article 46 states that the NB has full responsibility for the tests, test results, and reporting of the tests performed at the manufacturer's own laboratory.

Fire resistance

There is also ongoing standardisation work within CENELEC with regard to the fire resistance of cables. The main standard being discussed is prEN 50577 (*Electric cables - Fire resistance test for unprotected electric cables (P classification)*). Its purpose is to evaluate the ability of a cable to maintain electrical circuit integrity throughout a defined time period, during exposure to fire under the conditions of the EN 1363-1 standard time/temperature curve and

when installed in standardised, representative conditions. SP currently offers tests according to this preliminary standard.

When prEN 50577 is formally published, fire resistance will also be included in the classification system under the CPR. As a result, it will be a compulsory requirement for cable manufactures to fulfil.

The future

At first glance, the system's specifications might appear to be somewhat difficult to fully meet. SP is aware of this, however, and is ready to assist cable manufactures, by grouping cables in product families in accordance with the EXAP standard CLC/TS 50576. This will considerably reduce the number of tests needed. SP can also guide cable manufacturers through the European system, and assist cable manufactures in maximising product approvals through reducing the number of tests.

Many cable manufactures have started the process of fire testing their products, in order to be prepared for the publishing of EN 50575. Doing so will ensure that CE-marking certificates may be efficiently and swiftly issued.

For further information please email Fredrik Rosén at fredrik.rosen@sp.se; Johan Post at johan.post@sp.se or Marina C Andersson at marina.andersson@sp.se. +46 105 16 56 86

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New License Rental Options Unveiled at Electrical Wire Ptrocessing Technology Expo

Cadonix Ltd, the Cloud based automotive wiring harness CAD specialist, demonstrated the advanced new features of Arcadia 2015 v2.0 for the first time during the Electrical Wire Processing Technology Expo in Milwaukee, Wisconsin. Visitors to Cadonix stand also discovered new license rental and evaluation options.

Arcadia 2015 v2.0 has been developed following customer feedback and features a new Formboard tool for harness manufacturers as well as closer integration of the Schematic Design and Harness Professional tools and enhanced manufacturing reports. The new features will enable OEMs and harness manufacturers to further streamline their design and manufacturing processes.

Formboard is a new tool within Arcadia alongside Schematic Design and Harness Professional. It provides a complete solution for creating 2D harness drawings for manufacture. The Formboard view provides a complete 2D view of the harness defined and includes both electrical and non-electrical components. A Synchronize Harness feature is available to automatically update not-to-scale harness layouts to full size Formboard details in preparation for manufacture.

Cadonix has also implemented back annotation between the Schematic Capture and Harness Professional tools, giving customers the option to reflect changes made during the harness design process in the original schematic. It has also added a number of new manufacturing reports, and improved some of the existing reports.

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Five Things to Know About Automatic Crimping Machines

By Zachary Koazk
Marketing & Communications
Analyst, Komax Wire

In today's competitive business environment, wire harness manufacturers are winning contracts by the penny. When every penny counts, manufacturers look to wire processing equipment suppliers to help cut production costs and improve the cost per lead. With more and more OEM's requiring suppliers to meet quality standards such as the IPC/WHMA-A-620 and aerospace's SAE AS7928, wire crimping is always a hot topic in the wire processing industry. Every company should identify 5 key things to know before purchasing an automatic crimping machine.

1. Understand Your Production Volume

A quick Internet search for wire crimping machines will return a number of potential suppliers with diverse prod-

uct offerings. Machines that range from semi-automatic loose piece crimping to fully automatic measure, cut, strip, and terminate are all available in the market. But how does one know what crimping machine to choose from? We at Komax Wire recommend running a production analysis of all current jobs to better understand the number of crimps required for each. From there, a company can consult with an applications or sales engineer specialist to determine the cost savings between semi-automatic and fully-automatic machines.

2. Understand Current and Future Applications

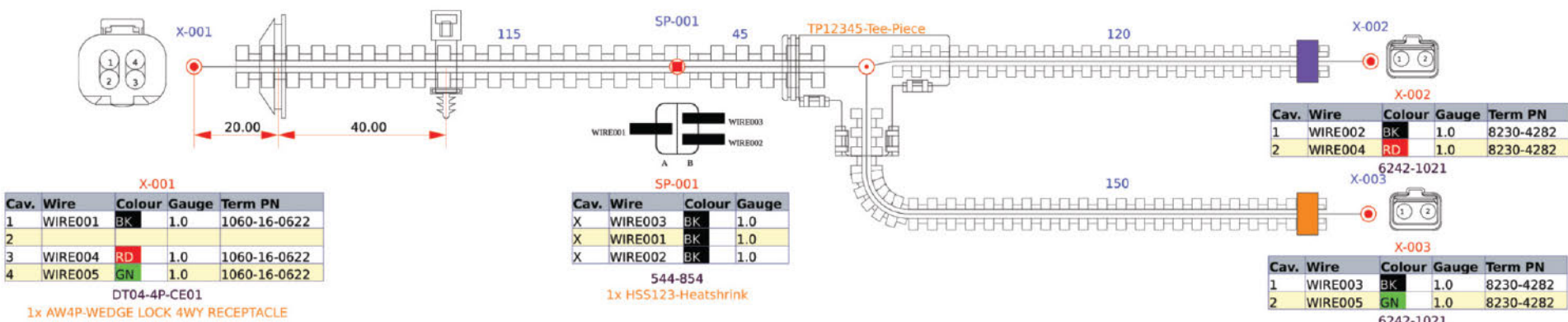
Product innovation, especially in industries such as automotive, military, and aerospace, is a main driver to an OEM's long-term sustainability. As products and applications evolve, so will the wire harness requirements of the customer. How will these application changes affect future production requirements? In regards to fully automatic crimping machines, the flexibility

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of the machine should act as a defining characteristic for a typical contract manufacturer. Double crimping, MIL-crimping, ferrule crimping, tinning, and seal insertion are all common applications among North American OEM's. As different industries possess different challenges, customers should plan accordingly to meet these requirements on an open platform crimping machine. Customers should always think of the future and how will their crimping machine meet the needs for business not just now but in 5 years and beyond.

3. Choosing the Right Supplier

Customer and technical service should be expected for customers when purchasing capital equipment. As many customers rely on one fully automatic crimping machine for its production needs, technical service is critical in the instance a machine stops running. Some suppliers train and certify their technicians across all products while others train technicians only for specific product categories. Make sure to perform the due-diligence and understand the service structure of the supplier and credentials of each service technician.

4. Quality is King

One of the fastest ways businesses can cut costs is by reducing unnecessary scrap material. Crimp force analyzing (CFA) software is able to detect inaccurate strip lengths, missing strands, crimp height, and insertion depth. While many companies today may not utilize CFA, making the necessary changes to incorporate CFA may pay dividends for such a small investment. Reduce the number of faulty crimps and save money in your manufacturing costs.

5. Robustness and Durability of the Product

Not all crimping machines are alike, and when it comes to the accurate repeatability of wire crimps; Quality matters. Word-of-mouth referrals are usually the most accurate forum to decipher through a suppliers' marketing message while identifying the strengths and weaknesses of the machine. Be prepared to ask key questions such as

the feasibility testing the machine has endured prior to product launch. A low priced, low quality machine may look great on paper, but the potential problems, such as crimp repeatability, for an aging machine may affect its long-term ROI.

In all, there are many more factors a potential customer and cur-

rent wire harness manufacturer should evaluate when evaluating their automatic crimping processes. Other factors include: wire type and quality, applicator, and the weather environment. Remember, an automatic crimping machine is a long-term investment and every business should not only look at its current production needs but also think about future capabilities.


Classified Ads

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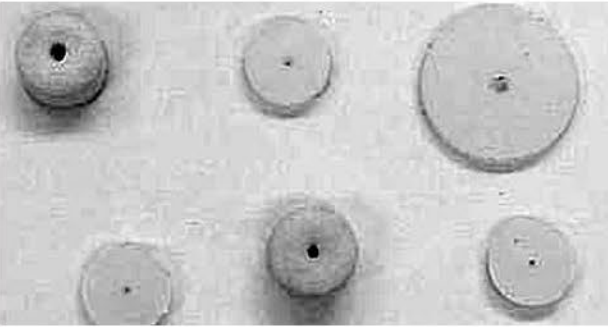
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How Reshoring Drives Profitability

(Editor's Note: This paper was originally published in the IPC APEX EXPO 2015 technical conference program. Republished with permission.)

By Michael Ford
Mentor Graphics Corporation

For many years, manufacturing has sought to increase competitiveness by moving off-shore to countries with lower labour costs. Electronic manufacturing services (EMS) companies provided an essential element to make off-shore transfer happen more quickly, offering further cost reduction opportunities from load balancing. Fierce arguments were put forward to protect

the loss of local jobs, although the result was, in almost all cases, inevitable. Today, however, the whole market of PCBbased electronics products has changed significantly. The "pros" of off-shoring are no longer what they once were, and the "cons" are becoming more significant because off-shore manufacturing can no longer satisfy the needs of the market.

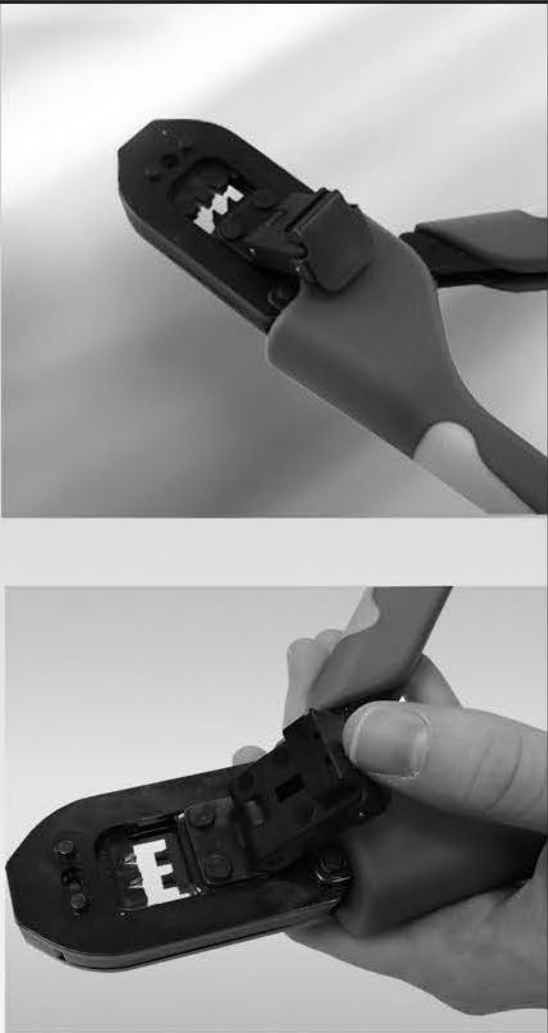
Is reshoring really commercially viable, or are government incentives trying to push water uphill? Market demand patterns continue to change and evolve. As technology-based products become fashionable, the demand from customers becomes more volatile, and they are more heavily influenced by

endorsements and trends. Getting the latest products into the market ahead of competitors, with a range of options to match people's individual tastes, is essential. The trend of direct shipping of products, driven by Internet shopping and direct B2B ordering, brings these variations in demand directly to the factory door. The key for success in today's market is being able to provide flexibility and agility without losing productivity.

