

# INDOOR COMFORT

JUNE 2023

THE VOICE OF THE INDUSTRY  
**NEWS**

www.indoorcomfortnews.com

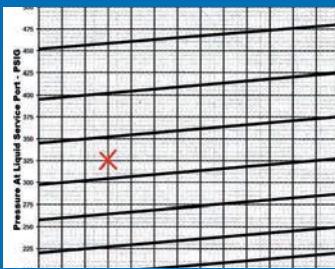
THE WEST'S LEADING MONTHLY NEWSMAGAZINE FOR THE AIR CONDITIONING, HEATING, REFRIGERATION, SHEET METAL AND VENTILATING INDUSTRIES



## Editorial Focus

What's new? What's been improved? Find out here as ICN takes a look at the latest offerings in Residential Cooling.

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## Troubleshooting

In this month's problem, the equipment is a gas pack that has been in service for six years.

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## Indoor People

ICN puts the spotlight on the movers and shakers in the heating and air conditioning industry.

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## Emerson to Buy National Instruments for \$8.2 Billion



Emerson, a global technology and software company, has agreed to purchase National Instruments Corp. (NI), a provider of testing and measurement tools, for about \$8.2 billion, or \$60 per share in cash.

The deal was announced April 12 and is expected to close in the first half of Emerson's 2024 fiscal year, which begins in October.

Based in Austin, Texas, NI provides software-connected automated testing and measurement systems. The company listed \$1.66 billion in 2022 revenue and operates in more than 40 countries, serving approximately 35,000 customers across the semiconductor, electronics, transportation, aerospace, and defense markets.

"We are pleased to reach an agreement with NI, whose best-in-class test and measurement product and software offerings accelerate Emerson's progress toward a cohesive, higher-growth and higher-

margin automation portfolio," Lal Karsanbhai, Emerson president and CEO, said in a press release. "With this expansion into test and measurement, Emerson will enhance its automation capabilities and gain a broader set of customers that rely on NI's solutions at critical points along the product development cycle."

Emerson already owns approximately 2.3 million shares of NI, representing approximately 2% of shares outstanding, which were acquired at a weighted average price of \$36.84. As a result, Emerson's effective per share purchase price is \$59.61, according to the press release.

"Over the past several months, we've been evaluating strategic options for the future of our business with the intent to maximize

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## Inside

## Industry Events

### NASRC Summit Prepares Technicians for Natural Refrigerant Technologies

Event in Irwindale, Calif. provides free training on the latest CO2 and propane systems.

The North American Sustainable Refrigeration Council (NASRC), a 501(c)(3) environmental nonprofit working to advance climate-friendly natural refrigerants in supermarkets, hosted the first-ever Natural Refrigerant Training Summit April 4 – 6, 2023 at Southern California Edison's (SCE) Energy Education Center in Irwindale, Calif.

The event convened over 350 participants – including trainers from 12 organizations and 250 technicians from over 50 service contractor companies – to prepare refrigeration technicians for the latest CO2 and propane technologies. A rotating schedule of 17 sessions gave technicians access to multiple trainings in one place. Session slides and recordings are now available for free viewing at [nasrc.org/training](https://nasrc.org/training).

"The event's success was beyond anything we could have imagined," said Danielle Wright, executive director of NASRC. "The enthusiasm and engagement were unmatched, and there is a clear demand for similar events around the country."



THE NORTH AMERICAN SUSTAINABLE REFRIGERATION COUNCIL'S FIRST-EVER SUMMIT DREW 350 PARTICIPANTS.

The summit included a networking session with nearly 100 students and faculty from lo-

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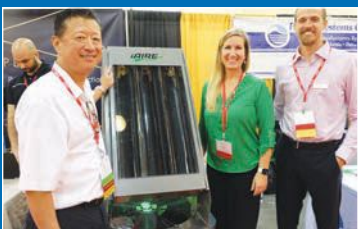
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More info, visit [www.IHACI.org](http://www.IHACI.org)



## IHACI 2023 Training Schedule

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See Pages 28–29  
for more details.

