

December 2022

THE MOST UNIQUE AND RELIABLE RESOURCE FOR TODAY'S ELECTRICAL CONTRACTOR

THE ELECTRIC CURRENT

Electronic Chip
Shortage Solution:
Look to the
Independent
Channel

**Top Research Institutions
Try to Unlock 6G**

BUILT FOR EVERYTHING THAT'S ON THE LINE

HUSKIETOOLS.COM

SINCE 1976

FREE OFFER - CONTACT US:
POWER@HUSKIETOOLS.COM

HIGH-PERFORMANCE
UTILITY LINEMAN
TOOLS & EQUIPMENT



THE INDUSTRY'S #1 POWER UTILITY SOLUTIONS BRAND

OVER
200
CHOICES

BATTERY
POWERED
HYDRAULIC
CUTTING &
COMPRESSION
TOOLS



SLC-RL760YC

BATTERY PLATFORMS:
MILWAUKEE®
MAKITA®
HUSKIE®

6, 12 & 15 TON
COMPRESSION TOOLS
CUTTING TOOLS HANDLE
UP TO 2515 ACSR,
5" CU/AL, 5/8" GUY WIRE,
GROUND ROD, BOLTS,
& WIRE ROPE

NEW
JAWS



21 HAND POWERED HYDRAULIC
CUTTING & COMPRESSION
MANUAL TOOLS

INCLUDING:
6 & 12 TON COMPRESSION TOOLS
FOR W, K, U-TYPE DIES & 4-POINT
DIELESS HEADS. CUTTING TOOLS
FOR ACSR, CU, AL, GUY WIRE, EHS,
GROUND ROD, BOLTS, & WIRE ROPE



22 REMOTE HEADS
CUTTING and
COMPRESSION



60 TON
100 TON
200 TON
PRESSES



SINGLE ACTING
DOUBLE ACTING
STEEL, TITANIUM



12 HIGH-PRESSURE PUMPS
BATTERY POWERED,
ELECTRIC & GAS PUMPS;
HIGH-PRESSURE HOSES
& FITTINGS

ANNOUNCING
NEW HUSKIE TOOLS
HTPZ PROLINE
BATTERY POWERED
PUMP SERIES



DIES &
DIE KITS OVER
200
CHOICES

BURNDY EQUIVALENT:
W, U, P, L, & CSA DIES
KEARNEY EQUIVALENT:
D, WH-2, WH-3 DIES
ALCOA EQUIVALENT:
60 & 100 TON DIES
WIRE ROPE DIES



12
TIGER POLE
PULLER &
MATERIAL
HANDLING
PRODUCTS



TIGER
BY HUSKIE TOOLS

HUSKIE TOOLS
CARRIES THE
INDUSTRY'S
MOST POPULAR
CABLE GRIP
SIZES



LEARN MORE



Huskie Tools is not affiliated with, authorized or endorsed by Milwaukee Electric Tool Corporation. Milwaukee brand batteries and chargers are owned by Huskie Tools. Milwaukee® and "MILWAUKEE" are registered trademarks of Milwaukee Electric Tool Corporation. Huskie Tools® is not affiliated with, authorized or endorsed by Makita Corporation. Makita brand batteries and chargers are owned by Huskie Tools. Makita® and "M" are registered trademarks of Makita Corporation.

REPAIR CONDUIT IN A SNAP!

- No Tape
- No Plastic Straps,
- No Metallic Straps

NO KIDDING!

**Designed especially for
power, communications,
and fiber optics**



"The World Leader In Split Conduit Products"



Conduit Repair Systems, Inc.

The World Leader In Split Conduit Products

800-670-1804

fax: 435-673-8724

email: crs@conduitrepair.com



**Step 1: Remove
Damaged Conduit**



**Step 2: Cut Split
Duct Conduit to Fit**



**Step 3: Snap in
Place**



**Step 4: Attach
Adapters**



**Step 5: Finish Job
in Record Time**

Please Visit Our Website at WWW.CONDUITREPAIR.COM

PG 4	Top Research Institutions Try to Unlock 6G
PG 12	Huskie Tools Introduces the Next Evolution of Battery Powered Cutting & Compression Lineman Tools – the SLC Series
PG 16	Electronic Chip Shortage Solution: Look to the Independent Channel
PG 24	Ad Index



Pg 16

Get Cool!



Extend transformer life!

Increase transformer capacity up to 166%!

- expert technical assistance
- low sound levels
- energy-efficient motors
- large inventory
- one-piece cast aluminum blades
- galvanized or stainless steel guards



quality engineered, performance tested

p.o. box 187 germantown, wisconsin 53022 262.355.3218 www.krenzvent.com



Vol. 22 Issue 12

PRESIDENT

Glen Hobson
205-441-5591
glen@handfmedia.net

ASSOCIATE PUBLISHER

Steven Goodwin
205-624-2181
steve@handfmedia.net

ADMINISTRATIVE DIRECTOR

Steven Hobson
steven@handfmedia.net

EDITOR

Brandon Greenhill
brandon@handfmedia.net

CREATIVE/ WEB DIRECTOR

Jacklyn Greenhill
jacklyn@handfmedia.net

P.O. Box 1568 • Pelham, AL 35124
Phone: 205-441-5591 • Fax: 205-624-2181
www.theelectriccurrent.com
info@theelectriccurrent.com

SDP
*Southern Digital
Publishing*

The Electric Current™ is published twelve times a year on a monthly basis by Southern Digital Publishing, Inc. *The Electric Current™* 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.