Off-shore manufacturing has inescapable issues of delivery time and cost, as well as price depreciation and long response times while carrying some significant risks. Whereas, in theory, reshoring allows rapid time to market, the

opportunity to meet customer needs, and eliminating many hidden costs of doing business.

In this paper, we expose the real costs of off-shore manufacturing, and put labour cost differentials into perspective. We demonstrate how practically, using existing technologies, reshored manufacturing can yield better business return, either for an OEM, or through EMS providers.



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How Reshoring Drives Profitability

Profitability is a key element and metric in the performance of any business. The suggestion that on-shore manufacturing is something that we should be considering has CFOs immediately requesting the proof in the form of a business plan. With the wide range of cases and conditions, sectors, and tiers involved in the electronics manufacturing industry, it is difficult to assess all cases in detail. Conceptually, however, let's consider the profitability of a new EMS company for starting up onshore manufacturing at a reasonable volume for a range of consumer products, which could include handsets, computer devices, some industrial, as well as medical or automotive, focusing on the points that differentiate an on-shore operation from what is now regarded as the expected off-shore manufacturing operation.

Almost as a result of conditioning, the CFO's first thought is operational cost. It may seem obvious that operational costs off-shore in countries like China, Vietnam, Brazil, or



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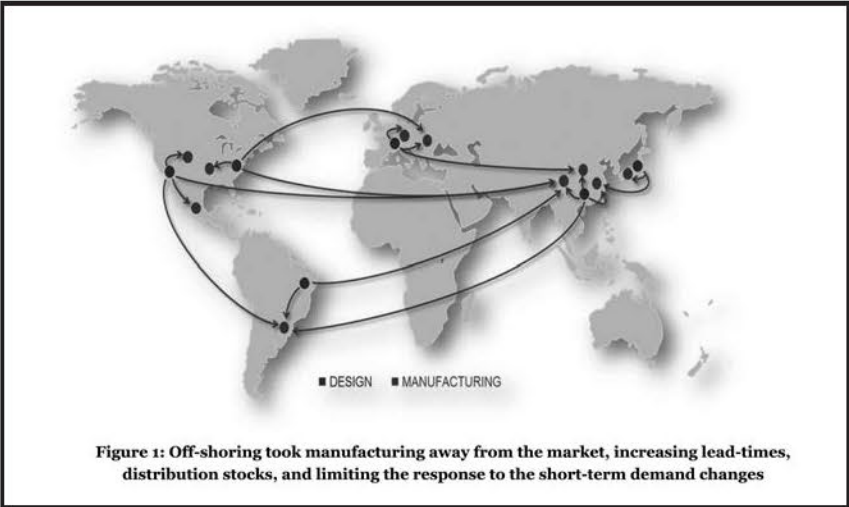


Figure 1: Off-shoring took manufacturing away from the market, increasing lead-times, distribution stocks, and limiting the response to the short-term demand changes

India are far lower than countries representing the major market opportunities, such as the United States, the United Kingdom, or western Europe, such that on-shore manufacturing could never be competitive for mainstream electronic products. This was after all the original premise behind manufacturing moving off-shore. At the time, many arguments were made about the pros and cons of doing so, some of which, with hindsight, seem rather short-sighted. The market has changed significantly over the years, which requires us to revisit those arguments. Let's start with the most significant change, which in recent years has become far more significant—the distribution chain.

For the Love of Distribution

When the flood of off-shoring took place, the Internet was in its infancy, and the traditional distribution chain was firmly in place. It may seem a simple action to take products from a factory where they have been produced to the store for the end customer to buy, but actually, this is one of the key governance processes for the business and the industry. After leaving the factory, the distribution chain starts with a series of journeys between warehouses and hubs that the products must go through. It is like an hourglass, many types of products coming in, combining with other products from other manufacturers, even from different industries, shipped together on a cargo ship for example from China to the United States. Then the distribution fans out again as the logistics local to the market take over, shipping into more hubs and warehouses, until the product finally arrives at the stock room of the local shop. This then is multiplied by the number of regions that each receive their own shipping

and logistics services. All of these stages in the distribution chain contribute cost and take their profit, as of course does the final shop in the chain, which is usually then also obligated to take a further portion of the selling prices as tax.

As complex as the distribution process is, it has historically provided

ed fundamental value to the business that it serves, which continues today, for example:

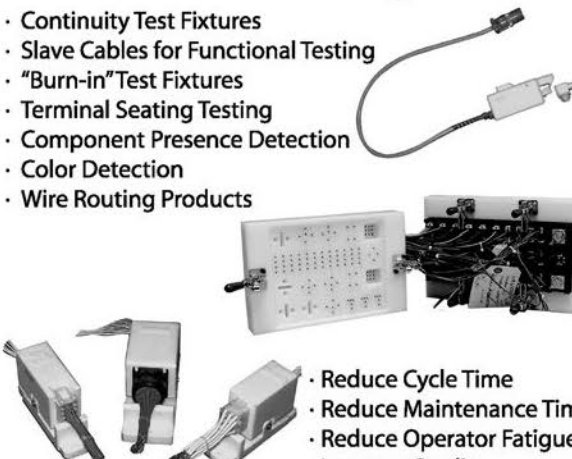
1) *The Sales Team:* Having enough stock available to sell with a reliable replenishment flow satisfies a key need of the sales team. A customer going into a store to buy a product, and finding it to be sold out, will likely be driven by the shop's salesman to buy an alternative product. Retail never wants to turn customers away. The distribution chain must be able to replenish stock at the point of sale to prevent this erosion of sales opportunity of the product that the customer wanted. The sales team knows that customer demand will fluctuate significantly. Should a competitor release a product into

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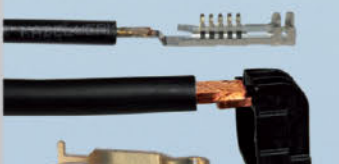
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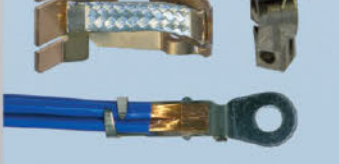
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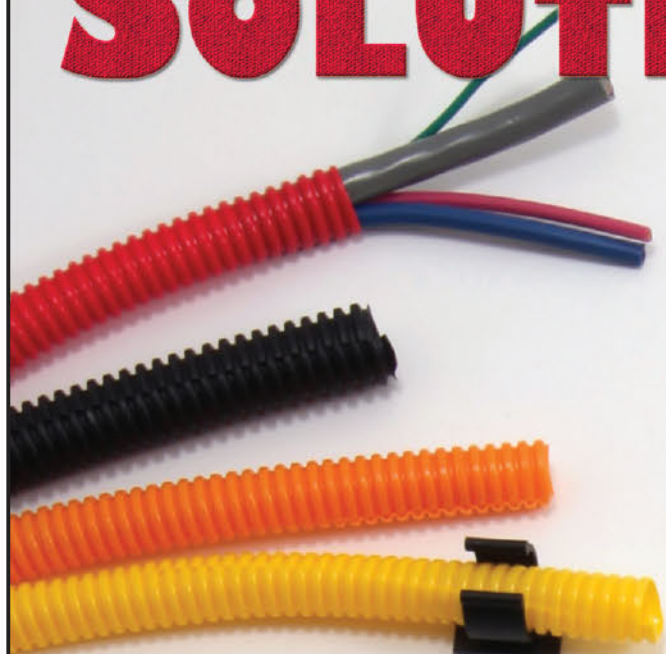
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Reshoring

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the market with slightly better specification, or with a slightly lower price, demand can dip suddenly until tools such as advertising, promotions, and price adjustment are used, to restore sales volume back to targeted levels. A significant amount of stock in close proximity to all stores ensures that this will happen. Without the distribution chain, the sales team would have a far higher risk of short-term shortages that would lead to loss of sales opportunity.

2) *The Factory:* Stable, high-volume mass production has always meant that factories have the minimal disruption in their day-to-day operations and so can achieve excellent levels of productivity. The number of products made in each factory, however, usually exceeds the number of production lines available. At some point, changes in the production flow need to be made. The larger the buffer of finished goods stock is, the less often the factory needs to make changes. Without the distribution chain, factories would need to change products much more often to avoid exhausting stocks as they are taken by customers, thereby reducing productivity.

3) *Business Planning:* The enterprise resource planning (ERP) tools use the distribution chain as a key part of the whole product planning cycle. Typically, the sales and marketing teams predict and forecast the likely demand for each product going forward. ERP logic then assesses how much of this demand can be satisfied with the currently produced stock in the distribution chain, plus the committed production at the factory where raw materials have

already been ordered. The remaining demand is then converted into future production work-orders for the factory and then on to the orders of additional raw materials. Some of these materials require a significant lead-time. If say this lead-time is three months, then it means that the adjustment of the overall flow rate of production can only be adjusted on a three-month basis. The current production and distribution chain stock will be needed to buffer the flow of products against demand fluctuation in the interim period. Without the distribution chain, ERP would not be able to re-plan the factory effectively

in time to meet changing demand. With these main voices controlling the business operation, moving production off-shore was not an issue. The increase made to the distribution chain was only around three to eight weeks for global shipping, which could even be spun as being a benefit to sales, ensuring long-term stability for sales, for the factory, and to give the business planners more time. Arguments against the extension of the distribution chain were made, but they never gained the strength needed to overturn the off-shoring decision in most cases.

Strengthening Opposition

Our new on-shore manufacturing operation today is located close to the market and has the opportunity of working without a significant distribution

chain. Before we look into how that could work, let's look at the other side of the distribution chain argument, at the perhaps less tangible, but also more significant, costs as they have evolved over the years into the situation we have today.

1) *End of Life:* All products eventually come to an end of life, hopefully one that is predicted, but it can all end suddenly. For instance, a competitive product launches in the market against which the current product cannot compete. A "refresh" model is in the pipeline. The volume of goods in the distribution chain can suddenly for the sales team become a huge liability, when sudden depreciation occurs. These products must be sold or scrapped. Selling them is of course preferable, but to do so, the price must be reduced to increasingly lower levels, often to the point at which they are sold at a loss. What profit was

once made earlier in the product's life is now being lost. To limit this risk, business planners need to make sure that there is a minimum of stock in the distribution chain, that ideally the chain should be as short as possible in terms of the number of products. This is working counter to the sales team's product flow strategy. Seeing the increasing trend of competitiveness with technology based products, product lifecycles have shortened dramatically. The end-of-life scenario becomes increasingly common and increasingly significant.

