

October 2016

NEW

# CONSTRUCTION

Products

Innovations in Domestic  
Water Well Products  
Simplify Installation,  
Maintenance

**Fall Protection:**

*ANSI Z359.14 for  
Self-Retracting Devices*

NCP COMPANY PROFILE

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## New Construction Products • October 2016

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Vol. 16- Issue 10

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*New Construction Products*™ is published twelve times a year on a monthly basis by H&F Media Group, Inc., 951 1<sup>st</sup> Ave. W. Alabaster, AL 35007 USA. *New Construction Products*™ is distributed free to qualified subscribers. Non-qualified subscription rates are \$57.00 per year in the U.S. and Canada and \$84.00 per year for foreign subscribers (surface mail). U.S. Postage paid at Birmingham, Alabama and additional mailing offices.

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POSTMASTER: Send address changes to  
H&F Media Group, Inc., P.O. Box 1568  
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## ARI Named Best Workplaces For Millennials

ARI®, a leading global fleet services provider specializing in complex car and truck fleets, has been named for the second year in a row to the 100 Best Workplaces For Millennials listing released by Fortune magazine and the Great Place to Work® Institute. The company earned a place on this year's list based on the responses given by ARI's millennial employees to anonymous survey questions about the levels of trust, pride and camaraderie they experience in the workplace.

"We are very proud to be recognized as a workplace where millennials feel they can develop, learn and grow professionally," said ARI President Chris Conroy. "Our leadership is aware of the value and perspective that millennials bring to the workforce, and we proactively work to develop a culture where they are given opportunities to contribute and collaborate. We also continuously seek out ways to engage and acknowledge them, so they know that the work they do from day to day has meaning and an impact on the overall health of the company."

[www.arifleet.com/about/careers](http://www.arifleet.com/about/careers) •

## Crane Industry Services LLC Announces Skill Assessment Study



Crane Industry Services LLC (CIS) announces a skills assessment study being conducted by CIS in conjunction with CM Labs Simulations Inc., Montreal, Quebec, and West Georgia Technical College. The study's purpose is to determine what operational skill level can be achieved with the use of crane simulators. The study commenced in July and will continue for 14 months and/or after 500 operators have participated in the research.

"This study is a first for the crane industry," said Debbie Dickinson, CEO of Crane Industry Services. "While crane simulation tools are not new to the construction industry, there is little quantitative research that determines the value crane simulation offers as part of comprehensive training. We anticipate that the validated study will be used to set specific goals for skill development." Crane Industry Services is familiar with blended-learning. It currently combines online introductory training, instructor-led classroom training, hands-on instruction, and on-the-job training. CIS leaders were among the first in the industry to create interactive and broadcast quality video learning for the industry.

[www.centeredonsafety.com](http://www.centeredonsafety.com) •

## Mack Trucks Introduces New Integrated Parts Cross- Reference System



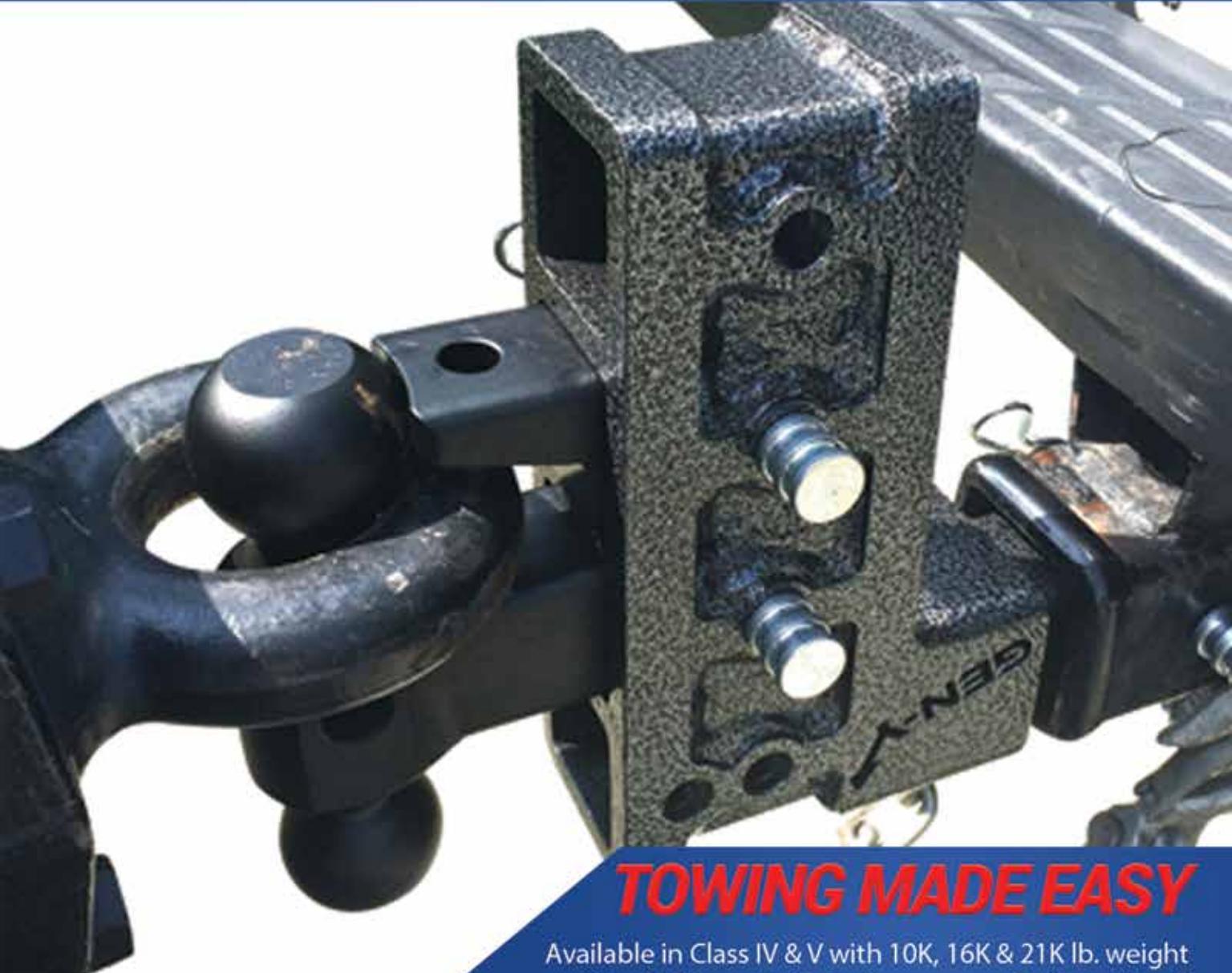
Customers who purchase heavy-duty parts online now have the power to find more parts in less time, as Mack Trucks recently rolled out an integrated parts cross-reference feature of the Mack® SELECT Part Store™ e-commerce platform. The new cross-reference tool uses a proprietary database that analyzes the part numbers customers search for and provides them with the equivalent Mack Trucks parts, giving customers more robust results and real-time inventory availability.