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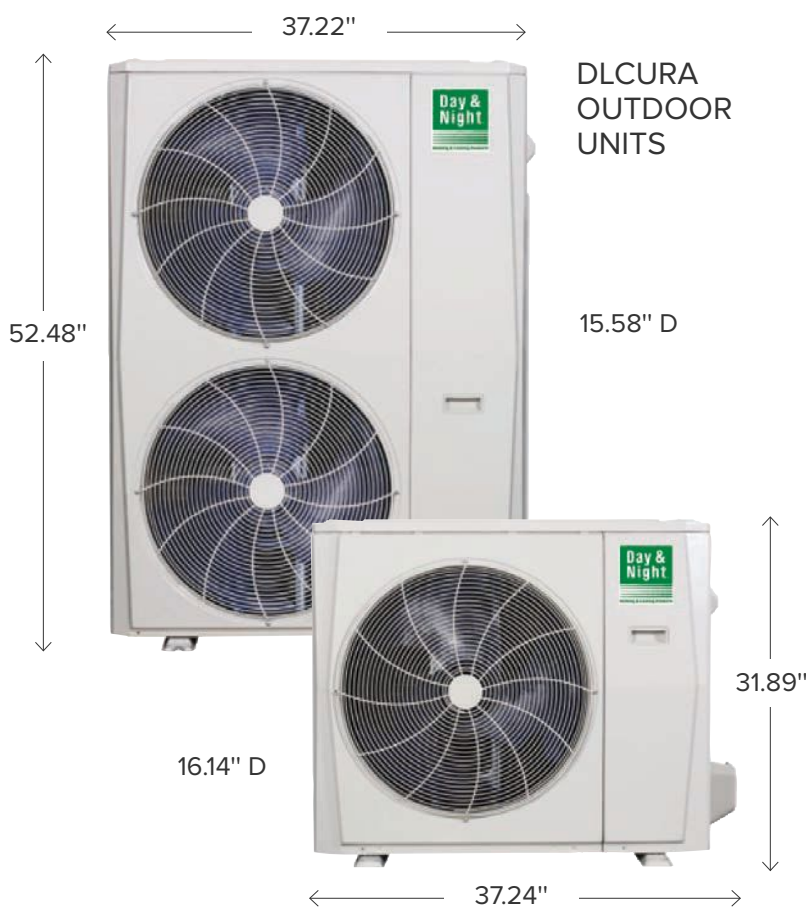
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**HP BUNDLE STARTING AT \$3,082\***

**14 SEER1 HP AND AIR HANDLER**

**STANDARD:**

- Trane TEM4 Multi-Position Air Handler 230V

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**HYBRID BUNDLE STARTING AT \$3,082\***

**14 SEER1 HYBRID H/P 80% FURNACE**

**HYBRID STANDARD:**

- Multi-Position Coil

**HYBRID ULN:**

- Multi-Position Coil



**A/C BUNDLE STARTING AT \$3,125\***

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**ULN:**

- Multi-Position 4TXC or 4MCA Coil



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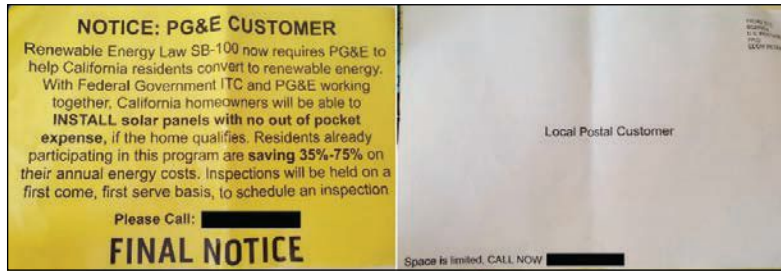
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## CALIFORNIA



FRAUDULENT ADS LIKE THE ONE ABOVE CAN BE FINANCIALLY DEVASTATING TO HOMEOWNERS.

### CSLB Warns Consumers of Fake Solar Ads

**Sacramento, Calif.** – The Contractors State License Board (CSLB) is warning consumers around the state about misleading and possibly illegal advertisements being distributed by way of door flyers, door-to-door salespersons, and direct mail. These advertisements could lead to solar and other contracting scams.

The scams often resulting from these types of advertisements can be financially devastating to homeowners. They usually involve contractors who use high-pressure sales tactics to convince homeowners to sign contracts for work they may not be able to afford, or under the pretext there will be no cost to them.