2) *Time to Market:* Every end of life has a start of life. The majority of all profits made on a product occur in the earliest stages of introduction to the market. The introduction of many competitive products with the latest technology has become a key business strategy for mar-

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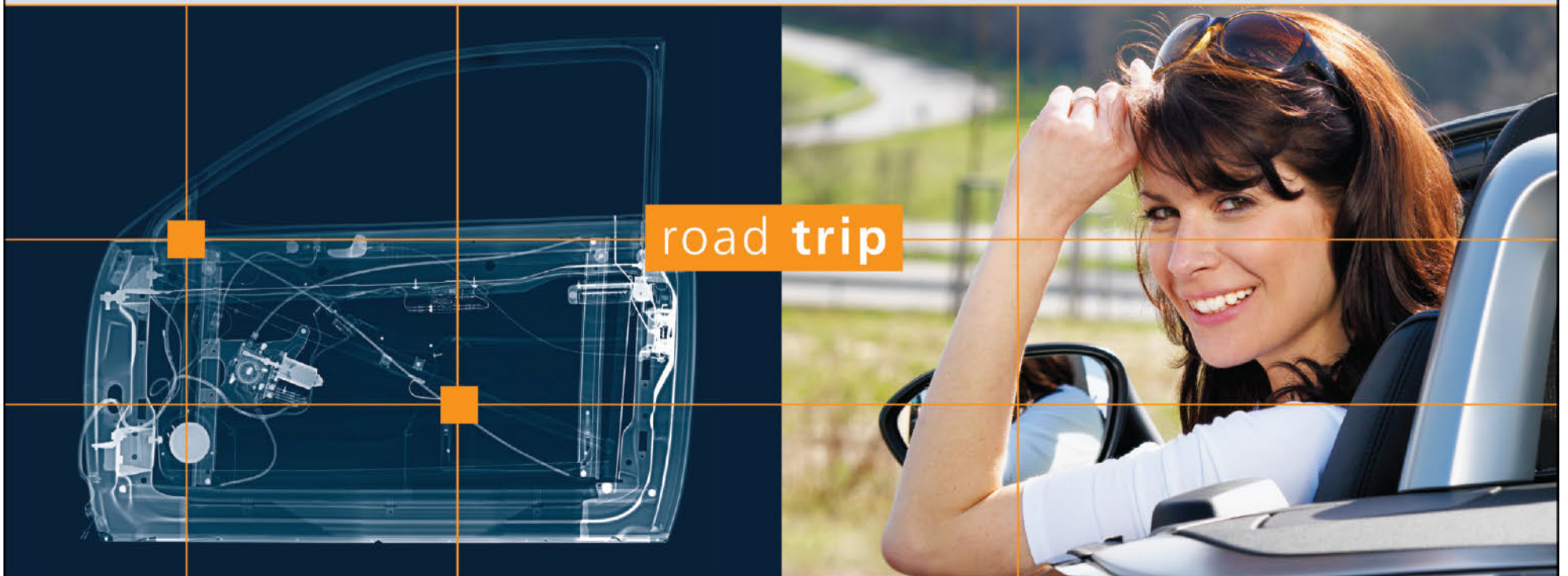


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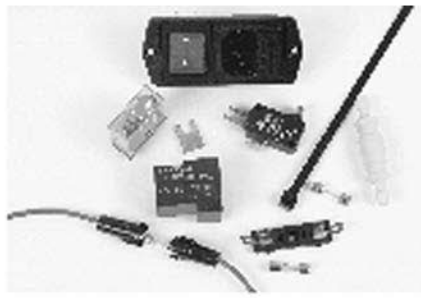


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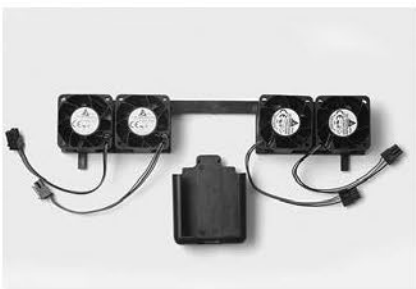
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Reshoring

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ket leaders. If a key product launch is delayed, the period of exclusivity and dominance in the market decreases, directly reducing profits earned against premium sales pricing. An example was the launch of the iPhone 6, which broke records for pre-orders on the first day, before anyone had even seen the phone itself, double the number previously for the iPhone 5, all sold at premium prices. How long before rivals launch their iPhone 6 "killer? iPhone 7 to be sure is not a long way off.

Design systems for electronic products have come a long way in recent years to ensure that modular design elements can be tweaked and re-used, such that each new technology can be integrated far more rapidly into a new product. The marketleading PCB layout tools today offer the opportunity for layout designers to work concurrently, reducing lead-time significantly. Material selection and manufacturing constraints are accounted for during the layout process, with the completed PCB design ready for fabrication and then on to assembly with a hugely reduced risk of re-spins and delays. The focus in the new product introduction (NPI) process now shifts to the factory and the distribution chain. How quickly can the factory change to support the ramp to volume for the new product? How long will it take and how much will it cost to fill the entire global distribution chain with

products before sales can start?

3) *Fashion:* This short-cycle continuous product reinvention trend makes the market for electronics exhibit similar sales patterns associated with the fashion industry. However, people look to purchase the best product that they can afford and do not want to pay for something they don't need. Knowing this is a key factor for success for product managers, seeing market demands for many revisions and version of each product, such that consumers can get the best value for money they are seeking. Factoring in global geographical variants, the result has been that the number of products and variants that the factory needs to produce has increased between ten and a hundred-fold since offshoring started. Even if the number of products increase were only tenfold, to retain the same low level of change in the factory, the stock in the distribution chain would have to be 10 times higher because the manufacture of each product would come around 10 times less often. There are also, however, 10 times the number of individual products to stock, so in theory the stock in the distribution chain needs to be 100 times larger. Of course, it will be less than that because the sales expectation of each variant will be lower, but which models will prove the most popular? It is more difficult to predict trends across

Continued on page 36

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Reshoring

Continued from page 34

variants of products. In the case of at least one key mobile handset manufacturer, a factory in China was purposefully located near to an airport. The finished goods come off the production line and are almost immediately air-shipped to the end customers. The cost of air freight was more than justified by the avoidance of depreciation issues and other costs associated with the traditional distribution chain. This is no longer a one-off example.

4) *The Internet:* The major blow to the distribution chain has been Internet

shopping. Rather than going to a store for a product, we now search on-line for the best price among shopping sites that have the product in stock. Orders are placed electronically, and the customer expects timely delivery. Now, of course, traditional local retailers are a part of Internet shopping, they simply ship from their local store or warehouse. More modern retailers, however, have realised that they can undercut the high street stores, by shipping directly from the manufacturer to the customer, bypassing a major part of the distribu-

tion chain, enabling lower prices while retaining profit. This business model has now spread back to the point of origin of manufacturing. Common consumer items, such as the latest designs of LED light bulbs, are now available through Internet shopping sites such as Amazon, eBay, or Alibaba, sourced directly from China at a fraction of the cost of those coming to the United Kingdom through the regular distribution chain. Entrepreneurs are creating small companies, each with some arrangement for sourcing local new and exciting technology. Even with the addition of the cost of international direct shipping by air for individual items, the price does not

come close to that otherwise asked for a similar product that went through the traditional distribution chain. Shipping by land or sea makes direct purchase even cheaper if the customer is prepared to wait. Not only is this practice undercutting traditional retailers, but the factory is now operating in a situation where, a small part, at least for the moment, of their output is being sent to customers directly without any significant distribution chain.

An interesting question at this point is whether the same thing could be done if manufacturing were on-shore. Could the benefit of virtually zero distribution chain cost be realized, and if so, how would this saving compare to the projected increase in the cost of manufacturing on-shore?

The Actual Cost of Manufacturing

As time has passed over the 20 years or so that off-shore manufacturing has been going on, there is an unpopular but strengthening opinion that manufacturing and assembly cost itself is overrated in context with the final cost of the product the customer pays. Consider the contributors to the price of a product that you might find on the shelf at your local electronics store. There is the cost of the raw materials, the cost of the manufacturing process, the distribution cost, plus, it is expected, some profit and sales tax, as well as an allocation of fixed costs from the company operation overhead including the cost of the design of the product itself. Looking into the cost of the actual manufacturing process, this, in many cases, represents only around 10% of the finished goods price, though of course there are significant variations between products. The proof of this lies with the rates that EMS companies charge for manufacturing. It is then only a portion of this cost that is contributed by the differential labour cost, with costs of machines and automation remaining fairly consistent. The contribution of the fixed operational cost of labour in manufacturing probably in most cases represents about 6% of the end price of the product. This is actually far smaller, again in most cases, as compared with the portion of cost associated with the distribution chain.

(Look for Part 2 in the July/August 2015 issue of Wiring Harness News)



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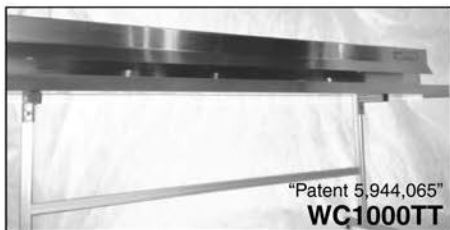
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The system is available in two versions. One version can feed fairly flexible cables up to 18 mm (0.71") in diameter. Another version can feed less flexible cables up to 35 mm (1.38") in diameter.

This rugged, powerful and reliable machine is guaranteed to improve the flexibility and quality of your whole production line!

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

The Schleuniger Group in Thun is a globally active technology company and a leading supplier in the Wire Processing industry. Customers of the Schleuniger Group primarily supply the automotive,

entertainment, and information industries as well as the communication sector.

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



The Schleuniger Group represents the independent Business Unit Wire Processing of the listed Metall Zug Group and has about 500 full-time employees and 30 trainees worldwide.

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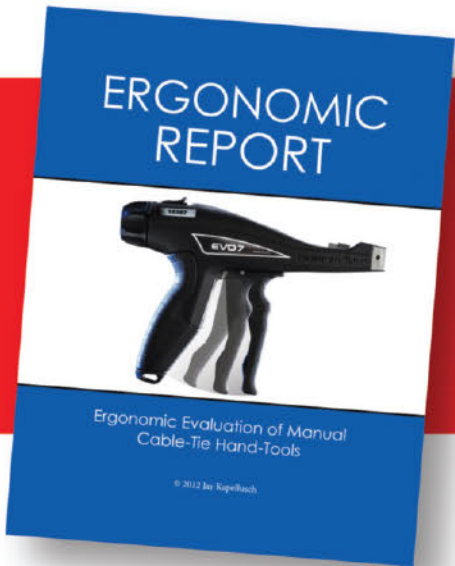


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WireMasters Acquires Wyre Tek

WireMasters, Inc. is pleased to announce the acquisition of Wyre Tek, LLC. The addition of the Rhode Island manufacturer to the WireMasters Family forms a strong team that will provide advanced products and value added services throughout the aerospace and defense industries.

Closing of the transaction took place March 20, 2015 and is a significant advancement for Team WireMasters. WireMasters currently holds Qualified Producer List (QPL) status for unshielded and unjacketed (U00) cables within the military cable specification M27500. By acquiring Wyre Tek and their exten-

sive QPL positions, WireMasters can now manufacture more cables within M27500. Via Wyre Tek, WireMasters can produce cables with tape wrapped jackets and braided shields, as well as non-QPL certified cables with similar jackets and shielding, such as the M55021 specification. In addition to these manufacturing capabilities, WireMasters will establish an inventory presence at the Wyre Tek facility to better serve our customers located in the North East region.

David C. Hill, WireMasters President and CEO, said: "We are excited about the acquisition of Wyre Tek and what these new manufacturing

capabilities mean for the WireMasters brand. As a company, we are always looking for ways to diversify and expand our products and services and this transaction seemed like the perfect opportunity. Wyre Tek will strengthen and broaden our offerings and enhance our ability to deliver the finest products and extensive services throughout our industry. With our focus and dedication remaining on our customers, you can expect nothing but great things from the WireMasters family of companies."

Wyre Tek was founded by the late Kerry Patterson and served as a highly respected cable manufacturer for over twenty years. It is with great honor that WireMasters will carry forward the legacy of Mr. Patterson through the Wyre Tek brand. WireMasters will retain all current Wyre Tek employees, including Lisa Patterson, Kerry's daughter. We gladly welcome them to the WireMasters Family.