"Mack SELECT Part Store now offers the heavy-duty trucking industry's first cross-reference tool that is integrated into an e-commerce platform, and continues Mack's tradition of breaking new ground to consistently meet our customers' ever-changing needs," said Chad Johnson, director of aftermarket marketing for Mack Trucks. "Mack SELECT Part Store has experienced an average of 60 percent growth in volume each year since the platform launched in 2010, and we've kept the bar high to give our customers the parts purchasing power they demand and deserve."

The new cross-reference feature is directly integrated into participating Mack Trucks dealers' parts inventories via the Mack SELECT Part Store.

[www.selectpartstore.com](http://www.selectpartstore.com) •

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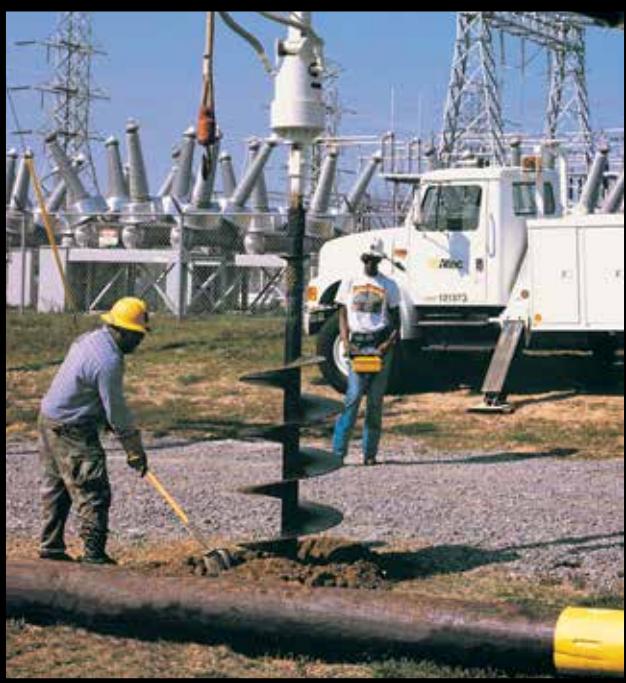


PENGO was established in 1950 near San Francisco, California to design and manufacture utility industry equipment to pull and tension high voltage transmission lines. The company later developed augers to drill efficiently in conditions, which, at the time, were considered extremely difficult. Within a few years, Pengo held over 169 patents, most of which are still the basis for current drilling industry standards. The BoRH® auger line is the latest patented product that has been chosen by the leading dealers, distributors, and OEM (Original Equipment Manufacturers).

Today, PENGO is one of the largest manufacturers of augers and related wear parts in the world, serving the utility, construction, agriculture, foundation, and major worldwide OEM customers. Our products are available through a network of over 500 dealers and OEM's. The product line has included forged, cast and fabricated attachment and foundation drilling tools and components. PENGO acquired CAM Manufacturing in May 2004. This added the conveyor screw product line and the ability to manufacturer heavy duty helical and sectional flighting.

With manufacturing and distribution points in Iowa and Minnesota, we have several locations to serve you.

#### **MD UTILITY AUGERS**



With over fifty years of experience, PENGO is the leader in auger and auger parts for the utility markets. Special-

izing in the MD utility auger, PENGO offers a "build your own" style in which you select your hub, flight length, pilot and teeth. Whatever the drilling conditions, PENGO has you covered!

#### **CONSTRUCTION AUGERS**



PENGO manufactures a wide variety of general construction augers for skid-steer, mini excavators, and backhoes. The grandfather of our Construction auger line is the AGGRESSOR® auger. This standard dirt auger continues to be the choice for contractors world-wide. In 2008 we added the patented Bolt On Rock Head or BoRH®. The BoRH® converts the AGGRESSOR® auger into a rock auger in a matter of minutes. PENGO construction augers are used in drilling conditions such as standard dirt, fracturable rock and non-fracturable rock. They are built with either single or double flight. Complementing the standard augers are replacements parts manufactured with hard facing, tungsten carbide or hard-faced tungsten carbide.

**CONSTRUCTION  
Aggregate Milling  
Utility Agriculture**

## FOUNDATION AUGERS



PENGO is poised to meet the needs of today's foundation drilling market. We specialize in custom built drilling tools which include a wide range of augers, drilling buckets, continuous flight augers, core barrels and foundation components. Let Pengo be your solution provider for your foundation tooling challenges.

## EXCAVATOR AUGERS



PENGO has expanded its Quick-Change Auger system to include augers for excavators. With the Quick-Change Excavator auger there is no need to carry two or more augers. This system combines three augers into one. Just select your flight body and add any or all of the three different head options including carbide and dirt heads, spiral rock heads and our patented ROCK RIPPER® head.

## CONVEYOR SCREWS AND FLIGHT



At PENGO we have the expertise to take raw stock and turn it into the correct helical configuration to exactly meet our customer specifications. Our manual and CNC turning a milling services, combined with screw milling of solid bar stock up to twelve inches in diameter and up to seventeen feet long, means we can fabricate virtually any screw or auger required.