The Electric Current™ is distributed to qualified owners and managers in the electrical industry. Publisher is not liable for all content (including editorial and illustrations provided by advertisers) of advertisements published and does not accept responsibility for any claims made against the publisher. It is the advertiser's or agency's responsibility to obtain appropriate releases on any item or individuals pictured in an advertisement. Reproduction of this magazine in whole or in part is prohibited without prior written permission from the publisher.

POSTMASTER: Send address changes to
Southern Digital Publishing, Inc. P.O. Box 1568
Pelham, AL 35124
PRINTED IN THE USA

"As a safety professional, you always want your workers to have access to leading edge safety tools that improve safety and focus.

Working with **COOLSHIRT SYSTEMS** over the past two years allowed me to help design a tool **by lineman for lineman.**

The **A.R.C. Hybrid Cooling System** by **COOLSHIRT SYSTEMS** allows lineman to remain more focused and less fatigued by reducing their core body temperature in extreme environments, therefore reducing the possibility of unintended accidents."

-James "Jim" Bonner
Compliance Coordinator- Retired
Alabama Power



A.R.C. Hybrid Cooling System

Complete Arc Rated Portable Cooling Solution

Developed in conjunction with major power companies for use in extreme heat conditions, the **A.R.C. Hybrid Cooling System** uses liquid cooling to reduce fatigue, injury, and heat stress related illness.

Designed specifically for use by linemen, the **A.R.C. Hybrid Cooling System** features a compact design with a custom woven strap mounting system. The use of S-hooks offers the versatility of mounting inside or outside of the bucket.

Designed with portability in mind, measuring **6" x 6" x 20"** and weighing in at **less than 10 lbs dry**. The unit is entirely self-contained and built to last with a 20,000 hour pump.



A.R.C. Hybrid Cooling System
2002-0017



COOLSHIRT
TEMPERATURE CONTROLLED GARMENTS



Top Research Institutions Try to Unlock 6G

Academia is attempting to resolve the issues surrounding 6G, but a deficiency of mmWave-capable components could delay the next leap forward in wireless communications

While the rollout of 5G is still in its infancy, bleeding-edge research around the world is now heavily focused on solving a significant problem that is expected to arise within the next few years. Antenna-to-antenna links or the “backhaul of the network” are essentially limited to frequencies under 100 GHz. However, experts are predicting that by around 2025 these lower frequencies, under 80 GHz, will no longer be enough to support the evolution of 5G or 5G plus, especially within densely populated areas.

“For 5G networks, at some point, every user will expect to have at least 1 GB/s or higher,” says Dr. Guillaume Ducournau. “So, if you’re running 5G in a crowded place, like a commercial center or a big city, we have to be able to manage the huge data rates at the antenna collecting point.”

Dr. Ducournau is a professor at Université de Lille in France and a top academic researcher in THz communications. He has authored over 100 peer-reviewed papers published in international journals and developed several experimental setups dedicated to the characterization of THz devices for communications in the Lille THz communication cluster.

“Currently there is a dearth of components capable of operating in excess of 100 GHz and then even fewer when you push into the THz regime where 6G is expected to excel,” continues Dr. Ducournau. “So, unless the industry can come up with better components the problem is going to grow exponentially.”

6G is not yet a functioning technology but will deliver data rates that are 100 times faster than 5G and shift from primarily connecting people and things to connecting intelligence. Connected Robotic and Autonomous Systems (CRAS), Unmanned Aerial Vehicles (UAVs), artificial intelligence, and even remote robotic surgery. However, without resolving the issue of working at millimeter wave (mmWave) and THz frequencies, 6G could be greatly delayed.

“There is an urgent need right now to develop components, devices, testbeds, and concepts to operate at higher frequencies because, by 2030 or so, 6G will require these things,” says Dr. Ducournau.

Pushing towards THz components

The issue with creating components at frequencies above 100 GHz comes down to physics.

As you move up the electromagnetic (EM) spectrum the wavelengths get shorter. In fact, at a frequency of 300 GHz, the wavelength shrinks to just one millimeter. At these higher frequencies, the constituent parts are tiny and even small alignment errors can significantly degrade performance.

At such a small-scale, available power and device power handling become a big challenge. Therefore, components at these frequencies must operate with exceptionally low insertion loss and extremely high performance to allow engineers to develop effective signal chains.

In addition to sufficient device power handling, high isolation between active components becomes of critical importance to minimize signal degradation and potential device destruction from signal reflections between components.