The photo above falsely implies that Senate Bill (SB) 100 requires the federal government and PG&E provide solar for consumers “with no out of pocket expense.”

SB 100 (among other things) requires renewable energy and zero-carbon resources supply 100 percent of electricity retail sales to end-use customers by 2045. SB 100 does not provide consumers with free solar.

Homeowners may lose thousands of dollars by entering into a contract for a solar system that is significantly overpriced, they cannot afford, or obtain a loan that pays the contractor directly for work that may not be performed or completed.

In response to this issue, CSLB recommends that consumers take the time to carefully research any contractor they consider hiring. They should check the contractor’s license status on the CSLB website ([www.cslb.ca.gov](http://www.cslb.ca.gov)) to be sure it is active and there are no pending complaints.

Consumers should also get at least three bids for any work they are considering, ask contractors for references, and never agree to contractual or lending terms that

are not in writing or they do not understand.

“Consumers need to be careful when considering any home improvement project, including solar installations,” said CSLB Registrar David Fogt. “It is important to take the time to fully understand the contract terms and any payment obligations to avoid becoming the victim of a scam.”

CSLB encourages consumers to report any illegal advertisements by filing an Advertising Complaint. CSLB also provides information to consumers considering solar on its Solar Smart page on the website.

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### EGIA Contractor University Expands Training Resources

**Sacramento, Calif.** – Contractor University, powered by EGIA, announced new plans to significantly expand its collection of on-demand training resources for contracting

businesses and their employees. Additionally, Contractor University will be taking its business training on the road this fall to deliver high-value workshops in five major U.S. cities.

The new online-based training content began with the release of a comprehensive on-demand learning management system (LMS) course on sales management during the month of May. This new course featured 34 individual video segments that together equate to over 10 hours of deep-dive training instruction on how to build, manage, and maintain a high-performing sales department within modern home services businesses.

Following the release of the sales management online course, Contractor University will launch its Seizing the Summer 2023 series on June 5. Seizing the Summer 2023, the third annual summertime training series from Contractor University, will run for 14 consecutive weeks and deliver weekly 20- to 30-minute training video segments from Contractor University’s trainers and business coaches. Each weekly segment will focus on specific topics related to overcoming the most common challenges of the summer busy season and/or how contracting businesses can fully capitalize on all of the opportunities the summer brings.

Three additional online LMS courses will be added to the Con-

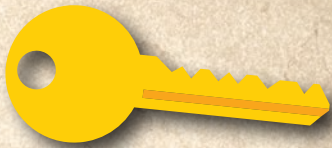
tractor University platform in September: In-Home Sales 2.0 - Execution: An Evidence-Based Process to Educate Homeowners for Optimum Experiences and Maximum Results (releasing September 2023); In-Home Sales 3.0 - Elevation: Skills and Strategies to Elevate the Consumer Buying Experience and Accelerate Sales Performance (releasing October 2023); and Design Principles for Residential Comfort Advisors (releasing November 2023). Each of these three courses, along with the new Sales Management course releasing in May and the existing In-Home Sales 1.0 course currently on the Contractor University platform, will fully round out the planned on-demand sales training curriculum for Contractor University members at [MyContractorUniversity.com](http://MyContractorUniversity.com).

“With the addition of these new online courses and Seizing the Summer, Contractor University members will continue to receive a steady flow of cutting-edge instruction on how to optimize their business practices within today’s evolving marketplace” said Bruce Matulich, CEO, EGIA. “We are delighted to have the opportunity to partner with some of the industry’s top experts and educators to deliver this fresh new content that will help our member businesses thrive.”

Last but not least, in addition to adding substantial new on-demand training content, Contractor University will be offering five major on-site training events this fall, providing contractors with the opportunity to interact with Contractor University’s faculty members and trainers in person as well as network and share ideas with other fellow contractors in attendance.