## WEAR PARTS



From tooth to hub, PENGO offers a wide range of replacement parts and accessories for your augers. With over 2,000 parts we are your one-stop shop. The quality of our products is world renowned. We hold patents on the TRIFLOW® and ROCK RIPPER® pilot bits and the Bolt On Rock Head. We have recently added to our list of innovative designs FAS-N-LOK® dirt or carbide teeth, which install without the need for RubRLok and the all new STRATA™ Conical Teeth which are designed with a drilling grade carbide for optimal rock drilling. The STRATA™ Conical tools are made in the USA.

Here is a sample of the parts PENGO carries.  
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at [www.pengoattachments.com](http://www.pengoattachments.com) •

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Boring Head Assemblies*

*Shanks  
Hubs  
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Couplers*

*Mounting Plates  
Nuts / Bolts  
and More!*



***Inspection Instruments, Inc.  
Introduces Thermal Evaluator  
of Mass Pours (TEMP)***

Inspection Instruments, Inc., a fully owned subsidiary of Pile Dynamics Inc. (PDI), was founded in 2007 to distribute sophisticated electronic testing equipment for the engineering and construction industry. PDI, a world renowned developer and manufacturer of quality assurance testing instruments for the deep foundations industry, offers several systems for Quality Assurance / Quality Control of Concrete Foundations. Pile Dynamics is led by scholars in Dynamic Foundation Testing, who frequently lecture and publish on the subject. The Pile Driving Analyzer® (PDA) system, with CAPWAP® software, used for Dynamic Load Testing of any foundation, and for Pile Driving Monitoring, was developed by the founders of PDI in 1972 and has become the industry standard testing equipment. Our products are used in more than 100 countries.

The PDA is the most widely employed system for Dynamic Load Testing and Pile Driving Monitoring in the world. High Strain Dynamic Load Tests, also called PDA tests, assess the capacity of several piles in a single day. Pile Driving Analyzer systems also evaluate shaft integrity, driving stresses and hammer energy when monitoring installation. The PDA-8G takes data obtained by sensors (accelerometers and strain transducers) easily attached to the pile and calculates foundation capacity by the Case Method and I-CAP®. I-CAP computes capacity in real time after every blow by signal matching. This calculation often better evaluates stresses in the pile.

Pile Dynamics also manufactures industry leading solutions for integrity testing of concrete deep foundations including: Pile Integrity Tester (pulse echo method), Thermal Integrity Profiler (drilled shaft/ACIP Pile evaluation by the thermal method); CHAMP (crosshole sonic logging of drilled shafts) and SQUID (for borehole evaluation prior to concreting).

PDI created Inspection Instruments, Inc., as a result of realizing the need for construction sectors other than deep foundations to benefit from multiple decades of their technical expertise and manufacturing excellence in dynamic testing.

# AUGERS DRIVES WEAR PARTS



**CONSTRUCTION**  
**Aggregate Milling**  
**Utility**  
**Agriculture**

## THE ALL NEW UTILITY SERIES ROCK RIPPER® AUGER



All aspects of the Utility Series Rock Ripper® have been improved with the new design. Considerable attention has been paid in order to improve drilling rates and reduce vibration. The redesigned progressive-style Rock Ripper® allows the auger to "bite" into the rock which reduces the vibration while it increases drilling production.

The distinct attack angles paired with the STRATA™ series SR-76SW carbide drilling grade teeth are designed to cut through the rock. The Utility Series Rock Ripper® is the auger to use for your utility rock drilling projects.



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Recently, Inspections Instruments and PDI developed TEMP (Thermal Evaluator of Mass Pours), an application of thermal testing used for QA/QC in mass concrete structures to avoid temperature-related damage and help contribute to the desired long-term service life. TEMP records real-time temperature information in specified locations within mass concrete structures to help ensure that maximum internal and differential concrete temperatures do not exceed their specified allowable limits. As concrete temperatures begin to approach the specified limits, the contractor or inspection firm can immediately perform corrective actions, such as adjusting the thermal control measures and cooling system (e.g. flow rates). Furthermore, temperature information can be used to estimate in-place concrete strength with the maturity method (ASTM C1074) and therefore facilitate accelerative construction objectives and other construction decisions e.g. proper time of formwork removal, proper time of loading of the structure, etc. Although several systems of monitoring and recording of temperatures in mass concrete have been in use in recent years, TEMP introduces refinement of the method including the ability to monitor multiple locations on one cable (multi-sensor cable), ability to measure in-place temperatures for an extended time after pour placement, cloud-based remote access control, and cellular based real-time communication.

TEMP's Thermal Wire cables are fitted with custom-spaced temperature sensors and are cast into the concrete, often tied to

the reinforcement bars. The TEMP cables are connected to an external TEMP data logger that reads and stores measurements in real time. Quick observation is available in the field via the TEMP main unit. However, further analysis and reporting is conducted once the data is used in conjunction with TEMP-S software. TEMP-S displays measured temperatures versus time in graphical and tabular forms, displaying maximum and minimum temperatures, as well as maximum differentials ( $\Delta T$ ). Concrete maturity and estimated concrete strength may also be calculated. Once the analysis is complete, TEMP-S outputs a fully customizable project report.

Inspection Instruments and PDI will continue to innovate the construction and deep foundations industries through the development of various quality assurance/quality control testing equipment and technologies. Our technologies are used worldwide on various types of deep foundation structures, both on- and off-shore. We offer customized training in the use of our equipment, as well as certified continuing education through foundation testing workshops, seminars and webinars around the world.

Headquartered in Cleveland Ohio, USA, Inspection Instruments and PDI products excel in quality, reliability, accuracy and durability.

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## Measure Concrete Temperature and Maturity in Real Time

### Real Time Concrete Monitoring Equipment



### Thermal Evaluation of Mass Pours

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### TEMP-S Software

- View data in graphical and tabular formats, including peak temperature and maximum differentials
- Estimate concrete strength via temperature sensors/maturity sensors
- Quickly generate full PDF reports
- Cloud-based remote access to data and cellular based real-time communication



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## Innovations in Domestic Water Well Products Simplify Installation, Maintenance

*Contractors are increasing looking to suppliers for innovative solutions that increase efficiency & reduce costs*

While water well drilling and pump installation contractors have access to products at local hardware stores, big box stores, or regional wholesalers, they are often exposed to a fraction of what is actually available. Retailers, in fact, typically offer only a few of the most common items. Even wholesalers tend to funnel contractors to the products that they stock.