PENN ALUMINUM CONDUIT & EMT

A Marmon / Berkshire Hathaway Company

Aluminum EMT *The Smart Choice*



Lower Cost



Reduced Labor



Lighter Weight



Easier Fabrication



Superior Appearance



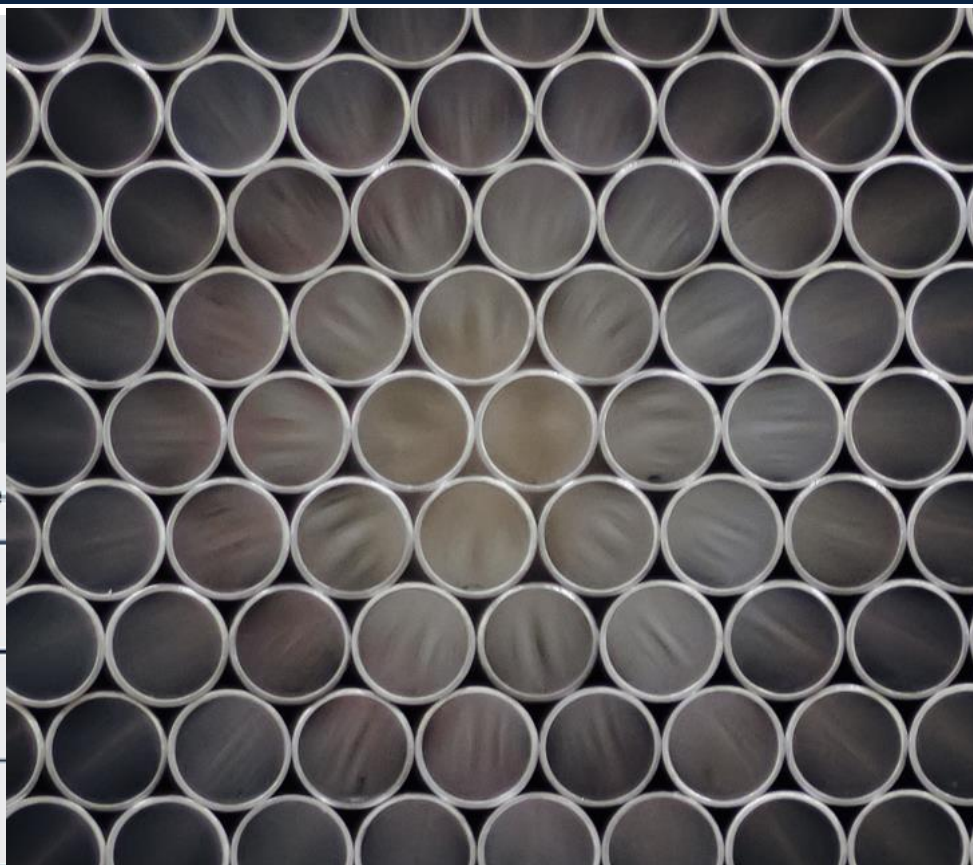
Enhanced Safety



100% Recyclable



Non-Corrosive



The benefits of Penn Aluminum conduit products result in overall electrical project savings, jobsite worker safety and valued environmental sustainability, making them *the smart choice* in the competitive electrical industry.

As part of Marmon Holdings, Inc., a Berkshire Hathaway Company, Penn Aluminum Conduit & EMT carries on the proud 100-year history of Penn Aluminum - a premier manufacturer of aluminum tubing serving critical American Industries.

Proudly Serving America's Heartland



Penn Aluminum Conduit & EMT
1117 North Second Street • Murphysboro, IL 62966
800-445-7366
www.pennconduit.com



For example, Faraday rotation isolators – more commonly referred to simply as isolators – are two-port components that allow EM signals to pass in one direction but absorb them in the opposite direction. Isolators are often used in communication systems because they do a good job of suppressing standing waves.

“Isolators have low insertion loss within the microwave bands, but at mm-wave frequencies, where we were working at, the loss becomes increasingly problematic,” explains Dr. Ducournau.

A boost for mmWave components

“After doing significant research a few years ago, I discovered NASA had awarded a project to Micro Harmonics to develop mmWave isolators all the way to 300 GHz, and they showed very good performance,” recalls Dr. Ducournau. “I immediately called them up.”

Micro Harmonics Corporation (www.MicroHarmonics.com) specializes in components for mmWave applications and successfully developed an advanced line of commercial off-the-shelf (COTS) circulators, isolators, and hybrid circulators, many of which can operate well into the THz regime.

Professor Ducournau selected an isolator that operates with WR-3.4 (220-325 GHz) and features a large usable

bandwidth of dozens of GHz on either side of the center frequency.

“This allowed us to get the first-ever device characterization of a low noise amplifier operating at 300 GHz,” states Dr. Ducournau.

His research team successfully characterized the noise floor (NF) along with the IP3 and IP5 of the amplifier, which are measurements of nonlinear frequency performance.

In addition to isolators, “there’s also a need for circulators at these very high frequencies,” explains Dr. Ducournau. “Circulators form part of the core system for communication applications but also for radar. Having these available could be a big boost for system implementation of early prototypes.”

For example, a new hybrid circulator recently developed operates in the 100+ GHz range which will be crucial to solving many of the 6G bottlenecks within the backhaul of the network.

The hybrid circulator has a much larger working bandwidth from 150 GHz to 190 GHz. The current state-of-the-art Y-junction circulator has a bandwidth of only a few GHz at these frequencies. The bandwidths required for 6G are not remotely possible using a Y-junction approach.