Integration of the two companies began immediately following today's closing transaction. All calls to Wyre Tek will be routed to WireMasters headquarters in Columbia, TN. You can also call our toll free number at 1.800.635.5342 for any additional questions regarding this transition or quoting opportunities. Wyre Tek production activities will resume on Monday, April 6th. The WireMasters team is excited about this transition and looks forward to better serving all of our customers.

Founded in 1988, WireMasters Inc. is a leading international distributor of high performance and high temperature military specification wire, cable and associated accessories. The company warehouses millions of feet of wire and cable inventory with locations in Arizona, Texas and its headquarters in Columbia, Tenn.

For further information visit www.wiremasters.net



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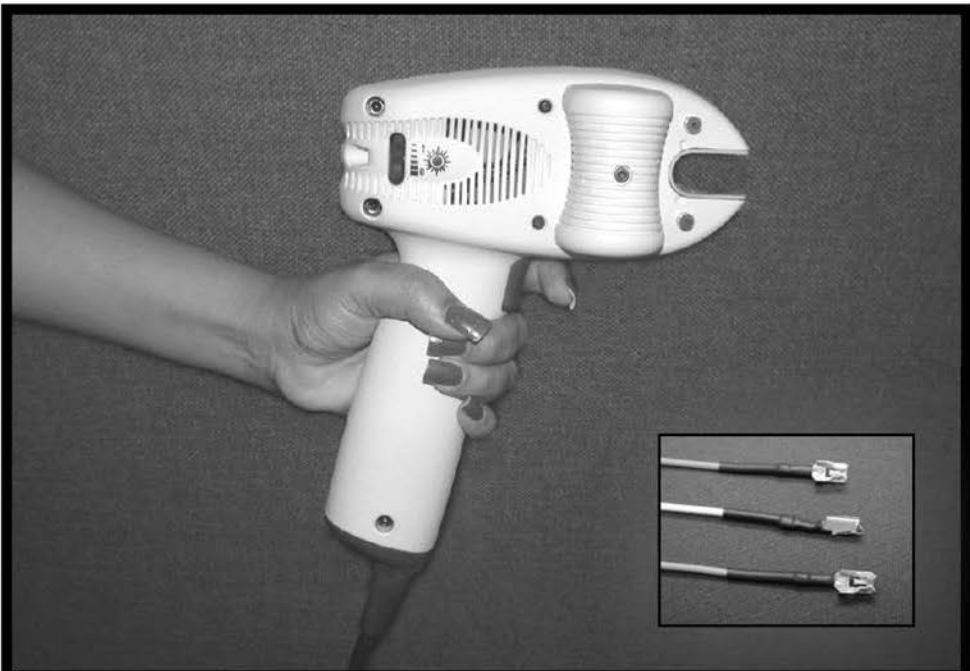
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Closing the Gap – Minding What Matters Most

By Paul Hogendoorn

We live in a precarious time. As some get richer, many others drift towards unsustainability, and our middle class is shrinking. When people slide into unsustainability, it often becomes the responsibility of government to meet their needs. Many people in the middle class don't even realize it, but they too have slid into positions of unsustainability, where they can't accomplish the critical things on their list without some form of government aid; things like subsidies for their children's tuition, relief from debt, extra allowances or benefits just to make ends meet every month.

This is not a political issue, a left-wing or right-wing debate. This is first and foremost a people issue, a manufacturing issue, and a company issue. Many plants I visit pay their workers barely more than what they would make flipping hamburgers, or greeting shoppers at a big box store, and that is where this problem begins. People in our manufacturing companies add value – real value – with their daily activities. There's a big difference between 'serving' and 'adding value'; both are good and honorable employment activities, but the 'adding value' jobs have a far bigger effect in creating wealth in our economies than the 'serving' jobs do. This needs to be appre-



Paul Hogendoorn

ciated more in our society, and reflected more in what we pay our 'value adding' workers.

At this point in the column, some readers are getting angry, some are getting excited, and some have already stopped reading. Let me continue for just a bit further. We live in a competitive manufacturing world, where we lose business and jobs to far off, low cost labour regions. We can't afford to simply raise our rate of pay. But that's not a good enough reason to justify near minimum wage pay. There are other options.

One option that I've been advocating a lot lately is to change the management-worker paradigm. Going back to the

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beginning of the industrial revolution, at least as far back as the beginning of mass produced automobiles, we made it management's job to measure and the workers' job to do. Previous to the creation of this type of employment, a person could easily measure the fruits of their days' efforts; how many acres he or she planted, cows they milked, miles of fences that were mended, or cords of wood that were chopped. Along with that measurement came the satisfaction of accomplishment, and a large degree of pride as well. Work was much more than simply a means to make a living, it provided meaning too.

We've disconnected meaning with many of our factory jobs. The primary measurement of work that workers have now is how many hours they are in the building and on the job, not the job itself. There's nothing wrong with paying people for the hours they work, (it's still the best way in most cases), but the measurement we feed back to them should be directly tied to the actual work they've done, independently of how many hours they are in the building and being paid for. Most of us believe the common expression "what gets measured, gets done", but the problem is that we hold on to the belief that its management's job to do the measuring and the workers' job to do the doing.

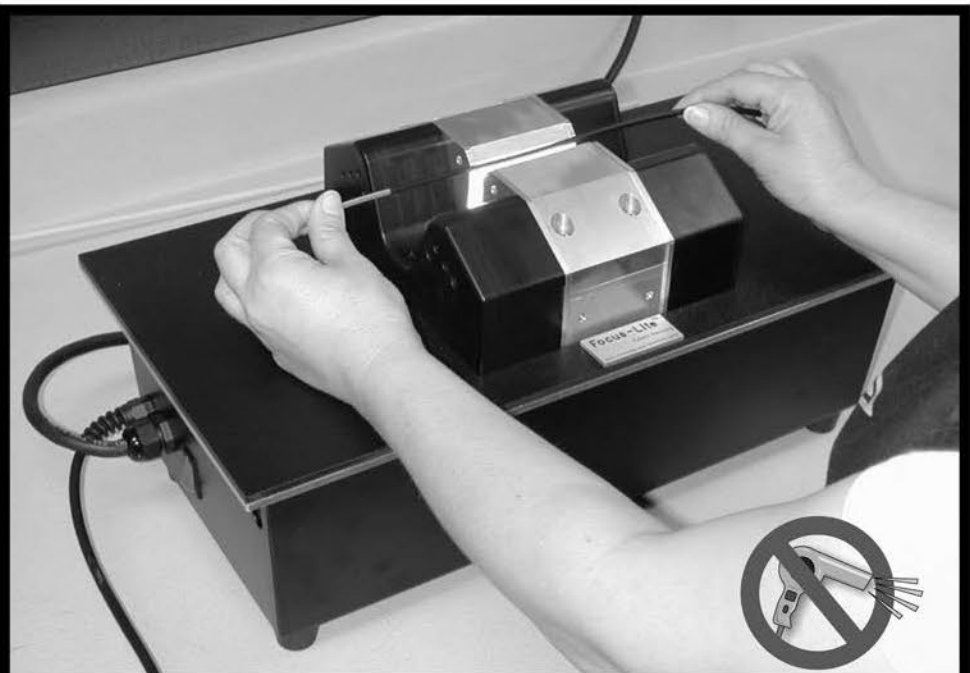
To change this requires a different way of thinking, and it has to start at the very top and be driven down. Management feels entrusted with the corporation's mandate and vision, and this is a role they hold on to dearly, because that responsibility gives them meaning. But, meaning and responsibility can be,

and should be, shared. In the current model, information collected off the plant floor flows up, while only you-know-what flows down. If the people on the floor were more connected to their value adding roles and functions - i.e. the only activities that actually make the company any money - they would be more engaged employees; more satisfied and productive contributors. More productive means more profit, and more profit allows their value to be properly rewarded.

We can continue trying to compete with countries that consider human labor a commodity, or we can once again try to change the game. Our strength and differentiating advantage can be our people, if we choose to try to create a new paradigm, where everyone brings their "A game" every day, by sharing responsibility and meaning more equally.

Manufacturing in North America created the middle class, and the middle class is what made our countries what they still are today. I don't believe that the solution to what ails our countries is in the hands of governments, or political parties, or schools, or organized labor. I think it begins with 'us', the manufacturing companies and workers that made our countries great. It's time to get on a new page. With the information technology readily available today, there's no reason that only some should measure, while others only do.

Paul Hogendoorn is co-founder of FreePoint Technologies. "Measure. Analyze. Share." (Don't forget to share!) He can be reached at paulh@getfree point.com.



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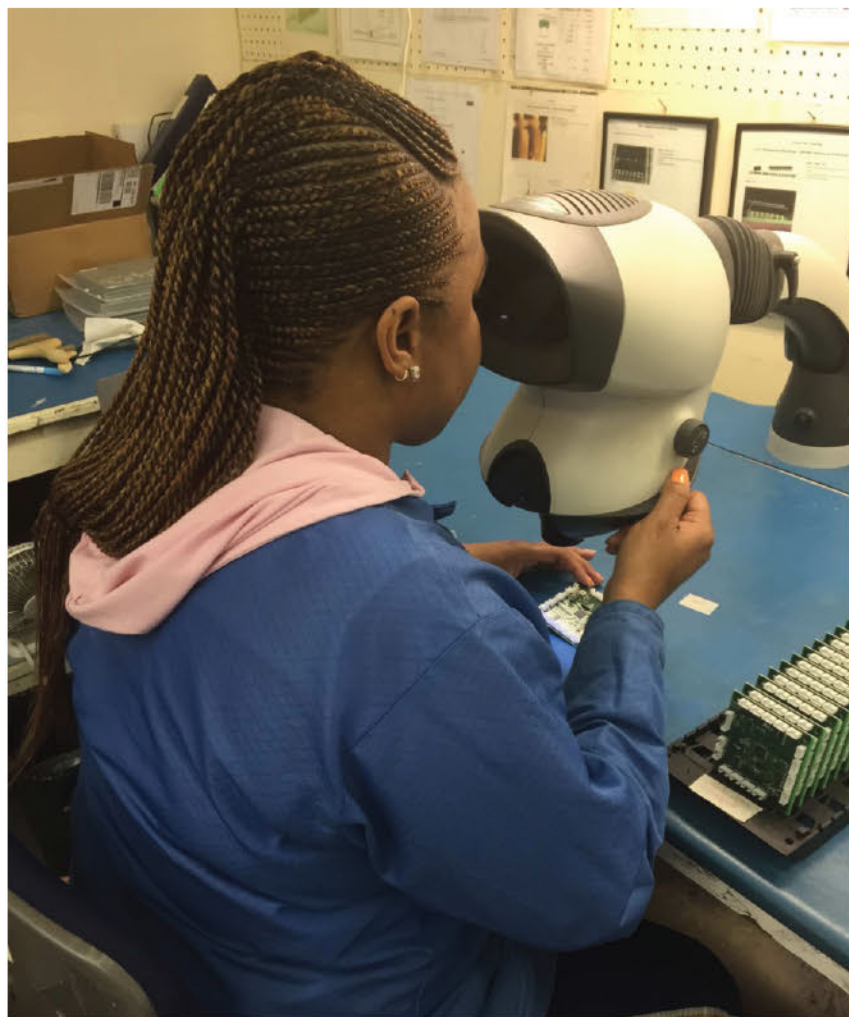
quick turnarounds, being hands on and having almost zero failures are our strengths. We will be competitive on cost.