The complexity in a domestic water well system begins with the myriad parts needed to integrate the well, pump, water storage tank, all the pipes and fittings, and the water distribution line to where it is utilized. Adding to the challenge are the various codes and design options required to meet tougher federal, state, and municipal regulations.

Increasingly, the "standard" list of core stock items is no longer enough to meet such demands. As a consequence, having the right parts and accessories for the job requires a source that offers a wide range of options and code-compliant choices.

Now a growing number of contractors are demanding suppliers readily offer a more comprehensive list of parts and accessories that enable the streamlining of installations and maintenance, allowing contractors to take on more jobs.

"As proactive contractors look beyond the usual parts and accessories, they are finding attractive options they never knew existed," says Danny Ahrens, owner of Florida-based Water Products

Marketing, a supplier of water well equipment to distributors and contractors. "Innovation is helping them to install water well equipment more efficiently and cost-effectively while at the same time improving quality; and that gives them an edge in the market."

### Gaining an Edge

While some contractors tend to use the same standard parts and accessories that perhaps their mentors or fathers did, too often this approach can become a rut that limits their work efficiency and business success. Finding and trying more effective non-standard parts can dramatically cut their installation times, among other benefits, if they ask their distributors and wholesalers for a wider range of options.

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As an example, as opposed to installing a traditional control box and pressure switch, running wires between them, and fitting all the connections in an undersized case, contractors could be using a Control Switch. This innovative device combines a 3-wire control box (with start capacitor, relay, run capacitor, and a wire terminal strip) and a pressure switch into one easier to install device. The design eliminates the added time to install and connect a pressure switch and a separate control box.

The device, by Merrill Manufacturing, an Iowa-based water well/water system accessory manufacturer for the domestic, residential market, offers a heavy-duty pressure switch for longer life, an extra large case for easy wiring, and heavy brass wire connections that can hold #4 wire.

"Instead of a standard pressure switch and control box, installers are finding that Merrill's control switch can act like a junction box," says Ahrens, who has been involved with more than 50 field installations with the device, some operating more than 9 years.

"The design reduces the amount of required connections – including conduit, fittings, washers, and lock washers – by half," explains Ahrens. This speeds installation up to 50%, allowing installers to take on more jobs. It also extends service life, minimizes time-wasting nuisance calls, and eliminates issues related to start capacitors and relays."

Because the control switch works universally with all brands of motors, it also reduces the inventory of replacement parts that contractors must bring to the jobsite. "Traditional control boxes are motor specific, so have to be matched to run properly," says Ahrens. "With the control switch, however, contractors can travel light because it works with any domestic or foreign motor."

#### Meeting Code

Another key area where many contractors require a full range of equipment options is in hydrant selection, due to

significant variations in local climate, code and other factors. However, improvements in domestic water well devices are occurring here as well.

"To meet current Michigan code, we needed state-approved hydrants that do not drain back because these are no longer accepted," says Chuck Garvie, a project manager at Brad Malley Well Drilling, a Michigan-based well drilling contractor and pump installer.

In this category of non-drain back hydrants, which help to meet municipal water codes and protect the underground well water supply, are devices with other useful features.

Garvie, for instance, selected a removable, sanitary yard hydrant called the Hide-Drant by Merrill. The company has one of the industry's largest, most complete line of products to meet state or local well codes, with 24 series of yard hydrants, eight series of pitless products in all types, as well as splice kits, insert fittings, tank tees, and a full range of other water system accessories.

"The Hide-Drant meets Michigan state, municipal, and residential code," says Garvie. "It is easy to install with no need for a double check backflow preventer or secondary line to be run with it. With a riser made of steel and a stainless steel connection, we have had virtually no callbacks. I installed one in my home and it still works well after 12 years with no problems."

Since the sanitary yard hydrant's insides are removable, users can easily connect one to the closest installed base for safe, convenient placement.

"At wells for RVs, campsites, or cabins, when people leave in the fall they can remove it to avoid freeze risk," says Garvie. "At vacation properties, it can be removed to prevent vandals from running water in the owner's absence, or it can be removed for easier mowing and then replaced."

For colder climates where all-year access to well water is required, additional innovations are available.



Nick Nawcewicz, a plumber at D&D Mechanical in North Dakota, for instance, has enjoyed success with the Any Temp Heated Hydrant. The device provides frost proof water service with a self-regulating heating cable that keeps water flowing, and drains itself below the frost line when shut off. It is often installed in mobile and manufactured homes, as well as livestock waterers in cold regions.

While some electrically powered heating cables in the industry are submerged below the water line and not grounded, the device's heating cables are grounded and not placed under the water line.

"We have found that the Any Temp Heated Hydrant succeeds anywhere heated well water is needed year-round," says Nawcewicz. "The heated cables are kept dry outside of the pipe, so they are easy to install, replace, and do not have to be dug up. They are grounded and essentially trouble free. I have never had one trip out from ground faults."

A few additional innovations that may pay off for contractors include: pitless adaptors and easy to install pitless kits; extra-long, electrical heat shrink tubing with a sealant and adhesive inside; stainless steel connectors at a price lower than no-lead brass; self-lubricating hydrant plungers that last over 1 million cycles; and variable speed pumps that vary depending on water demand.

For contractors needing to cost-effectively meet well codes and stay competitive, having access to a wider range of well equipment and accessories can further streamline their installation process. Paying attention to some of the smaller details in system design and product selection can help to optimize quality as well.



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## *The Safety Company*

You probably know that workplace falls are one of the most common and often serious employee accidents. For this reason, employers are required by the U.S. Occupational Safety and Health Administration (OSHA) Standard 1926.501 to provide fall protection.

This regulation in brief defines fall hazards as those locations where "unprotected sides and edges" exist 6 feet (1.6 m) or more above a lower level. OSHA requires fall protection to be provided "by the use of guardrail systems, safety net systems, or personal fall arrest systems".