The five in-person events include: Oct. 3-5 in Cincinnati, Ohio, How to Become the Best Salesperson: 3-Day Sales Boot Camp with Weldon Long, Drew Cameron, and Russ Horrocks; Oct. 11-13 in Dallas, Marketing Branding and Lead Generation Bootcamp with Gary Elekes and Drew Cameron; Oct. 24-26 in San Antonio, Company Planning & Budgeting Bootcamp with James Leichter; Nov. 7-9 in San Diego, Success Week Bootcamp: Financial & Company Planning with Gary Elekes;

## Find the GOLD KEY and UNLOCK a PRIZE



Somewhere hidden inside the pages of Indoor Comfort News lies a golden key ! If you’ve discovered it, please email us the page number and location (e.g., page 4, inside USACD advertisement). The first correct email will receive a prize, courtesy of Indoor Comfort News!

Email your response to:  
[advertising@indoorcomfortnews.com](mailto:advertising@indoorcomfortnews.com)

Note: Winners cannot win more than once in 12 months.



# Industry News

and Dec. 5-7 in Orlando, Florida, Success Week Bootcamp: Financial & Company Planning with Gary Elekes.

For more information, visit [www.mycontractoruniversity.com](http://www.mycontractoruniversity.com).

## ARIZONA



### ICP Names Top Dealers at National Meeting in Phoenix

**Phoenix, Ariz.** – International Comfort Products (ICP) is proud to announce six leading dealers received top accolades at its annual Elite Dealer Meeting. The awards are based on achievements in customer service, community involvement and growth in brand loyalty. ICP is a part of Carrier Global Corporation (NYSE: CARR), global leader in intelligent climate and energy solutions.

“Our award recipients have made an unparalleled commitment to growing with ICP and providing homeowners with best-in-class products and customer service,” said Charlie Piranian, General Manager, International Comfort Products. “These dealers demonstrated top-notch performance by surpassing the rigorous standards expected of an ICP Elite Dealer. We are proud of their accomplishments and honored to be their manufacturer of choice.”

Awards were presented in the following categories:

**Elite Dealer of the Year:** Winners commit to growth within ICP and rise above their peers as leaders in the HVAC industry.

- Four Star Plumbing & Air Conditioning of Myrtle Beach, South Carolina – Heil Dealer

- McAllister Service Company of Somers Point, New Jersey – Comfortmaker Dealer

- Diamond Heating & Cooling of Green Bay, Wisconsin – Comfortmaker Dealer

**Elite Citizen Award:** Recognizes a loyal ICP Elite Dealer that goes above and beyond to make a difference in the lives of others by being invested in the area they serve and work to be pillars of the community.

- Phoenix Comfort Systems of Walton, Kentucky – Tempstar Dealer

**Excellence in Training Award:** Dealers understand training presents a prime opportunity to

expand the skill sets and knowledge base of employees.

- Edwards HVAC of Prattsville, Arkansas – Heil Dealer

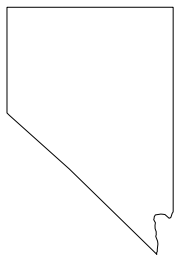
**All in Award:** Dedicated to ICP products in residential, ductless, light commercial and replacement component categories.

- Lanham’s A/C Service of Goodlettsville, Tennessee –Tempstar Dealer

In addition to the awards program, attendees participated in factory training, breakout sessions, product and vendor showcases, and received the latest news and updates on ICP. The ICP Elite Dealer program offers benefits, materials and tools to participating ICP dealers.

To learn more about International Comfort Products visit <https://www.icpusa.com/en/us/>.

## NEVADA



### Fujitsu Conference Strengthens Reps Relationships

**Las Vegas, Nev.** – Fujitsu General America hosted its third Technical Service Advisors (TSA) Conference in mid-April at Virgin Hotels Las Vegas. Themed “Unified in 2023,” the event was held to strengthen manufacturer-distributor relationships and empower in-field technical support staff.

“The Technical Service Advisor Conference is a team building event between distributor support staff and Fujitsu,” said Ruben Marcucci, Director of Service. “It enables both parties to work together as a team, delivering the support that matters most to their contractor customers.”

The three-day event, which was attended by 250 distributors, featured breakout sessions covering everything from commercial and residential training to warranty, parts and marketing.

“We recognize the importance of strengthening relationships and service to our distributors,” said Victor Gomez, Senior VP of Operations. “Technical service advisors are the individuals with boots on the ground, supporting the brand and address-

ing contractors’ needs. We wanted to give them new tools for success and more fully integrate them with our own support staff.”