"We have gained customers and kept customers by our quick turnaround times and lead times," Friedman said, adding that often partial orders are filled ahead of due dates at customer request. "We're very sensitive to our customers. We do everything in our power to get the job out, but we don't compromise quality."

Customer relationships at any company could be diminished by weak product quality. Therefore, Friedman emphasized that quality is the No. 1 concern at RE. Two final inspections are done, including continuity testing of harnesses, and a final audit completes the quality-assurance process.

Often military specs are followed, and Friedman expects RE to gain ISO 9001:2000 later this year. Much of the high quality is due to harness builders having worked at RE over 30 years, he stated.

Twenty people are on the RE staff - 12 in production and eight in management. Key people are Eddie Josephs, sales manager; Tony DiDomenico, operations manager; Anita Kissoon, PCB department supervisor; and Tekaram Sahadeo,



MANTIS Optical Inspection Station.

harness and cable assembly department supervisor.

Work is done on one shift. All the production staffers are cross-trained to do PCBs, harnesses and cables.

Many of the employees have been with RE since it was founded

in 1984 in Mount Vernon, a community of 68,000 residents in Westchester County next to the New York City borough of The Bronx. Friedman often has coffee with employees, whom he calls "a big family" because "they are nice people who

Continued on page 46

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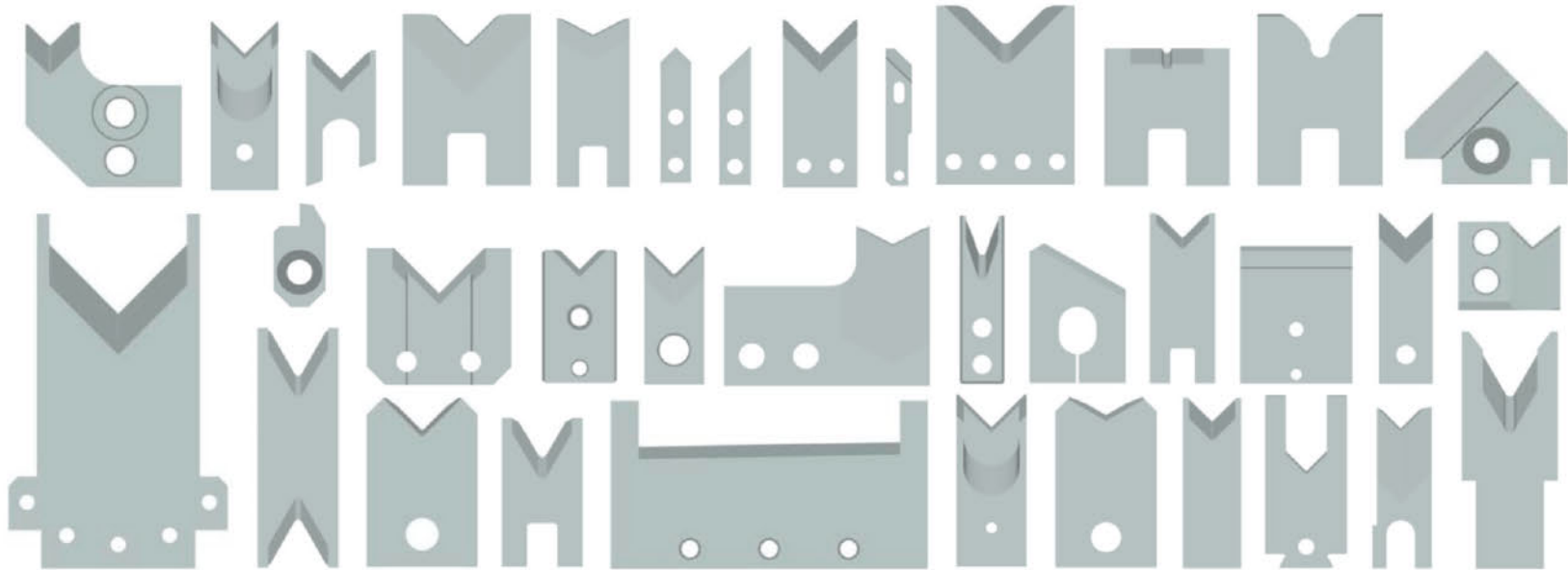
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Mechtrix has designed a number of unique machines to solve specific wire processing problems. These machines range in complexity from our patented center stripping machines to terminal paper winding machines. These machines include:

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Reliable Electronics

work hard and do the job. I have never fired anybody, and nobody has left unless a family move required it."

Production meetings led by Josephs and DiDomenico are held on a weekly basis. "Everybody is kept involved, and they know our customers," Friedman said. "They make suggestions for equipment, and if it is something new that is going to help us, I will get it. We are looking at various machines now, especially for surface mount PCBs as they become more popular."

Josephs and DiDomenico operate the day-to-day business of RE, while Friedman provides oversight and concentrates on the finances. He has known Josephs since the 1960s, and DiDomenico has been at RE shortly after its start 31 years ago.

"They have been with me so long, and I have absolute faith in them," Friedman said. "I am so comfortable with them."

Friedman seeks to add 4-5 new customers this year. To that end, RE is being more proactive with its marketing. One aspect includes a new listing on ThomasNet.com. Other aspects include trade show participation and direct mail with



Semi-Automatic SMT Pick and Place Station.

testimonial letters.

In managing the sales effort, Josephs oversees three outside sales reps who cover the Northeast U.S. and are paid commission on the accounts they develop. They are not franchised according to territories, and Friedman has no contracts with the reps. "My word is my bond," he said, noting he would like to add more salespeople.

Because the RE trade area includes New York City, overseas companies with offices there have products made by RE. Friedman

related that his firm has done work for an Italian company and an Israeli company, whose project required reworking 2,000 items made overseas.

Another long-time customer in Connecticut was purchased by a global manufacturer and moved to Florida. However, RE continues to supply products to the Florida location, an indication to Friedman of the attractiveness of RE products and pricing.

In turn, the appeal of such a relationship can be attributed partly to



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how RE staff relate with suppliers, most of which are franchised distributors, according to Friedman. "We look at them for the same things we provide to our customers - price, quality and delivery," he said. "I'm pleased with our vendors, and our relationships have not changed much over the years."

Friedman expects relationships with vendors and customers to grow this year and into the future. Growth will be based on furthering his mom-and-pop business concept.

"I have not saturated my mom-and-pop theory yet, so I'm going to continue with that approach," Friedman said. "I'm going back to the good old days where there was rapport with people. That's where the value is."

"The best thing is the way people respond the way they do," Friedman said. "We're not just another vendor to them. We're part of their company, and that's very fulfilling. I'm most proud of my people at Reliable and the things customers say about them."

RE also has been recognized by the U.S. Local Business Association with its Best of Mount Vernon Business Award. RE earned the honor in 2014 - and the six previous years - for outstanding quality and excellent customer service.

RE was founded in Mount Vernon in 1984 by Bob Ryuck and John Punziano. A year later they moved RE into a building Friedman owned.

The 15,000-square-foot brick building, which was constructed in the early 1900s, was bought by Friedman's father Adolph in 1952 to house his electronics manufacturers rep firm called Adolph Friedman Co. It later became Friedman Smith Electronic Sales with the addition of partner Bob Smith.

Jay Friedman joined the company in 1960, a year after graduating from Ohio State University. He sold electronic parts in a territory of Long Island, northern New Jersey, Connecticut and Westchester County. In the 1970s the company changed from repping manufacturers to distributing parts, which were shipped all over the United States.

Currently on the second floor of Friedman's building is his other company, ASAP Electronics, which he founded in 1977. The firm, with a staff of seven, some shared with RE, is a franchised stocking distributor for major electronic parts manufacturers and specializes in RF and microwave components.

In 2001 Ryuck and Punziano were going to close RE but first offered it to Friedman, who has sole ownership of RE. "I was not seeking another company, but I saw it as a way to increase my business," he said. "Every-

thing was going offshore because of the high cost of manufacturing, but I had been successful with ASAP competing against the big distributors, so maybe it would work for Reliable."

Since its founding RE only did consignment work, but within six months of acquisition Friedman added turnkey with bills of material to customers' options. He stated the building, which is distinctive with wooden paneling, high ceilings and marble floors, has adequate space to accommodate more production as sales increase.

For more information, call 914-668-4440, e-mail sales@reliableelectronics.net, visit www.reliableelectronics.net, fax 914-668-4972 or write 519 S. 5th Ave., Mount Vernon, NY 10550.



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NEW Flat Cable Configurator

Cicoil, a leading manufacturer of Flexible Flat Cables, is pleased to announce its NEW EZ-Flexx™ Flat Cable Configurator. An entire section of the website is dedicated to this Free Web-Based Tool, which allows a user to easily design a custom flat cable in just minutes. And the new EZ-Flexx™ cable design makes Cicoil flat cables easy to separate and strip, just like any round cable, and also makes the flat cable more light and flexible.

With a few simple

mouse clicks or touch of a screen, Flat Cables can be constructed of many elements, including power conductors, shielded signal pairs, video & coax wires and tubing for liquid and air. To make the process even quicker, Cicoil has added Specialty Modules (Camera Link®, Cat 6A, FireWire, USB 3.0) to the Configurator. Any of these elements can be combined in any position within the flat cable profile, which means that over 1 million flat cable designs are available for immediate production and quick delivery. If you

don't see a component that you require, no need to worry, a Cicoil Application Engineer can be contacted to help in adding other elements to your cable design.

In addition, users can move around, add and remove any elements in their flat cable, in any variation up to 3.75 inches wide. Cicoil's Online Configurator makes anyone a Flat Cable Designer.

Once the flat cable is designed, users receive a price quotation, custom part number and an engineering drawing delivered to their e-mail inbox within seconds. Once the cable is ordered, Cicoil guarantees a 1-2 week delivery on any cable designed using the Cable Configurator.

Cicoil's Cable Configurator can be viewed, tested and played with at www.cicoil.com/flex_cables/configurator.asp.

In addition to Configurator designs, Cicoil offers Standard Off-the-Shelf Motion Control, Video, Data, Power, Thermocouple and IDC Ribbon Cables and Assemblies. All cables are encapsulated with Cicoil's exclusive, crystal-clear Flexx-Sil™ jacketing compound, which clearly shows the purity and cleanliness of the material, as well as the precise placement of each individual cable component.

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

Cicoil has been a leader in designing and manufacturing high performance cable assemblies for almost sixty years. The company's Patented Flexx-Sil™ Flat Cable Technology provides high flexibility, extremely long life, and they can withstand temperature extremes from -65 degrees to +260 degrees Celsius.

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FP-301 tubing is typically used as a shrink-fit electrical insulation over cable splices and terminations. It is also used for lightweight wire harness covering, wire marking, wire bundling, component packaging and fire-resistant covering.