Guard rails and safety nets offer excellent fall protection, but they aren't always practical. For example at construction sites, on utility towers, in aircraft facilities and other industries, personal fall arrest systems protect employees who must work on high open leading edges.

Fall arrest systems for leading edges such as open beams and rooftops provide a lifeline of safety for workers in high locations. The safety industry has developed various self-retracting devices (SRD's) that attach to harnesses as fall arrest systems for employees.

Depending on the fall hazard and the industry, SRD's for leading edges are designed with multiple technologies and materials. For example, arresting a fall at different levels of say 2 feet versus 4 to 5 feet requires a different SRD design and construction materials.

### *What Is ANSI Z359.14?*

The reliability of SRD's is a great concern to both employers and employees, which is the point of ANSI Standard Z359.14. This guideline was developed by the American National Standards Institute (ANSI) with the help of the American Society of Safety Engineers (ASSE).

ANSI Z359.14 sets industry standard requirements for SRD performance, design, qualification testing, markings and in-

## *Fall Protection: ANSI Z359.14 for Self-Retracting Devices*

structions, inspections, maintenance and storage, and removal from service. It applies to manufacturers, distributors, employers and employees.

This standard identifies three types of SRD's. The three types of SRD's are: self-retracting lanyards (SRL's), self-retracting lanyards with integral rescue capability (SRL-R's), and self-retracting lanyards with leading edge capability (SRL-LE's).

It also divides SRD's into two classes. Class A SRD's are defined as having a maximum arrest distance of 24 inches (610mm). Class B SRD's are defined as having a maximum arrest distance of 54 inches (1,372 mm).

### *Why Is ANSI Z359.14 Important?*

If ANSI Z359.14 is a voluntary standard, then why should I or my company pay attention to it? There are too many OSHA government regulations. The cost of compliance and insurance hurts my bottom line. My competitors will ignore it to their competitive advantage.

Let's start with the basic value of human life and personal safety perspectives of this workplace standard, which is to prevent debilitating or fatal employee fall accidents. No one wants employees or coworkers to risk injury in hazardous locations without proper protection.

The development of ANSI Z359.14 included input from safety experts, manufacturers, employers and employees. It is a best practice standard that levels the playing field among manufacturers and assures employers that they are purchasing a reliable fall protection system.

Are ANSI standards really voluntary? OSHA officially recognizes ANSI through a memorandum of understanding (MOU) as a valued partner in achieving national safety consensus standards. It also can reference ANSI standards in clarifying its own regulations.



# Applicability Wizard



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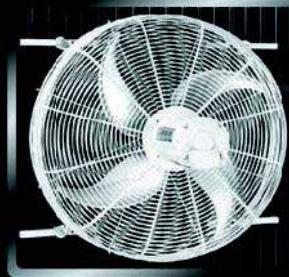
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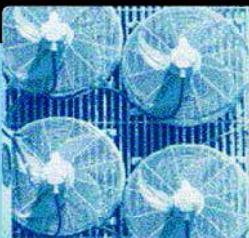
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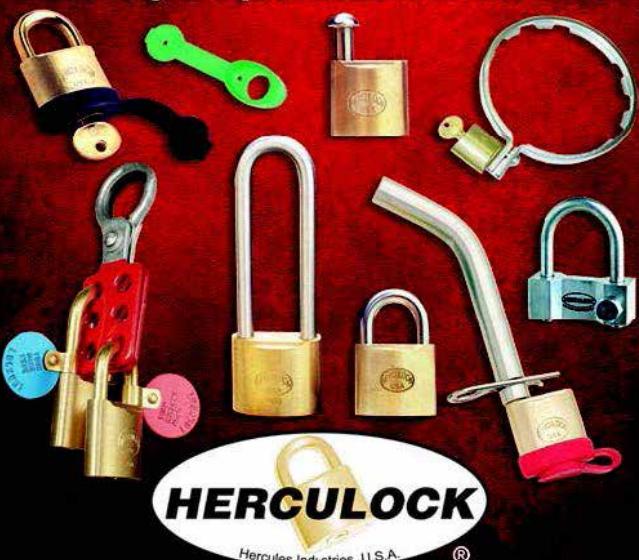
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So what's the difference between a voluntary safety standard, an industry safety best practice and an OSHA safety regulation? The practical answer is none at all if you've suffered a serious accidental fall or are the surviving spouse of a fatal fall accident.

Attorneys and expert witnesses can be quite convincing on this point in front of a jury when a worker suffers a preventable fall or if safety equipment fails. That's especially true when the injuries might have been avoided with the use of industry standard safety equipment.

There is a fine line between meeting the law and negligence when your only defense as an employer is that the law didn't require it. In the case of injuries resulting from falls where the worker was poorly protected without outdated legacy equipment, the implications are clear.

*MSA, The Safety Company & ANSI Z359.14*

As a manufacturer of SRD's, MSA supports ANSI Z359.14 and has implemented its requirements in its product designs, materials and testing to meet this standard. We recognize the dangers of leading edge exposures to employees high above ground level.

The MSA Latchways® brand of fall protection solutions are trusted to ensure worker safety on a wide range of buildings, towers and structures. The key to our reliability lies in MSA's unique understanding of load control at the end of a free fall and the required heavy-duty SRD components.

For example, the force exerted at the end of a longer worker free fall could snap a simple fabric lanyard or a single cable as it contacts the leading edge. Hazardous industrial work sites require robust SRD designs and construction materials to counteract these forces.

Our Latchways Leading Edge Self-Retracting Lifeline (SRL) meets ANSI Z359.14 for SRL-LE's. It features a frictionless braking system with no moving parts to go out of adjustment. The constantly moving full contact locking mechanism cannot freeze, hang up or corrode.

### Conclusions

If you distribute, purchase or actually use SRD's, then ANSI Z359.14 represents a vital industry consensus and best safety practice in fall protection. Be sure to inventory your SRD's to make sure that they meet this new standard so you can protect yourself and your team.

In addition to providing fall protection equipment, MSA offers extensive training in their use and application. Our knowledge base of fall hazards is extensive. If you're having a problem, chances are our highly trained experts have seen it elsewhere and solved it before.