**TVINTIER®
RB611T**

**TAKE TYING
REBAR TO
CONDUITS
TO THE
NEXT LEVEL!**

- COST SAVING
- SHORTER TIE HEIGHT
- LONG LASTING BATTERY
- LARGE JAW SIZE TO TIE CONDUIT TO REBAR
- FIVE TIMES FASTER THAN HAND TYING

**COMMON CONDUITS:
RMC • IMC • EMT • ENT
FMC • LFMC • RIGID PVC
TIE CONDUITS TO MESH & CHAIRS**

MAX *ENGINEERED FOR PERFORMANCE*

**80 YEAR
ANNIVERSARY**

**SCAN TO
WATCH VIDEO**

MAX USA Corp. • 205 Express St. • Plainview, NY 11803 • U.S.A. • Phone: (800) 223-4293 • FAX: (516) 741-3272 • www.maxusacorp.com

RESA POWER™

Reliable and Safe. The Power of Us.



SCAN ME

TRANSFORMER SERVICES,
ASSEMBLY, COIL REWINDING,
OIL TESTING LAB & PORTAL

BROAD INVENTORY OF
ELECTRICAL EQUIPMENT &
COMPONENTS INCLUDING
OLDER VINTAGE & HARD-TO-FIND

ACCEPTANCE TESTING,
MAINTENANCE & REPAIR SERVICES



resapower.com

RESA Power is the premier national
provider of mission-critical
power system solutions.

ELECTRICAL CONTRACTOR SUPPORT SERVICES BY RESA POWER

RESA Power's suite of electrical contractor support services and products provides our customers with the assistance they need for new and existing electrical system solutions. Contact us today to learn how we can help you achieve the goals of your next project.

www.resapower.com



Network with us on LinkedIn and follow us on social media as we routinely publish the most recent company news, share best practices, post open jobs, and more.

JOIN OUR TEAM

WE ARE HIRING!

WWW.RESAPOWER.COM/CAREERS

#RESAPOWER #WhyWorkAtRESA #ThePowerOfUs

"Looking at the D-band development for backhauling, such devices would be very useful as duplex links targeted in such applications," says Prof. Ducournau.

A small footprint

Simply attaining higher frequencies is not the only consideration when moving new research from the lab to commercial production. An overriding theme in commercialization is the drive to reduce the size, weight, power, and cost (SWaP-C) of components.

Minimizing the size and weight of mmWave components is especially important in today's wireless applications. A standard traditional-style isolator in the WR10 band is about 3 inches long, with a cylindrical section in the center that's about 1.3 inches in diameter. While that may seem small, new designs are only 0.75 inches per side and 0.45 inches thick and are packaged in a designer-friendly rectangular cuboid.

These types of improvements in commercial components, along with leading researchers in the field, are pushing towards widespread commercial 6G technologies potentially by the end of this decade.

Unlocking new technologies

Of particular interest to Professor Ducournau is the


development of remote, robotic surgery where a very low time-latency transmission system would be required. This is where the development of new components for systems with 6G speeds and high-reliability low latency communications are opening the door for the world's best doctors to perform operations on people anywhere on the planet.

"If the energy consumption is low and the devices can be mass produced at low cost, the possibilities for new techniques for medical procedures would be endless."

The technical challenges to implementing 6G systems are enormous. There is a good chance that the push to higher frequencies will halt near this point due to the practical limits of physics, health and safety.


"There is a strong argument to stay within the mmWave or lower THz frequencies because these wavelengths keep the radiated power densities within the bounds of what most people consider safe," concludes Prof. Ducournau.


For more information contact Micro Harmonics: 540.473.9983, sales@mhcl.com, or visit www.MicroHarmonics.com



All New, Best-In-Class

3-PHASE SURGE PROTECTIVE DEVICES





MODELS	PHASE	VOLTAGE	SPD TYPE	AGENCY	ENCLOSURE	MAX SURGE
ICM530	3-PHASE	DELTA 240VAC or WYE 120/208VAC	TYPE 1 & TYPE 2	UL LISTED	NEMA 4X RATED	150,000 AMP
ICM531	3-PHASE	DELTA 480VAC or WYE 277/480VAC	TYPE 1 & TYPE 2	UL LISTED	NEMA 4X RATED	150,000 AMP
ICM532	3-PHASE	DELTA 600VAC or WYE 347/600VAC	TYPE 1 & TYPE 2	UL LISTED	NEMA 4X RATED	150,000 AMP
ICM533	3-PHASE	DELTA HIGH-LEG 120/240VAC	TYPE 1 & TYPE 2	UL LISTED	NEMA 4X RATED	150,000 AMP

View all ICM single & three-phase Power Protection Products @ www.icmcontrols.com

Upgrade your building wire.



Artist rendering of Copperweld®
Building Wire Products



Theft Deterrent

Metallurgically bonded conductor lowers scrap value, reducing theft incentive.



Code Compliant

NEC Compliant for 600 Volt branch circuit conductors since 1972.



Cost Stable

Reduced exposure to commodity fluctuation, improving your bottom line.



Energy Efficient

Better energy efficiency than standard branch circuit wiring.



Safety Tested

Listed by UL and ETL to industry safety standards per OSHA.



Performance Proven

50 years of safe use with standard circuit components.



Learn More

Copper where it counts™

Contact us for sales and info:

615-777-8595

buildingwire@copperweld.com

copperweld.com



SYLVANIA Outdoor Luminaires

Light your way to safety and savings

SYLVANIA UltraLED™ CCT Selectable Wall Packs, UltraLED Mini Wall Packs and the ValueLED™ Area Light are environmentally preferable LED alternatives to conventional luminaires. Available in several wattage/lumen packages, these outdoor luminaires offer up to 74% energy savings. Ideal for building exteriors, outdoor corridors, walkways, stairwells and parking lots. All backed by a 5-year warranty.