“We want to thank all the TSA folks from across the country for attending the event,” said President and COO, Matt Peterson. “It was a great week.”

## TEXAS



### Lennox Recognized for Sustainability

**Richardson, Texas** – Home comfort solutions company, Lennox, was named to both Newsweek’s America’s Most Responsible

Companies and Most Trustworthy Companies in America 2023 lists. The company’s Lennox S40 Smart Thermostat was also recently recognized as one of the Green Builder’s 2023 Sustainable Products of the Year for its groundbreaking smart home technology.

The Lennox S40 Smart Thermostat not only provides precise air, it also gives peace of mind. The Lennox S40 Smart Thermostat is part of the Ultimate Comfort System™ HVAC system, which combines the best of the Dave Lennox Signature® Collection to create an unprecedented whole-home comfort system.

The Lennox S40 Smart Thermostat unlocks the full potential of Lennox® heating and cooling systems while optimizing comfort and energy savings for homeowners

Lennox received a 2023 Green Builder Sustainable Product of the Year recognition.

“Since 1895, Lennox has operated

with a culture focused on the core values of integrity, respect, and excellence,” said Alok Maskara, CEO, Lennox. “We are honored to be on two of the nation’s top corporate responsibility lists as well as acknowledged for our innovation in sustainable products. To be recognized for the trust our customers and stakeholders have in us is incredibly rewarding, and we will continue to prioritize them at the forefront of everything we do.”

This year, Lennox received recognition from Newsweek for its corporate social responsibility and trust and Green Builder for leadership in product sustainability:

- Newsweek’s Most Responsible Companies: Showcases the nation’s largest public corporations that continue to invest in corporate responsibility as the importance of environment, social and corporate

Continued on Page 6

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## SAME FOOTPRINT. BIGGER KICK.



To meet the stricter efficiency requirements for 2023, we started from scratch to develop the brand new Endeavor™ Line of furnaces, air conditioners and heat pumps. These innovative solutions deliver higher efficiency and performance in the same—or even smaller—footprints as older equipment. And easy retrofit isn’t the only thing that makes your job easier. Multiple Endeavor models are available with Bluetooth® connectivity for 54% faster installation and 62% faster diagnostics.\* We knew you’d get a kick out of that.

\*Per a 2022 MIAT Residential HVAC Competitive Time Study on base and mid-tier Endeavor Line products and commercially available competitor units of similar product tier.

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To learn more visit  
[Rheem.com/Endeavor](https://Rheem.com/Endeavor)



# Industry News

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governance (ESG) rises.

- Newsweek's America's Most Trustworthy Companies: Reflects the top companies that continue to generate and maintain consumer, employee, and investor trust.

- Green Builder's Sustainable Product of the Year: Highlights everyday home appliances that encouraged sustainability through innovative technology focusing on IAQ, environmental control, and energy savings in the manufacturing industry. This year, Lennox' S40 Smart Thermostat is listed as a top sustainable product in the Controls and Sensors category.

Lennox's continued recognition echoes both their core values and long-lasting legacy of providing homeowners with perfect, healthy air. Earlier this year, the S40 Smart Thermostat was selected as a finalist in the "Best Home

Technology Product" category at the 2023 International Builders Show, speaking to the product's top-of-line capabilities in providing year-round energy savings and convenient access to IAQ monitoring capabilities. Increased efficiency, made possible by the S40 Smart Thermostat, not only saves money for the homeowner but also translates to lower greenhouse gas emissions (GHG) and ultimately a healthier planet.

"At Lennox, sustainability and innovation are at the core of all our products, so we can provide homeowners with the peace of mind that comes with having the most precise and perfect air in their home," said Gary Bedard, president of Lennox's Residential Heating and Cooling Business. "We are proud to be recognized by Green Builder Media for our ongoing efforts to deliver healthier, cleaner air while lowering our environmental impact."

For more information, visit: [www.lennox.com](http://www.lennox.com).

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## New Watts Works Learning Centers Opens in Ft. Worth

**Fort Worth, Texas** – The latest of the Watts Works Learning Centers, now with 200-plus employees, has opened in Fort Worth. The 250,000 square-foot facility – customized for broad training purposes, administration, and manufacturing – joins several other Watts Works Learning Centers across North America.