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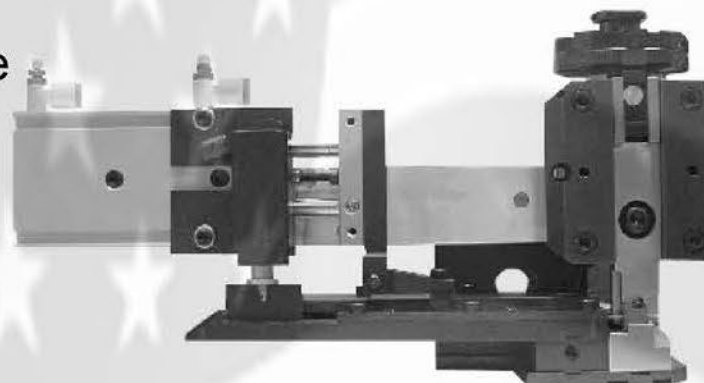


Model 1700

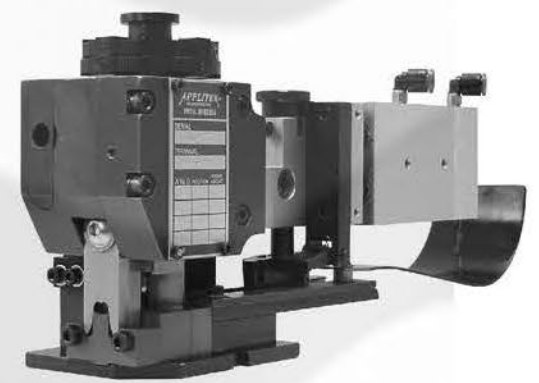


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Pneumatic feed mini-style applicators can accommodate terminals with center to center distances up to 2 inches.

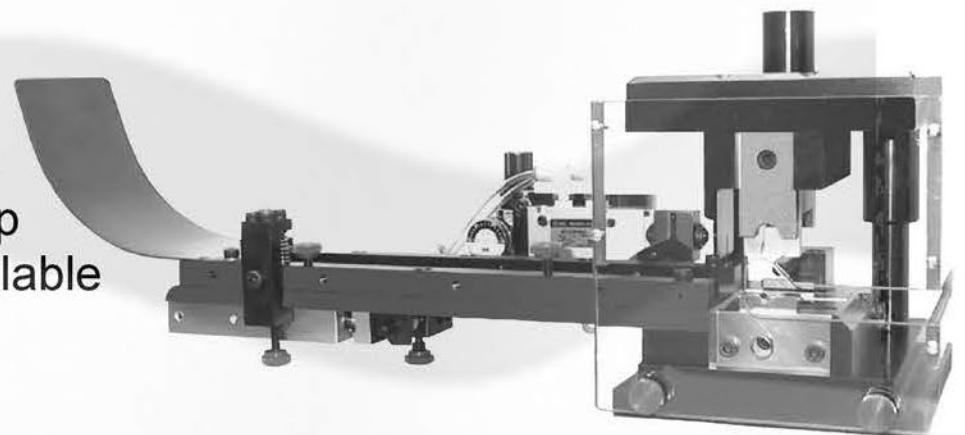


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In every issue of Wiring Harness News Anixter will bring you informative articles about wire and cable technology.

Hazardous locations are usually found in industrial facilities where explosive liquids, gases or dusts are present. The various types of hazardous locations are defined in Article 500 of the National Electrical

Code (NEC). Each type of hazardous location requires specific types of cable and/or installation methods. Approved wiring methods range from a rigid, highly impenetrable type of cable, such as Type MI (mineral insulated

cable), to a raceway system such as metallic conduit.

HAZARDOUS LOCATION CLASSIFICATIONS

Hazardous locations are broken into different categories called Classes and Divisions per the 2014 NEC Article 500 Hazardous (Classified) Locations, Classes I, II, and III, Divisions 1 and 2. The process of classifying an area is often complex, so it is generally determined by the facility's engineering staff. "Class I, Division 1" is the most hazardous classification, but "Class I, Division 2" is the type most often of concern to cable users. The various classifications are

summarized in the table below. Class I and II materials are further subdivided by the NEC into "Groups" (A, B, C, etc.) as shown. However, the type of Group has no effect on the type of cable required.

HAZARDOUS LOCATION CABLES

After the Hazardous Location Class and Division is determined, the next step is to decide what type(s) of cable to use and how they will be installed. The NEC has different articles for the approved wiring methods of different Hazardous Location Classes.

The NEC is very precise in its language in this area since even one misun-



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TABLE 1: HAZARDOUS LOCATION CLASSIFICATIONS

Class	Group (NEC 500.6)	Division (NEC 500.5)	
		1	2
I Gases, Vapors and Liquids	A: Acetylene B: Hydrogen, etc. C: Ether, etc. D: Hydrocarbons, fuels, solvents, etc.	Explosive or ignitable gases or vapors are present under normal operating conditions	Explosive or ignitable gases or vapors are not normally present (but may accidentally exist)
II Dusts	E: Metal dusts F: Carbon dusts G: Flour, grain, wood or chemical dusts	Combustible dust is in the air under normal operating conditions	Dust is not normally in the air in ignitable concentrations (but may accidentally exist)
III Fibers and Flyings	Textiles, wood chips, etc. (ignitable but not explosive)	Easily ignitable fibers or flyings are handled, manufactured or used	Easily ignitable fibers are stored or handled



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TABLE 2: WIRING METHODS FOR HAZARDOUS LOCATIONS

Class	Division	Methods Permitted by the NEC
I (Article 501)	1	<ul style="list-style-type: none">Any suitable type of wire or cable if installed in threaded metallic conduit with approved termination fittings (end seals)Type MI (mineral insulated) cable installed with approved termination fittingsAny suitable type of wire or cable if installed in nonmetallic conduit encased in concrete and buried under at least 2 feet of earthIn certain industrial establishments, Type MC-HL or Type ITC-HL continuously corrugated welded armor (CCW) sheathed cable with approved termination fittings.Optical fiber cable types (OFN, OFC, etc) installed in raceways in accordance with NEC 501.10(A) and 501.15.
	2	<ul style="list-style-type: none">All wiring methods permitted for Class I Div 1Type PLTC or PLTC-ER cables installed in accordance with Article 725 including cable trays. Cables need to installed with approved termination fittings.Type ITC or ITC-ER installed as permitted in Article 727.4 and terminated with approved fittingsType MC, MV, TC, or TC-ER cables installed in cable trays with approved termination fittings (end seals)Optical fiber cable types (OFN, OFC, etc) installed in raceways in accordance with NEC 501.10(A) and 501.15.
II (Article 502)	1	<ul style="list-style-type: none">Any suitable type of wire or cable if installed in threaded metallic conduit with approved termination fittings (end seals)Type MI (mineral insulated) cable installed with approved termination fittingsIn certain industrial establishments, Type MC-HL continuously corrugated aluminum cable having an overall jacket and Listed for use in hazardous locations with approved termination fittingsOptical fiber cable types (OFN, OFC, etc) installed in raceways in accordance with NEC 501.10(A) and 501.15.
	2	<ul style="list-style-type: none">All wiring methods permitted for Class II Div 1Any suitable type of wire or cable if installed in metallic conduit with approved termination fittings (end seals)Type MC or MI cables if installed with approved termination fittings (end seals)Type PLTC or PLTC-ER cables installed in accordance of Article 725 including cable trays. Cables need to be installed with approved termination fittings.Type ITC or ITC-ER installed as permitted in Article 727.4 and terminated with approved fittingsMC, MI, TC or TC-ER cables installed in cable traysOptical fiber cable types (OFN, OFC, etc) installed in raceways in accordance with NEC 501.10(A) and 501.15.
III (Article 503)	1 and 2	<ul style="list-style-type: none">Any suitable type of wire or cable if installed in metallic or PVC conduit with approved termination fittings (end seals)Type PLTC or PLTC-ER cables installed in accordance of Article 725 including cable trays. Cables need to installed with approved termination fittings.Type ITC or ITC-ER installed as permitted in Article 727.4 and terminated with approved fittingsType MC, MI, TC, or TC-ER cables installed in cable trays with approved termination fittings (end seals)

derstood word can result in the loss of life or increase the cost of a project by millions of dollars. A summary of the wiring methods permitted by the NEC in hazardous locations is shown in Table 2 (left). For additional details, please refer to the applicable article of the NEC.

FLEXIBILITY IN HAZARDOUS LOCATIONS

The NEC allows flexible cords to be installed in Hazardous Locations. For more information, please see Anixter's Wire Wisdom: *Flexibility in Hazardous Locations*.

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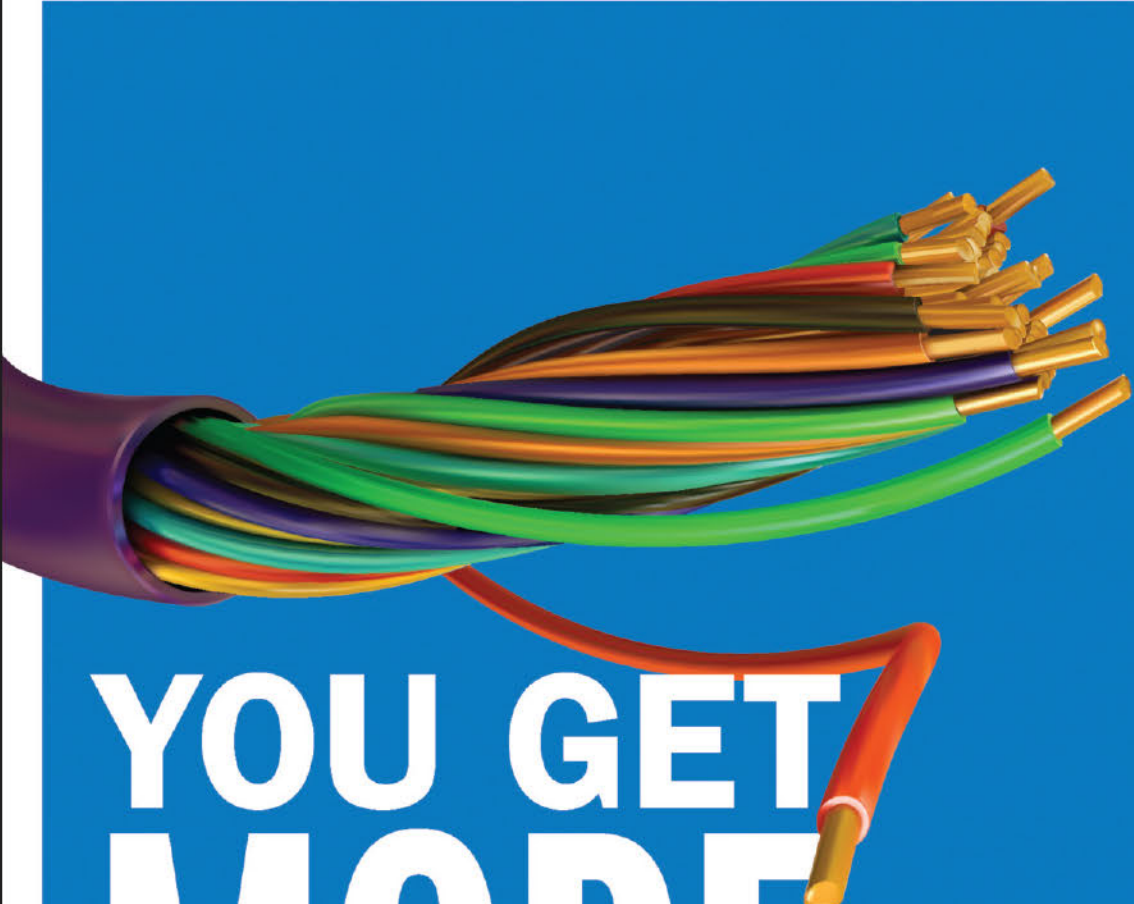
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Alan Jones Appointed Regional Sales Manager for American Kuhn and Welex Brands



Alan Jones
Graham Engineering Corporation

Graham Engineering Corporation has appointed Alan Jones to be regional sales manager for extrusion in the U.S. South-west.