LEDVANCEUS.COM





SYLVANIA LED Lamps and Fixtures Light the Way for Portland Transit Services

Providing bus, light rail, and commuter rail transit services to the Portland, OR metro area since 1969, the TriMet transit system has been connecting people with their community, easing traffic congestion, reducing air pollution, and enhancing lifestyles in and around Portland for over half a century.

Serving between 1-2 million riders weekly, the leading transit system has also long been on the forefront of sustainability, as demonstrated by such progressive initiatives as its fleet of 'MAX' electric buses fully powered by renewable energy, as well as its solar panel installations, eco-track project, and investment in the emerging field of regenerative braking.

Thousands of older HID and fluorescent lamps illuminated the many bus and rail garages, yards, and parking lots where TriMet bus and rail vehicles came for repairs, maintenance, engine rebuilds, and body work, and where drivers came to receive their assignments. "We underwent an annual inspection in 2020 at our central bus yard and were informed that we needed to enhance the fasteners in our fixtures to make them code-compliant," shared Karen Powell, TriMet's Director of Facilities Management. "In addition to creating dark spots in our space, our lights were difficult to access and maintain, requiring the scheduling of a bucket truck and the rearrangement of transportation operations. We realized it made no sense to fix those aging fixtures," she said. "We knew that an upgrade to safe, high-quality, and energy-efficient new LED lighting technology would benefit our employees, passengers, and community members alike."

The \$2.4 million upgrade project kicked off September 2020, covered 585,000 square feet of TriMet space, and involved the installation of approximately 10,000 LED products, with around 70% of them being SYLVANIA LED lamps and fixtures from LEDVANCE. The new lighting design involved everything from SYLVANIA LED retrofit strip kits to exterior area lights, wall packs, wide body vapor tights, and linear high bay systems in TriMet's wash bay and fuel house.

"The safety and comfort of our employees is paramount and our new SYLVANIA LED products have delivered everything from improved productivity and safety to reduced energy consumption and better-quality lighting – all of which have truly transformed our space. Our team has commented on how the new lighting has made them feel even more positive in their workspaces. We have also seen a reduction in trespassing incidents due to the improved lighting," TriMet's Powell confirmed.

Visit LEDVANCEUS.COM to learn more.



Huskie Tools Introduces the Next Evolution of Battery Powered Cutting & Compression Lineman Tools – the SLC Series

Chicago Based Tool Innovator Creates Advanced Lineman Tools on popular Milwaukee® and Makita® Battery Platforms

Huskie Tools, LLC, located just outside of Chicago, Illinois has built their over 45-year reputation for designing and manufacturing the highest quality and safest battery-powered, hydraulic utility linemen tools in the industry. Huskie Tools offers a new streamlined SLC battery powered lineup, the next evolution in precision cutting and crimping tools.

SLC BY HUSKIE TOOLS – AN EVOLUTION IN BATTERY POWERED HYDRAULIC CUTTING & COMPRESSION TOOLS FOR UTILITY LINEMAN

“At Huskie Tools, it’s our mission to build and deliver the industry’s most innovative tools that exceed the demands of linemen. We know they work in tough conditions – overhead through storms and underground in the dark. We took those difficulties into account when developing the new SLC line. Compact and ergonomic with an industry-only selectable 360° LED light ring, the new compact SLC tools will weather the storms with maximum reliability, durability and safety,” stated Nicholas Skrobot, CEO, Huskie Tools.

YOUR JOB IS TOUGH — YOUR TOOL CHOICE IS EASY

Huskie Tools focus for over 45 years has been developing and building the best-performing, most durable, dependable, and safest line of cutting and compression tools for linemen in the utility industry. “We have the experience, knowledge and resources to engineer the best and safest hydraulic tools in the industry. I’m proud to be part of such a talented product team launching the SLC line. This line has incredible new features such as the 18V brushless motor to provide longer life, electronic switch for maximum reliability and durability and ease of use, and an industry first, our 360° LED light ring for working in dark areas and EVS jaws with improved performance and longer life. This is what linemen need, and this is reason we are the #1 choice of experienced linemen,” explained Dan Voss, Product Development Director and 30-year Huskie Tools veteran.

FIRST TO INTRODUCE BATTERY-POWERED TOOLS

Huskie Tools introduced the industry’s first line of battery-powered hydraulic cutting and compression tools in 1989, and today offer over 190 battery-powered tools on three leading battery platforms: Makita®,





Custom Insurance for the Construction Industry

With XINSURANCE, You Get...

- > All-In-One Approach
- > Agent Friendly
- > Limits up to \$10MM
- > Property & Casualty
- > Professional Liability
- > Commercial Auto Liability
(available in most states)
- > Products Liability
- > Exclusions/Gaps in
Current Coverage & More

Ask us
about our new
coverage option –
Communicable
Disease
Liability



To get your free
custom insurance
quote for the
construction industry,
visit www.xinsurance.com

You can also contact
Logan Fitzgerald directly at
801.304.5562 or
loganf@xinsurance.com

XINSURANCE is powered by Evolution Insurance Brokers, LC ("EIB"), an excess and surplus lines insurance brokerage. XINSURANCE is a DBA of EIB, which is domiciled in and has its principal place of business in Sandy, Utah. This insurance product is offered by an unlicensed surplus lines insurer. The NPN for EIB is 5464658 and CA license number is OH93938.