In addition to a working mechanical room with pressurized water lab, the facility includes a 3,600 square-foot Learning Center, office areas and a wide range of product manufacturing and assembly, including robotic welding and cutting, metal passivation, sheet metal rolling,



INTERIOR VIEW OF WATTS WORKS LEARNING CENTERS IN FT. WORTH.

precision laser metal cutting, CNC machining, and ASME testing.

At the facility, employees produce PVI water heaters, BLÜCHER stainless-steel trench and HygienicPro® drains, and Ames and Watts in-building risers. The products that are manufactured in Ft. Worth are used worldwide in various commercial applications. Many Watts technologies play a role in supporting energy efficiency, safety and regulation, and water conservation.

Through innovative training, the Watts' training offerings help customers and employees improve their knowledge of Watts products, services, and solutions to enhance their professional skills.

Other North American-based Watts Works Learning Centers are located at North Andover, Mass.; Blauvelt, N.Y.; St. Pauls, N.C.; Burlington, Ontario; and Woodland, Calif.

For more information, visit <https://www.watts.com/resources/training/learn-from-the-experts>.

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## Winsupply Names San Antonio Location Company of the Year

**San Antonio, Texas** – Winsupply Inc., one of the nation's largest wholesalers, has named Winsupply San Antonio Tx Co., its overall Company of the Year. Each year, Winsupply recognizes its top performing companies in plumbing, heating, ventilation and cooling (HVAC), industrial, electrical, waterworks, pumps, turf irrigation, and fire fabrication.

The top performing companies, locations and presidents in their respective industries plus individual award winners include:

Overall: Winsupply San Antonio Tx Co., C.J. Hooper, president

Plumbing: Central Oklahoma Winnelson Co., Keith R. Jones, president

HVAC: Winsupply Houston Tx Co., Jason Greagrey, president

Industrial: Thomas Pipe, a

Winsupply Co. (Ariz.), Whalen Ward, president

Electrical: Odessa Winlectric Co. (Texas), Carl R. Long, president

Waterworks: Kansas City Winwater Co. (Mo.), Scott Wilson, president

Fire Fab: Newburgh Windustrial Supply Co. (N.Y.), James B. Lucas, president

Pumps: Winsupply Lubbock Tx Co., Blake R. Talkmitt, president

Turf Irrigation: Wyatt Irrigation, a Winsupply Co. (Santa Rosa, Calif.), Scott Leytem, president

Turn-Around: Winsupply E Houston – MSI (Texas), Jeff Walker, president

Rookie of the Year: Winsupply W Phoenix (Ariz.), Allen White, president

Digital: Winsupply San Antonio Tx Co., C.J. Hooper, president

TOP ROI: Windsor Winair Co. (Conn.), Glen Baskin, president

WSS: Portland Winair Co. (Conn.), Keith Kruysman, president

**NATIONAL**



## Daikin Buys HVAC Rep Carroll Air Systems

**Minneapolis, Minn.** – Daikin Applied announced that it has acquired Carroll Air Systems, a Tampa, Fla.-based company that provides heating, ventilation and air-conditioning (HVAC) systems and services for commercial, industrial and institutional facilities. Supporting the Central and West

Continued on Page 8



# WIFI MADE SIMPLE

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Continued from Page 6

Coast regions of Florida, Carroll Air Systems is a long-standing sales representative for Daikin and other leading HVAC equipment manufacturers, and is now part of the world's number one air-conditioning company.

The acquisition creates a sole source for comprehensive customer care, providing consulting engineers, contractors, and building owners and operators with the systems design support, solutions, services and parts they require for high-performing, sustainable buildings. Customers will have one destination for all HVAC needs from selecting and commissioning equipment to maintaining systems to upgrading or replacing technologies.

"Daikin Applied and Carroll Air Systems have a shared mission to deliver an unrivaled customer experience," said Jeff Drees, President and CEO of Daikin Applied. "Bringing the Carroll Air team into our organization fits our culture and structure. However, it's our customers that will ultimately benefit. They will have access to the most proven, experienced professionals in the region – specialists now backed by the innovation, resources and capabilities of a global leader."