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# Jeffrey Machine, Inc.:

Jeffrey Machine, Inc. is one of the world-leading manufacturer of foundation and utility drilling tools, including augers, tooth holders, teeth, couplers and more, all designed to the customer's exact specifications. Jeffrey Machine works side-by-side with customers to create drilling tools with enhanced capabilities as unique as the demands of each job. Development of each innovative Jeffrey Machine product is the result extensive field studies and a commitment to continually improving the safety and performance of each product.

Jeffrey Machine offers a comprehensive line of auger tooling manufactured to ensure optimal performance under the most demanding drilling conditions. At the heart of this leading manufacturer of some of the world's toughest tooling is a precision machine shop that's small enough to continue providing exceptional, personal service. Their continued success is attributed to their ability to listen to and understand their customers in order to deliver each one the right tools.

Over the years, Jeffrey Machine has developed an excellent reputation for its customer oriented philosophy, and for producing and selling highly dependable products. At their 100,000 square foot, state-of-the-art facility in Birmingham, Alabama, they manufacture augers and other drilling tools of all shapes, sizes, makes, and models, from 6 inches to 15 feet or more in diameter for utility, heavy foundation, and light construction equipment.



Their custom approach has been the way they've done business since 1977 when Frank Sager founded the company as a machine, tool and die shop. Frank, a machinist and metal fabricator with many years of experience, created tools to the exact design request of his customers. Later, when he passed the family trade on to his son, Jeffrey Sager, who took great interest in the auger market, this same philosophy was carried on.

Jeffrey began working with augers in 1984, first repairing them and later rebuilding them, with results that were quite often better than the original tool. In addition to tool and die projects, local contractors began to seek out their services to repair equipment like broken augers. It was, therefore, a natural progression to fill that market demand by beginning to manufacture better tools that would hold up to Alabama's limestone and rocky soil.



In 2001, a 20,000 square foot shop was built, and due to increasing demands, another of equal size was constructed in 2002. Another expansion completed in 2007, brought the facility to right at 85,000 square feet, making Jeffrey Machine one of the world's largest independent auger manufacturers.



# *Driven by Precision Since 1977*

This state-of-the-art facility uses both standard and proprietary equipment, including a game-changing Plate Roll that greatly increases their capacity to quickly roll cylinders of up to two-inch thick material up to 10 feet long, in diameters as small as two feet and as large as 15 feet, making it perfect for barrels, cylinders and coring products that need a quick turnaround from shop floor to job site. This custom Plate Roll was a substantial investment that greatly improved the factory's ability to be more responsive to customers' needs, and adding new areas of potential expansion into new markets.

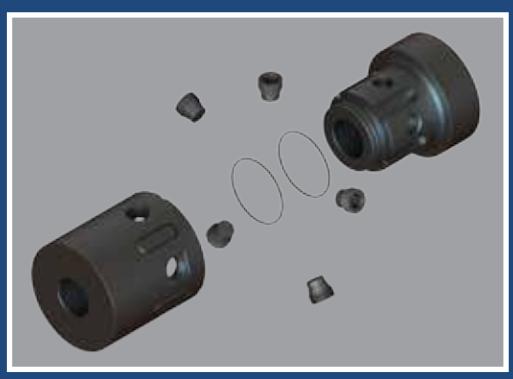
The goal of drilling contractors worldwide is to achieve the fastest, most efficient result with the least amount of wear on machinery, and the lowest cost on everything from man hours to fuel. Jeffrey Machine delivers with the finest, most comprehensive line of drilling tools in the industry. From dirt and rock augers, to CFA and core barrels, to a full line of utility augers, revolutionary Dragon's Tooth® Rock Cutting System, and much more, their custom manufactured tools are designed to devour the densest rock, eliminate project downtime, and reduce wear-associated costs. In addition, Jeffrey Machine takes pride in having a large inventory of wear parts and components for the drilling tool industry.

A stand-out in their comprehensive line of drill tools are the innovative new .990 dirt tooth, .990 TRI Holder, and their revolutionary new Spline Couplers.

Designed by Jeffrey Machine, the .990 dirt tooth is manufactured in partnership with BETEK GmbH & Co. KG, one of the foremost global manufacturers of wear parts incorporating tungsten carbide.

The new .990 dirt tooth is engineered for use with a multi-purpose type auger equipped with a .990 TRI Holder. The versatile TRI Holder is uniquely designed to accommodate three different types of teeth: the new .990 dirt tooth; the standard .990 tooth (known in the industry as C-31); and Jeffrey Machine's exclusive .990 Dragon tooth.

The .990 size of this new dirt tooth is commonly used in both Foundation and Utility drilling applications in which ground conditions are dirt, clay, sand, compacted soils, and other low abrasion materials. Its versatility allows it to function effectively on machines ranging from some of the largest in the industry, to the smallest.



Proprietary to Jeffrey Machine, this new .990 tooth is unique in that the shank of the tooth will fit in a C-30 holder (or pocket), which is machined in-house from 4140 high tensile steel. The benefit of this interchangeability is that it allows contractors to move easily from a project in a rocky environment that requires a conical rock tooth or Dragon tooth, for example, to one in a non-rocky condition using the .990 dirt tooth in the same tool. This interchangeability helps significantly reduce project set-up downtime, in addition to reducing costs that result from the need to transport multiple augers to project locations.

Another new addition to the Jeffrey Machine line-up is their revolutionary Spline Coupler. Engineered for safety and performance, the Spline



Coupler is Jeffrey Machine's answer to customer requests and increasingly tougher contractor requirements.

Jeffrey Machine's Spline Coupler is designed for use on Continuous Flight Augers (CFAs). It effectively joins together multiple strings of CFAs, in lengths of 5' to 20' and various diameters, to prevent movement between the connection points of each flight. The coupler allows for faster assembly and disassembly on the project site, both key factors in minimizing job site downtime, and maximizing each contractor's return on investment.

At connection points where Spline Couplers are installed, flight seams are timed together for a smooth transition in metering soil material up the string. The 5 set screws and 5 internal keys result in a much safer connection point and allow more torque ability. The 5"ID delivers excellent flow for pumping grout material.