XINSURANCE

Huskie Tools®, and Milwaukee®. We also have a full line of manual tools, presses, dies, and pole pullers -- no one in the industry has a deeper, wider utility industry product solution offering than Huskie Tools. We know what it's like to use our tools in a driving rainstorm with thousands of families depending on you to restore their power. Or to have to twist and contort your body just to access an underground area that needs repair. That's why we continue to offer battery-operated hydraulic tools, such as SLC, that are among the fastest, and most ergonomically designed and balanced on the market today," stated Charlie Kelly, VP, Sales.

ABOUT HUSKIE TOOLS, LLC

Born in Chicago over 45 years ago, Huskie Tools is a full-service company and proven leader in providing utility industry linemen a complete range of product solutions including battery-powered cutting and compression tools, presses, pumps, dies, manual tools and the TiiGER pole puller for all distribution, substation, transmission, overhead and underground utility projects.

FOR MORE INFORMATION: HUSKIETOOLS.COM

Dan Voss, Engineering, Product Development Director, dvoss@huskietools.com, 630-485-2253

Greg Holmes, Marketing Director, gholmes@huskietools.com, 630-267-7595

**NOTE: Huskie Tools is not affiliated with, authorized, or endorsed by Milwaukee Electric Tool Corporation. Milwaukee listed batteries and chargers are being re-sold by Huskie Tools. Milwaukee® M18™ REDLITHIUM™ are registered trademarks of Milwaukee Electric Tool Corporation. Huskie Tools is not affiliated with, authorized, or endorsed by Makita® Corporation. Makita® listed batteries and chargers are being re-sold by Huskie Tools. Makita® and LXT® are registered trademarks of Makita® Corporation.*

WWW.HUSKIETOOLS.COM •



**Vivax-Metrotech products,
Your One Source for
Damage Prevention and
Video Inspection Products.**

3251 Olcott Street,
Santa Clara, CA 95054, USA
+1-408-734-1400
SalesUSA@vxm.com
www.vivax-metrotech.com



1-800-446-3392
Call us for a no obligation on-site demonstration!



vLoc3-Pro Utility Locator
The choice of professional contract locators



vCamMX
All-in-one inspection camera for 2 to 4" pipes



RTK-Pro Line Locator with RTK GNSS
A line locator with GNSS accuracy for surveying and mapping



VM-510FFL+/VM-550FF
Cable Locator and Sheath fault locator



***Making perfect
connections has
never been simpler.
In fact, now it's a
SNAP!***

NEW ***SNAP Connectors*** from Greaves. A revolutionary compression connector concept that gets the job done with just a few turns of a standard wrench!

- ▶ Time-saving, easy installation
- ▶ Superior pull-out strength and conductivity
- ▶ No bulky and costly tools and dies



GREAVES



Electronic Chip Shortage Solution: Look to the Independent Channel

Independent distribution channels offer quality and decades of experience, providing manufacturers of automobiles the electronic chips they need to keep production running

Supply chain shortages have become a global issue in recent years, adding a stubborn wrinkle to the fabric that keeps the economy humming. One shortage that has plagued the automotive industry since 2018 is the shortage of electronic chips. In automobiles, chips control many of the features of a car, from heated seating to Wi-Fi hotspots, and without them, manufacturing cannot continue at the level consumers expect.

Supply chain disruptions are nothing new; they have become something electronic parts distributors have come to expect. With low-cost components in chronic shortage and extended lead times for delivery, manufacturers are considering the use of independent distributors to get parts on-time at the lowest possible cost without assuming additional risk.

For many companies, sourcing parts from the independent channel requires a significant shift in mindset.

"Some companies make the decision to place orders with independent distributors the very first day they are in operation because they understand our market and how we operate in it," explains Mike Thomas, vice president and general manager at Classic Components, a premier independent stocking distributor of electronic components based in Torrance, Calif. "But there is an equal number of companies that are hesitant because the chip-makers and franchise distributors have invested millions over the years to de-incentivize their customers from going to the open channel. And I understand that,"

Classic Components has been in business for over 40 years and remains one of the only premier independent distributors that is family-owned. The company's maturity and resources allow it to deliver high quality products with shorter lead times than many of its competitors. In fact, the company can usually deliver parts in two to three weeks that the OEM or authorized distributors may not have access to for 52 weeks or longer.

Keeping Automotive Manufacturing Running

At the beginning of the pandemic, automotive suppliers estimated a decline in consumer interest in purchasing a new vehicle and adjusted their projections accordingly. Chip manufacturers then followed suit, prioritizing other sectors such as consumer electronics as they anticipated a reduced automotive manufacturing capacity. However, demand for new vehicles exceeded expectations, leaving the industry with a demand it could not fill.

The accelerated demand for chips in the automotive sector is going to remain steady for some time, according to Thomas, due to the current backlog. This means the long-term prognosis for those manufacturing chips for automobiles is positive. And while things are beginning to slowly return to normal, at present, the price of hard-to-get components like chips has skyrocketed.

The shortage has led to major car manufacturers eliminating certain features in newly made vehicles because they are unable to obtain enough chips to ensure full functionality. This is where having an independent distribution plan comes into play.