Extrusion comprises Welex sheet lines and American Kuhne extruders and extrusion systems.

Based in Dallas/Fort Worth, Alan Jones will be responsible for sales in Texas, Louisiana, Arkansas, Oklahoma, and Kansas.

“Alan brings more than twenty years of sales experience and career progression in extrusion, plastics, and packaging, including the important blown and cast film segments,” said Robert Deitrick, vice president of global sales. “We are excited to have his expertise locally available to customers in the south-west.”

Alan Jones previously held sales leadership roles for plastics extrusion related companies including Starlinger & Co. GmbH, Reifenhauer Kiefel Extrusion, and Occidental Chemical Corporation.

He holds a BBA degree in marketing from Baylor University.

Graham Engineering Corporation (GEC) is the global standard in wheel and industrial extrusion blow molding solutions, with 400 installations in 20 countries. GEC offers package design, product development and processing expertise, along with monolayer, multi-layer, and barrier extrusion blow molding equipment and technology upgrades. Visit www.grahamengineering.com.

American Kuhne (AK) is the preferred provider of engineered solutions for plastics, rubber, and silicone extrusion. AK solutions comprise standard and custom single screw extruders, feed screws, extrusion systems, and specialized turnkey systems for laboratory, medical tubing, narrow web, wire and cable, pipe, tubing, and profile applications. Visit www.amerikuhne.com.

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Wire Harness Manufacturers Employ Sonobond Ultrasonics Technology to Achieve Critical Industry Specifications

With manufacturers using wire harnesses in increasingly challenging functional and environmental conditions, ultrasonic welding is becoming the favored method of assembly, since it produces welds with high conductivity and tensile strength*. In fact, it's estimated that at least two-thirds of the cabling used in today's cars is ultrasonically welded.

"Wire harnesses are like the central nervous systems for equipment in a wide variety of industries, including consumer electronics and appliances, data and telecommunications, lighting, medical, automobile, marine and aerospace,"

explains Melissa Alleman, Sonobond Ultrasonics' vice president. "It's absolutely crucial that wire harnesses function as required – despite exposure to heat, humidity, vibration, corrosive substances and adverse environments – so good conductivity and guaranteed reliability are essential."

Benefits of Ultrasonic Welding

Ultrasonic welding has become a popular alternative to other methods of welding because it uses vibrational energy to disperse surface oxides and create galling on wire strands. This forms a solid-state metallurgical bond with high conductivity, producing the



lowest resistance weld available.

"Unlike resistance welding that generates high heat, in ultrasonic welding the metals do not melt, so there are no

significant changes in the material properties, and the lower heat means no external water cooling is needed," says Alleman.

Also, unlike soldering – which cannot be used if the temperature at the weld during use approaches the melting point of the solder – ultrasonic welding requires no flux or filler materials.

Plus, ultrasonic welding uses much less time and energy than its alternatives.

Achieving an Ultrasonic Weld

The ultrasonic welding process begins with a power supply that converts input line power into high frequency electrical power and transmits that energy to a transducer. The transducer transforms the electrical energy into vibratory energy, which is delivered to the welding area as sound waves, or ultrasonics.

When the vibrating, shear forces of the ultrasonic waves are directed by the welding tip to the interface between two metals, which are held together under clamping force, internal stresses cause deformation where the materials are in contact. A localized increase in temperature and interfacial slip breaks up oxides and surface films, permitting metal-to-metal contact at many points. Continued vibration causes further deformation of the points, increasing the contact area and essentially creating a weld without melting, and producing a metallurgical bond with high conductivity and tensile strength.

Welding Tin-Coated and Oxidized Wires and Terminals

"One of the things that sets us apart from our competitors is our patented Wedge-Reed Ultrasonic Welding system, the only ultrasonic system that is able to weld tin-coated and oxidized wire and terminals," says Alleman. "This enables our machines to be exclusively capable of producing durable welds when tinned wire is required or preferred."

The Wedge-Reed system uses a vertical vibrating reed, driven by a wedge-shaped coupler and transducer assembly perpendicular to the reed, allowing

AMP-O-LECTRIC MODEL G II TERMINATOR

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

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

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

User Friendly

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

Product Features

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



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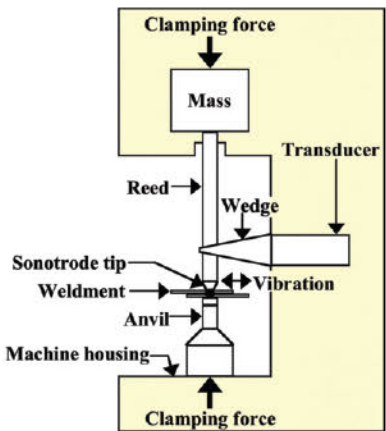
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high clamp force without bending stress or stalling.

Sonobond Equipment Options

Sonobond offers a variety of ultrasonic metal machines - all made in the U.S.A. - for welding a range of wire bundle sizes, starting at one sq. mm. Most assemblies can be completed in a second or less with minimal operator training.

Sonobond Ultrasonics' Patented Wedge-Reed System



for Ultrasonic Metal Welding

Sonobond's Dual Head SpliceRite™ features welding heads on both sides of the weld area, enabling it to provide one-pulse wire splicing of up to 100 mm² in stranded bare copper wire and tinned wire to about 60mm². Also available are a Dual Head Spot Welder, as well as Sonobond's SonoWeld® units, which

can be custom-tooled to weld tinned wire to bare or coated terminals.

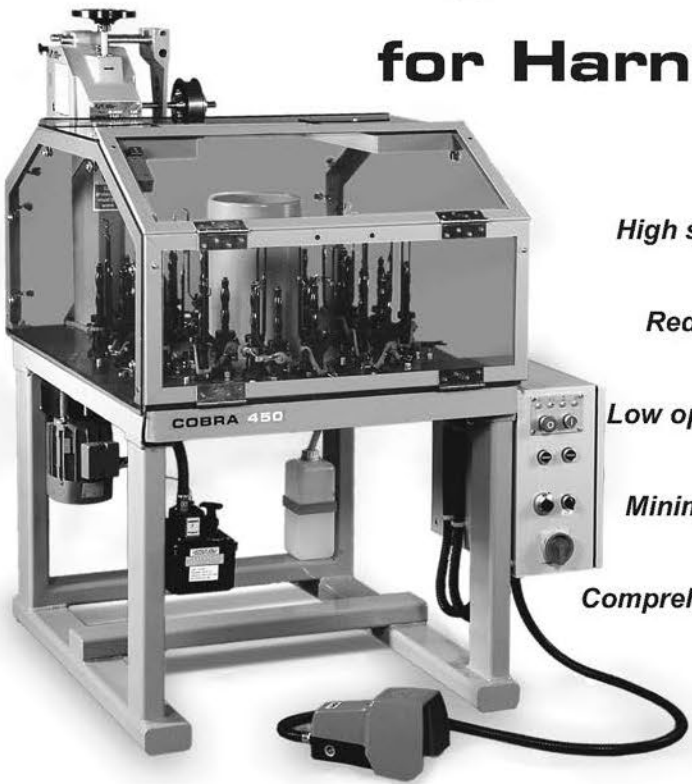
Every Sonobond welder is equipped with a microprocessor controller that can program welds by height, energy or time, and store and recall up to 250 jobs. Additionally, all units have heat-treated, taper-lock tips that are capable of achieving up to 100,000 welds and that are easily replaceable without requiring machine readjustment or calibration. Sonobond's equipment also offers automatic frequency control, overload protection, and can detect and prevent wrong-part or no-part activation.

Order a Free Ultrasonic Welding Viability Test

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

For more information on Sonobond's ultrasonic welding technology and equipment, or to submit materials for a free Ultrasonic Welding Viability Test, please visit www.SonobondUltrasonics.com. For immediate assistance call 800-323-1269, 610-696-4710, or email MALlem@SonobondUltrasonics.com.

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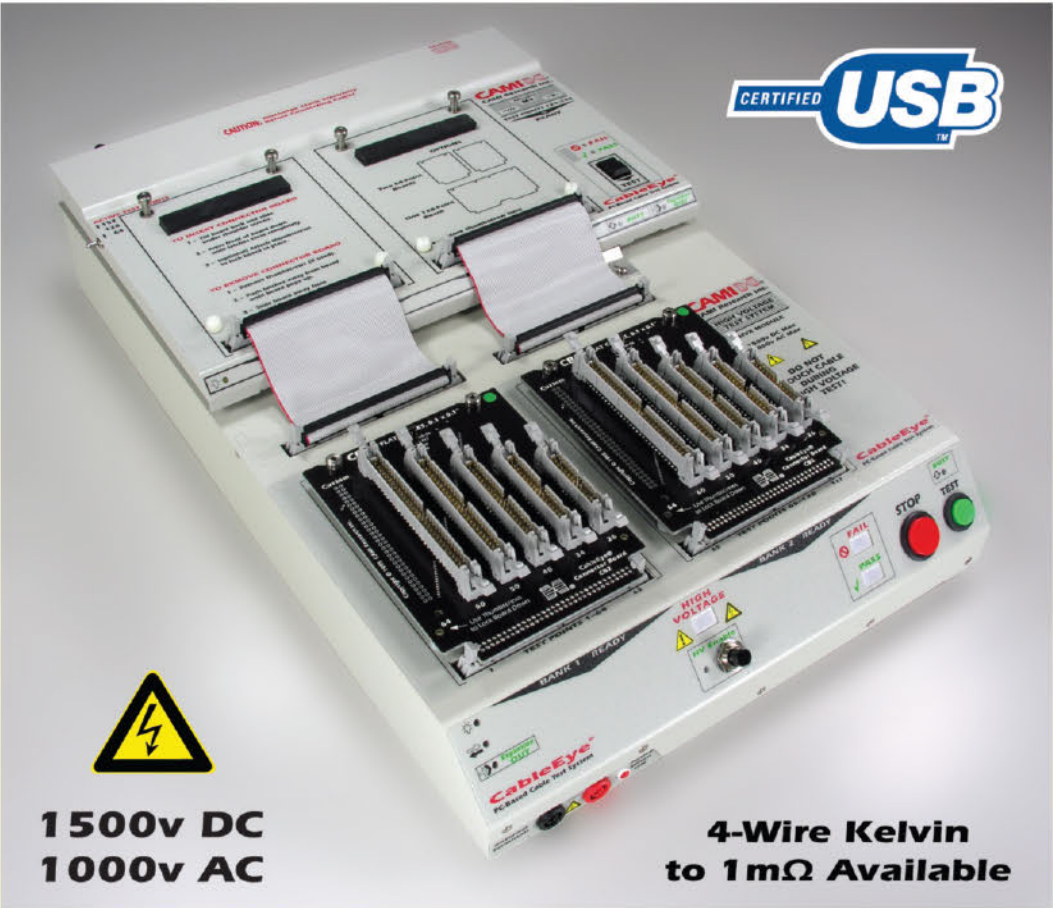
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2	2	66	↔ 0.3 Ω	✓	< 1 µA	1200 V	> 1 GΩ	0.067 mA	818 V	12 MΩ
3	3	67	↔ 0.1 Ω	✓	< 1 µA	1200 V	> 1 GΩ	0.071 mA	820 V	12 MΩ
4	4	68	↔ 0.2 Ω	✓	< 1 µA	1200 V	> 1 GΩ	0.071 mA	818 V	12 MΩ

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NPE 2015 Sets Records for Number of Exhibitors, Amount of Space, and Number of Companies in Attendance

The crowds of attendees and the clamor of working equipment that filled the giant exhibit halls at NPE2015 told the story better than numbers, but now there are statistics to make it official: NPE2015 was the largest show in NPE history.