Carroll Air Systems has been a

mainstay of the construction and building management industry, involved in the development and renovation of airports, hospitals and clinics, offices, schools and other facilities across parts of Florida.

"We recently celebrated our 51-year anniversary," said Phillip Carroll, CEO of Carroll Air Systems. "With this move, we'll have the resources and roadmap to deliver quality air, efficiency and sustainability for the next half century and beyond. I'm excited about the future of this organization, and our ability to evolve with and support our customers throughout their HVAC journey."

Daikin Applied's regional service operations will combine with the Carroll Air Systems service team. Phillip Carroll will lead the merged operations, including service, sales and parts, which will now do business as Daikin Applied Central and West Coast Florida.

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## METUS Opens N.J. Distribution and Training Center

**Florence, N.J.** – Mitsubishi Electric Trane HVAC US LLC (METUS), a leading supplier of Ductless and Ducted Mini-split and Variable Refrigerant Flow (VRF)



AN INTERIOR VIEW OF THE MITSUBISHI ELECTRIC TRANE HVAC US DISTRIBUTION AND TRAINING CENTER WAREHOUSE IN FLORENCE, N.J.

heat pump and air-conditioning systems, celebrated the opening of its Distribution and Training Center in Florence, New Jersey with a ribbon-cutting ceremony held April 26. Strategically positioned near the New Jersey and Pennsylvania Turnpikes, this new 400,000-square-foot facility is intended to strengthen the company's supply chain and provide efficient heat pump distribution to the Northeastern U.S.

Government officials in attendance included representatives from the Florence Township Council, the New Jersey State Assembly, U.S. Representative Andy Kim's office

(N.J.) and U.S. Senator Cory Booker's office (N.J.). When asked about the significance of the new facility, Florence Township Mayor Craig Wilkie said, "We welcome Mitsubishi Electric Trane HVAC, which manufactures and distributes energy-efficient heating and cooling systems and equipment with 'green' technology, to Florence Township. Located on an environmentally remediated site that once provided the world with cast iron pipe during the 19th and 20th centuries, the company will bring new jobs to the Township and region. Florence Townships looks forward to a long-term, mutually beneficial relationship with Mitsubishi Electric Trane HVAC."

"The Florence Distribution and Training Center is a significant investment in our country's sustainable future. The facility will supply all-climate heat pumps and VRF systems to distributors, contractors and end users quickly and efficiently in our Mid-Atlantic and Northeast business regions," said Mark Kuntz, chief executive officer, Mitsubishi Electric Trane HVAC US LLC. "With the passing of the 2022 Inflation Reduction Act (IRA), the demand for electric products and services is high. As Americans take advantage of the tax credits, rebates and incentives available through the IRA, the Florence facility will help transform America into a Heat Pump Nation."

METUS plans to use the facility to generate 60 distribution center jobs and empower HVAC businesses with the training and support needed to sell, install and service all-climate heat pumps. METUS anticipates that its distributors and their customers will create many jobs.

"Locating our Distribution

and Training Center in Florence provides several key benefits, including strengthening our supply chain," said Robert Smith, vice president, supply chain, Mitsubishi Electric Trane HVAC US LLC. "It will provide efficient and strategic distribution access to our Mid-Atlantic and Northeast distributors by having the right products in the right place ready to ship. In fact, we anticipate that the Florence Distribution Center will ship thousands of hyper-efficient heat pump systems every month and would result in a reduction in miles driven to deliver products, subsequently also reducing the carbon emissions of those deliveries." Smith noted that Florence offers easy access to the interstate and Port Elizabeth, making the facility accessible for both shipments and students attending training classes.

### Training small business professionals

The Training Center plans to host 40 to 45 classes each year, training 500 to 600 students annually. Classes are anticipated to cover residential and commercial product lines and subject areas, including heat pump installation, start-up and service essentials, advanced service, and controls.

Students will have the opportunity to practice what they learn on actual working Mitsubishi Electric equipment. Products installed in the Training Center for training purposes include four commercial VRF systems with seven styles of indoor units and seven residential heat pump systems with six styles of indoor units.