"If you are a manufacturer, you need to have as part of your supply chain strategy an independent distribution plan," says Thomas. "How are we going to engage? We don't want to give a broker business and take it away from the franchisor/authorized distributors. But right now, we are the guys that can be strategic and can get parts that



work when you need them at a competitive price.”

Classic Components’ sourcing expertise includes knowing where to find alternate sources of component parts through surplus inventory, strategic relationships with other franchise/authorized distributors, and taking advantage of local and overseas markets.

Investigating Sources

One mistake that some companies make during the chip shortage is being duped by counterfeit products. It is an easy trap to fall into because the counterfeit items available today are impeccably made and almost impossible to distinguish from the real thing. Classic Components retains its competitive edge by taking a good, hard look into any company it wishes to purchase from to ensure both the company and its offerings are legitimate.

Thomas describes the situation like this: your company needs a part, but none of the major, trusted sources have it in stock for at least 52 weeks. What do you do? Most turn to the internet and search for a distributor who might have the chips needed in stock. However, it is easy to set up a website and pretend to have stock that does not exist. There is also serious financial motivation with chip prices skyrocketing to produce counterfeits.

“What happens when the online search produces a list of company names you have never heard of, how do you know which are legitimate and which are not?” asks Thomas. “We know all the players overseas. We have conducted rigorous audits and met many of the owners. We know which companies are legit and which should not be called. That is what we do.”



Line Guard | Pole Guard | BirdBloc
Learn More at [CritterGuard.org](https://www.CritterGuard.org)





SAFELY Lifts Up To 500 lbs!

- Ergonomic
- Portable
- Lightweight
- Meets OSHA & ASME Requirements

Customized Safety Lifting Devices For Any Application

Available in both
CHAIN & CABLE
Configurations



The Sky Hook is your personal safety lifting solution, preventing lifting injuries while saving you both time and money!

800-4-SKYHOOK

800-475-9466 • 208-365-5770

www.skyhookmfr.com



While it might be tempting to purchase a chip from a company you have never heard of that says it has them in stock, Thomas advises caution. "If [a reputable independent channel source] says, 'Sorry, there just aren't any of these chips available' and you have an unknown entity telling you they have the parts, it would be wise to listen," Thomas says.

An independent distributor can also offer supply chain management along with a rigorous quality inspection process to ensure the authenticity and quality of each component received. Classic Components, for example, utilizes a quality management system (QMS) and holds certifications such as AS9120B, a requirement for distributors serving the aviation, space, and defense industry.

"When the parts arrive, we know how to make sure they are good quality," says Thomas.

The process includes conducting a detailed risk profile for the customer that takes into consideration the known reputation of the vendor, the part, and the end use of the item. In addition, the customer is surveyed as to the requirements for age of the components (date

codes), traceability back to the factory, etc. In the case of Classic Components, the company has developed a scoring system to establish the risk involved in each transaction.

"The process of authentication is much more extensive for higher risk profile items to ensure the chips are legitimate and high quality," says Thomas. "There are a lot of steps, and it is very expensive and time-consuming but is critical when the product is a pacemaker, for example, and less so when it is a toy monkey banging symbols."

Unfortunately, for the foreseeable future, the automotive industry is expected to continue to experience significant supply chain disruptions. New technology for cars will also continue to increase the demand for chips, particularly in electric vehicles and internet-connected cars.

"Just as it did in 2018, the current chip shortage really reinforces the legitimacy of the independent channel," says Thomas. "We are literally helping to keep automotive manufacturers' production lines running in some cases."



Liteline

SLIMLED™MULTI

**MULTI-APPLICATIONS, SELECTABLE TEMPERATURE,
MULTI-COLORS, NOT SOLD SEPARATELY**

With the SLIMLED MULTI you can easily convert a standard Octagon Box into a recessed downlight.



Fire-rated when
installed in a fire-rated
Octagon Box



800.557.0098 | golight.com

GO LIGHT



DURABLE
VERSATILE



POWERFUL
GUARANTEED

**CIRCUIT IDENTIFICATION GOT YOU DOWN?
WHY NOT TRACE OUTSIDE THE BOX!!**

**INTRODUCING "CIRCUIT MAPPER"™
THE ULTIMATE IN CIRCUIT LOCATING
FROM TASCO**

Transmitter
Connects
at Panel



LED Readout
Indicates
Specific Circuit

**Additional Info / Orders
1-800-999-9952**

**Unconditionally Guaranteed
30 Day Trial Available!**

The Circuit Mapper™, model CMT42DS, is the only device of its kind that locates multiple branch circuits of wiring systems with a single transmitter and receiver!

- Determine which breakers are serving specific branches in seconds.
- Digital signal for utmost accuracy.
- Locate up to 84 branches concurrently. *with additional transmitter
- Save time and money by greatly reducing manhours.

TASCO, INC. • 2895 W. OXFORD AVE., #7 • ENGLEWOOD, CO 80110
(303)762-9952 www.tasco-usa.com

Classic Components isn't thinking simply in terms of the immediate future, either. Given the environment, some independent distributors have stopped stocking inventory and are demanding prepayment for components with rigid "no cancellation and no return" policies.

"We are not just here to sell a box of parts and take the money and run. We still stock components and maintain flexibility in our [financial] terms. We are here for the long haul and so we want to maintain our relationship with our customers well beyond the current shortage," says Thomas.