SPI: The Plastics Industry Trade Association, founder and producer of NPE: The International Plastics Showcase, has released final data for NPE2015, which took place March 23-27 in Orlando, Florida. The data shows NPE2015 attracted 2,029 exhibitors over 1,128,200 net square feet (104,813 sq.m) of exhibit space—exceeding the previous records of 2,009 exhibitors and 1,041,000 net

square feet (96,712 sq.m) set in 2000.

In addition, registered attendance for NPE2015 was 65,810—19% greater than three years ago. These registrants came from 23,396 unique companies—22% more than the 19,198 companies at NPE2012—representing a substantial increase in buying potential.

International participation also set new NPE records. Nearly 44% of exhibiting companies and 26% of registrants came from outside the United States. Nearly 5,000 registrants were from Latin America alone.

Exhibitors came from 37 nations in all. In descending order of number of

exhibitors, the ten largest participating countries are China, Taiwan, Canada, Italy, Germany, India, Turkey, France, Switzerland, and South Korea. These figures don't include many companies that are based in other countries but exhibited through their US subsidiaries.

SPI president and CEO William R. (Bill) Carteaux acclaimed NPE2015 as the most successful NPE by many measures. "What made NPE2015 a milestone in the 69-year history of NPE was not only its size and international diversity, but also the richness of its offerings to attendees," said Mr. Carteaux. "The hundreds of machines operating on the show floor, the customer service centers

provided by material suppliers, the pavilions and programs on current issues and emerging technologies, the extensive agenda of co-located conferences—this wealth of content surpassed our previous shows and now provides a guideline for making future NPEs even more attractive to participants. The plastics industry should be truly proud of its show"

NPE2018 will take place Monday through Friday, May 7-11, 2018, at the Orange County Convention Center in Orlando, Florida. Visit www.npe.org.

HEAT SHRINK APPLICATION TOOLING



RBK-ILS Processor MKIII



Raychem Model 16B
Tabletop Belt Heater

Model 19 Belt Heater

The Model 19 belt heater is the latest generation of versatile process heaters suitable for installing a wide range of heat shrinkable products. Two pairs of timing belts grip the individual work pieces and carry them through an infrared heating zone. The work pieces then pass through a cooling zone before finally being deposited into a collection bin.

The system is ideally suited to installing Raychem tubing products onto both ring terminals and FASTON terminals as well as automotive splices and other suitable applications where the work piece and substrate are suitable for processing. The system is suitable for continuous running with minimum maintenance and downtime. The system provides good process control with both the motor speed and heating elements having closed-loop control. Other controls provide a high level of process security and prevent unauthorized changing of parameters. *CE approved

Process Control

- Closed-loop temperature control
- Closed-loop belt speed control
- Max/min element temperature alarm bands
- Lock-out on temperature belt speed controls to prevent unauthorized adjustment
- Lock-out gate prevents loading of product if the element temperature is too low and if any of the alarms activate

Diagnostic

- Heater failure alarm
- Drive circuit fault alarm

Safety

- Emergency stop switch
- Cool down circuit

RBK-ILS Processor MKIII

The RBK-ILS processor MkIII is a semi-automatic unit designed specifically to install splice sealing products onto ultrasonically welded or crimped splice joints used in automotive harnesses. The tool can operate in several modes: Stand-alone - operator sets time and temperature Sequenced - preset times and temperatures can be sequenced automatically (and can also be randomly selected from sequence stored) Automatic communication with upstream ultrasonic welder can allow time and temperature to be automatically set without operator intervention.

Product Features

- Long life heating elements
- Installation times, temperatures, and product size information (individual selection)
- Sequenced installations
- Operator key lock / password protection levels
- Automatic heater retraction on mains failure
- Automatic calibration (single cycle)
- RS232 interface allows time, temperature and product sizes for the next installation to be transferred from a remote machine (e.g. an ultrasonic welding tool)
- CE approved



www.wiringharnessnews.com

Mando Can Do.



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

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

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

Customers report something unusual too: Mando’s “can-do” attitude.

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

“Can’t be done” is not in Mando’s vocabulary—either English or Spanish. On his own initiative, he solves problems, leads training classes, helps boost plant efficiencies, and makes lasting friendships while doing it.

Mando exemplifies the Eubanks

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

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NEWS PLUGS continued



BURNDY Organizational Announcement

BURNDY®, a leading manufacturer and provider of connector solutions to the industrial, energy, construction, telecommunication, petrochemical, data center, and transportation industries, is pleased to announce the promotion of Mr. Mark Beeson to the position of Mid-Atlantic Regional Sales Manager. He will report to Warren Jenkins, VP Sales & Marketing. He will assume his new role on April 1, 2015.

Mark will lead the newly formed Mid-Atlantic Region. The Mid Atlantic Region includes Kentucky, North Carolina, Ohio, South Carolina, Virginia, West Virginia, and Western Pennsylvania.



Mark Beeson

He will lead both the C&I and Utility Sales Force.

Mark is currently a BURNDY Key Account Manager and was previously a BURNDY Senior Field Sales representative

covering Western North Carolina. Mark drove excellent growth in the market while working with a much diversified end-user customer base. He was recognized with several awards during his time as a factory direct sales person.

Before joining BURNDY, Mark was a Sales Representative with Panduit Corp based in Central Florida.

Mark holds a BS in Business Administration from the University of Central Florida and he will continue to live in the Ashville, NC Area.

For further information contact BURNDY, 4y E Industrial Park Dr., Manchester, NH 03109. Visit www.BURNDY.com

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 trifold 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 trifold 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.

For further 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

Amphenol OCS High-Speed Connectors

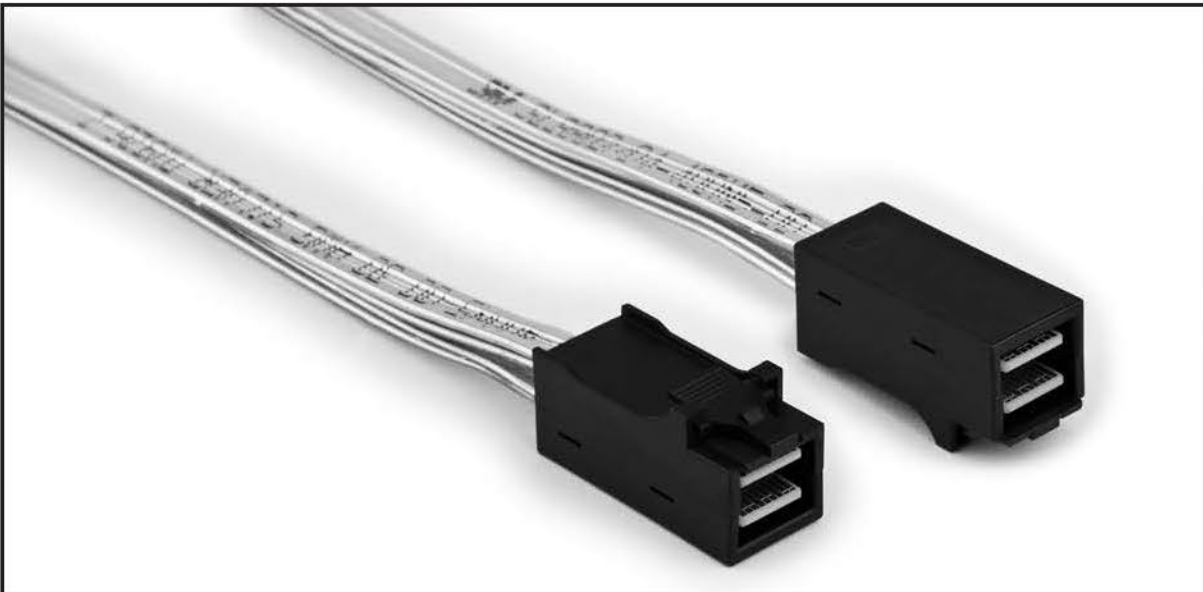
Amphenol OCS connectors (oval contact system) are the newest high-speed interconnects delivering data rates of up to 10 Gbps per pair. The Amphenol OCS series features improved signal integrity via reduced cross talk. OCS offers enhanced attenuation performance as compared to other industry-standard quadrx high-speed connectors.

This rugged, durable connector is ideal for high-speed data transfer applications using protocols such as HDMI, 10G Base T, SATA 3.0, Serial RapidIO and more for the military, commercial and industrial markets.

Amphenol OCS Series Feature:

- High Density: contains (4) 100 Ohm differential pairs capable of delivering data transfer of speeds of 10Gbps per pair
- Size 13 MIL-DTL-38999 connector shells
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- Meets or exceeds SFF-8643 specifications

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LoDan Electronics, Inc. established in 1967, is a global manufacturer of custom cable assemblies and electromechanical assemblies, located in Arlington Heights, Illinois.

The successful applicant should possess the following qualifications

- Analyze customer drawings and other documentation (BOM) to prepare component cost and labor time estimates for custom cables assemblies.
- Review and recommend the appropriate tooling to be utilized for the most cost effective manufacturing methods for these requirements.
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May
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The SDE Advantage!

Lowest Priced
SDE Battery Tool
on the market!

COMPACT POWER WITH MINIMAL EFFORT

EVERY CONNECTION COUNTS



Our new SDE Micro Crimp tool combines the power found in our complete line of lithium ion battery tools with the light weight and ergonomic design found in our family of quality manual hand tools. It's the best of both worlds!

Designed with the operator in mind the SDE Micro Crimp tool weighs less than 1 kg (2.2 lbs), uses 90% less force than a typical manual hand tool and contains a built in LED light for illuminating your crimp and work area. And, for added flexibility, the SDE Micro Crimp tool utilizes the same easily interchangeable SDE die sets found in our portable hand tools or electric bench equipment so that your tools can grow as your needs grow.

CRIMP FASTER IN 3 EASY STEPS

1. CLAMP



Quick pickup: Pull trigger part way and adjust terminal and wire to the proper position before crimping.

2. CRIMP



Depress trigger completely to activate the motorized crimp feature.

3. RELEASE



Release trigger and the jaws will open automatically.

**GAIN A LASTING
EDGE WITH
THE NEWCOMER TO
THE MARKET
LEADER'S
PORTFOLIO.**

40
YEARS
CUTTING
EDGE



KAPPA 331

The Kappa 331 sets new, unique benchmarks for ultra-efficient cutting and ultra-precise rotary stripping. It is modular, agile and user friendly. Along with an integrated length measurement system (LMS) for the guaranteed accuracy of cable lengths, it features automatic readjustment and alternating belt and roller drive. As the global market leader, Komax Wire provides you with complete product lines for wire processing. Be a cut above the rest every day – for a lasting edge over the competition.

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