The male/female coupler assembly is manufactured from a high PSI yield strength material and the set screws are high tensile strength material. The 9-1/4" Spline Coupler assembly has a turning torque rating of 150,000 ft-lbs with a safety factor of 2. Jeffrey Machine also offers a 14" Spline Coupler assembly rated at 550,000 ft-lbs turning torque with a safety factor of 2. Jeffrey Machine now also offers 7" and 11" Spline Couplers with turning torque ratings of 49,500 ft-lbs and 300,000 ft-lbs respectively, each with a safety factor of 2.

The ability to delivery exactly what their customers demand and the success contractors across the globe have experienced as a result of these innovative products is why Jeffrey Machine has grown from a small machine shop to one of the leading drilling manufacturers in the world. For more information about these products and the complete line of Jeffrey Machine tooling, visit [JeffreyMachine.com](http://JeffreyMachine.com).

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- Save time and money by keeping track of only one part number, rather than several individual part numbers for each service interval

Manitou Americas, Inc. is proud to introduce XPRT™ Genuine Parts maintenance kits for Gehl and Mustang compact equipment. The maintenance kits are specifically designed with the XPRT Genuine Parts required to perform the recommended routine maintenance.

The maintenance kits include the exact filters necessary to perform the recommended routine service maintenance. A typical filter kit includes components such as air filters, an engine oil filter, fuel filters, hydraulic oil filters, transmission filters, and cabin air filters if necessary.

"The creation of maintenance kits for Gehl and Mustang branded machines demonstrates our commitment to reduce the total cost of ownership (TCO) for our customers", said David Harrison, Director of After Sales, Manitou Americas, Inc. "By creating the maintenance kits, we've made it easier and less expensive for our customers to perform the routine scheduled maintenance on their compact equipment; now only one part numbers is necessary to perform scheduled maintenance at any given interval. Completing routine maintenance increases the resale value which is the number one driver of TCO".

The maintenance kits also offer up to a 10 percent cost savings by purchasing one kit rather than each of the kit components separately. XPRT Genuine Parts maintenance kits can be purchased at any authorized Gehl or Mustang dealership.

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# Milwaukee® Introduces Performance Work Gear

*Milwaukee Tool has expanded its Work Gear line to include a new Jacket and cold weather Base Layer. The Milwaukee® Hooded Jacket and WorkSkin™ Base Layer's combination of heavy duty construction and performance materials provide users all-day comfort and durability in even the toughest jobsite conditions.*

The industry leader in heated gear, Milwaukee Tool, has expanded its Work Gear line to include a new Jacket and cold weather Base Layer. The Milwaukee® Hooded Jacket and WorkSkin™ Base Layer's combination of heavy duty construction and performance materials provide users all-day comfort and durability in even the toughest jobsite conditions.

"Milwaukee's popular M12™ Heated Gear provide an excellent way for users to stay warm in cold conditions utilizing REDLITHIUM™ technology; but in looking at how people use gear

more broadly, it was obvious that most of the insulated workwear hasn't changed for decades. As a result, today's industry professionals lack effective non-battery-powered solutions that are designed for their specific needs," said Patrick Lueck, Product Manager for Milwaukee Tool. "Our new Performance Work Gear begins to address the full scope of what our users need to do while on the job. After years of jobsite research, we've designed a new Hooded Jacket that reinvents the classic style by combining the very best rugged material with targeted durability reinforcements and innovative mobility enhancements that make it easy to move around in all day."



Engineered to battle the jobsite and survive the elements, Milwaukee's Hooded Jacket is built for tradesmen who can't let cold slow them down. Focused on providing reinforcement in areas where traditional workwear fails, its GridIron™ 900 Denier Ripstop Polyester material outlasts cotton duck by 3X against abrasion and tearing. Large riveted and reinforced utility pockets and a tarnish resistant metal zipper provide increased durability. The Jacket also features FreeFlex™ Mobility enhancements across the back, under-arms and armpits, and a

fitted hood designed to provide full range of vision. The combination of these features make the new Hooded Jacket perfect for users who require trusted durability while on the jobsite, and the maneuverability that helps them get the job done.

"As athletic base layer materials have become more popular, they have failed to address the durability needs of work environments. With the launch of the new WorkSkin™ Base Layer we've focused on bringing this level of performance materials and extended life to meet the needs of the professional tradesman. By understanding how our users work in cold weather better than anyone

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else, we've developed a performance base layer for the professional tradesman – a first in our industry," said Lueck.

The Milwaukee® WorkSkin™ Cold Weather Base Layer is constructed to handle the demands of hard work in cold conditions. Unlike cotton options, the new Base Layer features Fast Wicking Sweat Zones underneath the arms and across the upper

back move moisture away quickly from high-sweat areas to avoid dampness, cold, and freezing. Unlike base layers designed for athletic use, its durable fabric resists pilling and fighting odor to extend product life. When worn next-to-skin and under outer layers, WorkSkin™ manages moisture and body temperature to help tradesmen work dry, stay warm, and stay comfortable in the cold – all

while standing up to the demands of the jobsite.

Whether on or off the jobsite, Milwaukee's Heavy Duty Work Gear provides users the durability and comfort they need without sacrificing jobsite productivity.



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- 3XL (252B-3X)

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- Large (401G-L)
- X-Large (401G-XL)
- 2XL (401G-2X)
- 3XL (401G-3X)



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## ClearSpan Introduces New Fabric House Building



ClearSpan Fabric Structure's new Fabric House Building is an updated design of a ClearSpan classic. The structure utilizes the frame from the Hybrid Building, but covers it completely in fabric. While customers could traditionally customize the Hybrid Building with fabric, the Fabric House Building will allow ClearSpan to get the building to customers faster.

The Fabric House Building features a peaked roof and overhanging eaves that provide extra outdoor coverage. The sidewalls are available in heights of 13' or 20', ensuring plenty of clearance for any application. The unique design, combined with multiple foundation options, ensures that each building can be quickly installed without sacrificing strength or durability.