"When things start to return to normal and companies need to make decisions to reduce their independent distribution supply base, they are going to remember the ones who brought consistent quality and flexibility and helped them weather the storm," he adds.

For more information, contact Classic Components Corp. 23605 Telo Avenue, Torrance, CA 90505; www.classic-ic.com; 310.539.5500; info@classic-ic.com.

www.classic-ic.com •

VOLTEC
POWER & LIGHTING

L I G H T I N G

BETTER • BRIGHTER • STRONGER



LIGHTSTRINGS



HEXFLEX

0 - 45 - 90 Degree Positions



WORK LIGHTS



Visit Voltec at the 2022 NECA Show - Booth 2830





Los Angeles, CA

Always **250+**

Specialized Trucks & Equip.

Delivery Throughout the U.S.A.

800.896.2480

MONTHLY RENTALS AVAILABLE



**HOGG-DAVIS HP-650
Cable Pulling Trailer**

Stock # 14176-8



**FORD Diesel Champion
Cable Scraper
Hi-Speed Cable Removal**

Stock # 14181-8

**CHEVROLET Diesel
Texoma TX-245B Digger Derrick**

Stock #14319-8



**Sherman Reilly UnderDawg
Bull Wheel Puller**

Stock # 14549-8

www.alasher.com

Ad Index

Company	Pg.	Website
Asher & Sons	23	www.alasher.com
Conduit Repair	1	www.conduitrepair.com
Coolshirt	3	www.coolshirt.com
Copper Weld	9	www.copperweld.com
Critter Guard	18	www.critterguard.org
GoLight	21	www.golight.com
Greaves	15	www.greaves-usa.com
ICM Controls	8	www.icmcontrols.com
Krenz Vent	2	www.krenzvent.com
LANshack	24	www.lanshack.com
LEDvance	10, 11	www.ledvanceus.com
Lite Line	20	www.liteline.com
Maddox	BC	www.maddoxtransformer.com
Max USA	6	www.maxusacorp.com
Penn Aluminum	5	www.pennconduit.com
Protec	IBC	www.protecequip.com
Resa Power	7	www.resapower.com
Sky Hook	19	www.skyhookmfr.com
Tasco Inc	22	www.tasco-usa.com
Vivax Metrotech	14	www.vivax-metrotech.com
Voltec	22	www.voltec.com
X Insurance	13	www.xinsurance.com



Specializing in Custom Pre-Terminated Fiber Optic & Copper Ethernet Assemblies Since 1997!

www.LANshack.com

1-888-568-1230

sales@LANshack.com



MADE IN USA



ISO 9001

We Make IT Easy!

Fast Lead Times

- ✓ Any Fiber Type
- ✓ Any Jacket Type
- ✓ Any Strand Count

Your One-Stop-Shop for all your cabling and connectivity needs.



We Also Stock Premium Quality

- Fiber Optic Enclosures
- Fiber Optic Patch Cables
- MTP Cassettes
- Network Switches & SFPs
- Keystone Jacks & Modular Plugs
- Ethernet Patch Cables & Patch Panels
- Datacom Tools & Toolkits
- Network Racks & Cabinets
- ... and MORE!

NFPA 70E Training

Get Your Workers Certified to the 2021 Standard!

Approved for 20 NETA CTDs & Eligible for NICET CPDs!

Electrical Safety for the Qualified Worker training is aimed at qualified electrical workers to help them build capabilities, knowledge and safe work practices when working around energized electrical systems. Protec Equipment Resources now offers a live online instructor-led 2.5 day course that meets the NFPA 70E ® 2021 standard for electrical safety in the workplace!



Live Instructor-Led

People taking this class for the first time are required by the 70E 2021 standard to take it "live". Whether online or in-person, to be compliant, there must be interaction and engagement with an instructor.



Great Price

Less expensive than in-person programs, with more curriculum and volume discounts!



Strongest Content Offering

20 hours (2.5 days) of practical tutorial that includes grounding as a topic!



Conveniently Consistent and Flexible

Virtual live online classes at a known date and time every month! Enroll 1 or 30.



Reduces Travel Time and Costs

Minimize workers' time away from the office; eliminate the cost of travel and per-diems.



High Level of Instruction

Train with Tom Sandri, well-known in the electrical testing industry with over 30 years of experience. Tom was certified by a committee member and writer for the 70E certification.

FOR MORE INFORMATION

Scan the QR Code below with your phone's camera and click the link that appears



or visit

ProtecEquip.com/QEW

PROtec
EQUIPMENT RESOURCES



NETA
CORPORATE ALLIANCE PARTNER
Administratively Approved
Course Provider



Tom Sandri
Director of
Technical Services



Maddox is the one-stop shop for your transformer needs

Founded by a team of industry veterans focused exclusively on the transformer and transformer-related needs of industrial and commercial clients.



Sell

Maddox stocks and sells the highest quality transformers from dry types and padmounts to substations.

Rent

With thousands of units in stock, Maddox rents out transformers for the temporary power needs of customers across North America.

Repair

With shops on both coasts Maddox inspects, tests, and repairs transformers to ensure that they are in top working condition.

Purchase

We offer a great price that includes handling all the transportation and environmental issue.

1-800-270-2011

sales@maddoxtransformer.com

maddoxtransformer.com