The building is constructed using a dependable, American-made steel frame. The frames have been triple galvanized, so they can resist corrosive environments. The frame is covered with 12.5 oz., 24 mil polyethylene. The fabric polyethylene features a rip-stop weave that prevents any tearing or damage. The fabric allows natural light to filter through, eliminating the need for artificial daytime lighting.

Like other ClearSpan buildings, the Fabric House Building comes with industry-leading warranties.

[www.CLEARSPAN.com](http://www.CLEARSPAN.com) •

## Allen Debuts New AR16 Wheel Buggy

Allen, a leader in contractor tough site prep and concrete finishing equipment, announced the debut of their new AR16 propane-powered wheel buggy. It is a great solution for contractors working in confined areas or indoors.

The AR16 propane-powered buggy comes equipped with a factory-installed, environmentally-friendly propane system that is perfect for helping avoid job stoppages or potential fines due to air quality regulations. The system produces cleaner emissions, less than 1% carbon monoxide, making it compliant with OSHA, CARB and EPA standards.

Thanks to the closed fuel system, engine components will run cleaner with less wear and tear which will result in less maintenance. Plus the use of propane allows equipment to reliably operate without carburetors getting gummed up due to the ethanol found in gasoline.

With typical propane conversions, there is a fear of loss of power, but with the Allen AR16 Propane Buggy the power and load are unchanged compared to its gasoline-powered counterpart.

[www.alleneng.com](http://www.alleneng.com) •

## The New Bosch GSA18V-083B 18V Reciprocating Saw

When the job at hand is demolition and rough cutting, speed and convenience are as important as power. And that's where the Bosch GSA18V-083B 18V Reciprocating Saw offers great power-to-weight ratio to get the job done right – from overhead cutting to working on conduit or pocket cuts.

The Bosch GSA18V-083B reciprocating saw is lightweight, coming in at 5.5 pounds with a compact length of 15-3/4 inches. Yet it still delivers an efficient .83-inch (21 mm) stroke at up to 3,000 strokes per minute. The tool is designed with a variable-speed trigger so trade professionals, including electricians and carpenters.

The saw's economical .83-inch (21 mm) stroke length means optimum material removal per stroke and less vibration, making it ideal for cutting conduit and pipe. The saw provides an ergonomically shaped handle with a soft-grip zone to ensure a secure hold and minimized user fatigue.

[www.boschtools.com](http://www.boschtools.com) •

## Mack Trucks Showcases Mack LR Retrofitted with Wrightspeed Route 1000



Mack Trucks showcased a Mack® LR® model retrofitted with the Wrightspeed Route™ 1000 powertrain in its booth at WasteExpo 2016. Mack is the first OEM to evaluate Wrightspeed technology within a Class 8 refuse vehicle.

Designed as an alternative driveline, the Wrightspeed Route is a range-extended electric vehicle powertrain that helps reduce fuel consumption and vehicle maintenance costs.

"Mack is the refuse industry leader because we're constantly seeking to pioneer new ideas and innovations," said Dennis Slagle, president of Mack Trucks. "It's something we've done throughout our 116-year history, and it's something we will continue to do. Wrightspeed shares this pioneering spirit, which is why we're eager to evaluate their Route powertrain technology."

The Wrightspeed Route powertrain uses electricity to deliver 100 percent of the vehicle's propulsion. The system features an advanced plug-in-capable battery pack that enables a purely electric range of up to 24 miles. When the batteries' charge is depleted, an 80 kW, fuel agnostic Fulcrum™ Turbine Generator, which can operate on natural gas or diesel fuel, recharges the batteries, enabling Route-equipped vehicles to have unlimited range with refueling.

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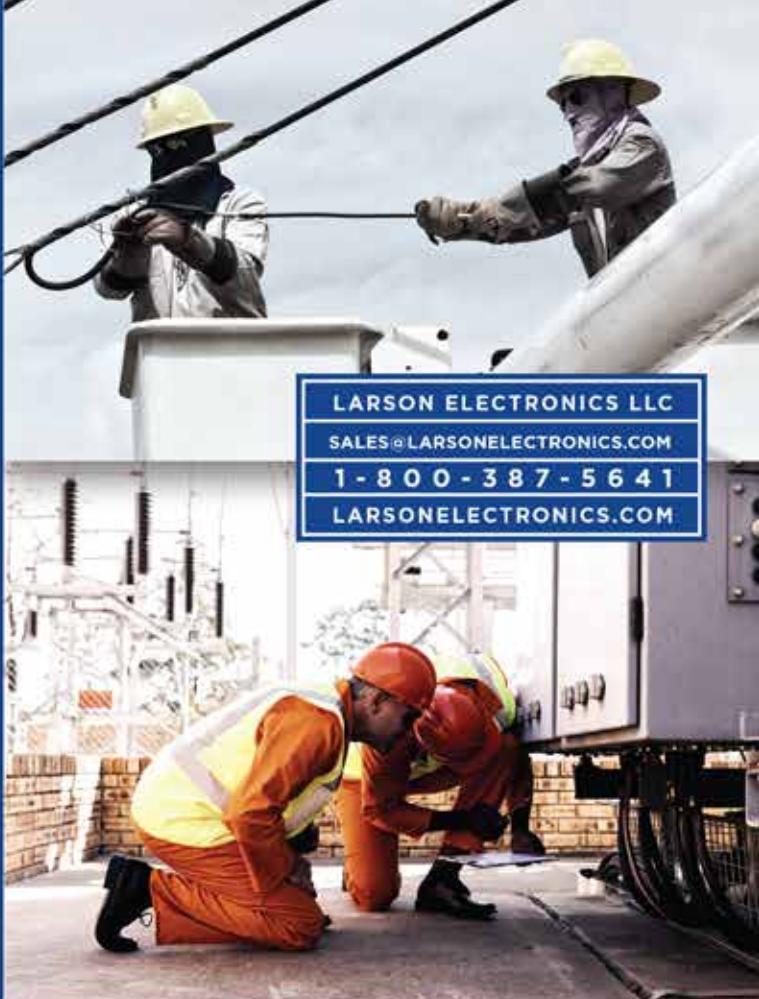
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