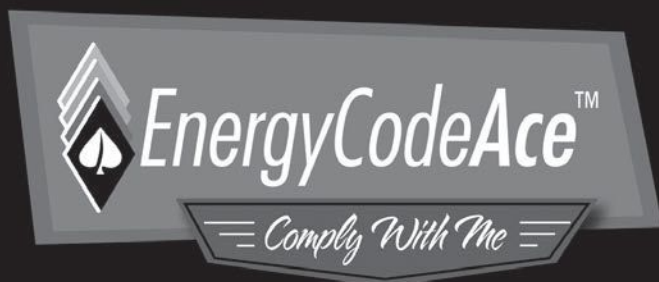
### Building environmental features

With a corporate environmental mission of reducing carbon emissions in all Mitsubishi Electric US facilities by 2030, METUS plans

Continued on Page 10

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Continued from Page 8

that the building will meet LEED® certification requirements. Currently, the facility features 100 percent LED lighting, energy-efficient Mitsubishi Electric heating and cooling equipment and occupancy sensor controls on all lighting. Further demonstrating the company's drive toward electrification, the Distribution Center uses all-electric forklifts instead of the typical propane-powered forklifts found in many warehouses.

In addition to Florence, METUS has distribution centers in Suwanee, Ga., and Mira Loma, Calif. METUS Training centers are located nationwide at 75 locations. To learn more about Mitsubishi Electric Trane HVAC US, visit MitsubishiComfort.com.

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## Rheem Wins at Edison Awards

**Ft. Myers, Fla.** – Rheem®, a leading global manufacturer of water heating and HVAC products, is celebrating its achievement of winning two awards at the internationally recognized 2023 Edison Awards ceremony, in Ft. Myers, Fla., on April 20. The Edison Awards, named after the American inventor Thomas Alva Edison, recognizes world-changing innovations and the brilliant minds behind them.

The Rheem Renaissance™ 15-25 ton Commercial HVAC line earned silver in the Engineering & Robotics, Commercial Technology category and the Rheem ProTerra®

Plug-in Heat Pump Water Heater earned bronze in the Consumer Solutions, Sustainable Design category.

“To receive recognition for two of our Rheem products from the Edison Awards is a true testament to our company's determination to provide next-level comfort solutions for all of our customers' needs,” said Chris Day, vice president, global water product strategy and marketing, at Rheem. “It is an important acknowledgment for our Rheem team members who work meticulously to ensure we continue to lead the industry by bringing the most innovative, sustainable and smart products to market.”

Rheem Renaissance 15-25 ton is a culmination of years of research and development, creative engi-

neering and innovation. Crafted with smart features, the Renaissance line includes exclusive PlusOne® advantages for easy replacement, installation and service. Renaissance products incorporate features contributing to Rheem's goal of building a more sustainable future.

The Rheem ProTerra Plug-in Heat Pump Water Heater is ENERGY STAR® certified and ideal for drop-in gas replacement. It plugs into any standard 120V outlet and features high-efficiency upgrades without the need to install a 240V electric service. Its built-in EcoNet Wi-Fi technology provides control of the household water heater so homeowners can adjust water temperature and track energy usage from a smartphone.

All nominations were reviewed by the Edison Awards Steering Committee, with the final ballot determined

by an independent judging panel. The panel comprises more than 3,000 senior business executives and academics from the product development, design, engineering, science, marketing and education fields and past winners.

For more information about Rheem, please visit [www.rheem.com](http://www.rheem.com).

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## Thermostat Recycling Launches Mercury Contest

**New York, N.Y.** – Thermostat Recycling Corporation (TRC) has launched its 12th annual Banish Mercury Off the Planet (BMOP) competition.

The contest recognizes members of Heating Air-Conditioning Refrigeration Distributors International (HARDI) that collect the most mercury-containing thermostats.

HARDI is the largest and most successful trade association representing HVACR distributors in the United States.

“We have developed a hugely popular campaign for more than a decade which highlights HARDI distributors who have persistently worked at removing and safely recycling mercury-containing thermostats,” said Danielle Myers, executive director, TRC. “Our green collection buckets have been identified with HARDI wholesalers throughout the country, and it is a visual reminder of their efforts at keeping the environment safer for everyone.”

The BMOP contest begins May 1 and concludes Oct. 31.

HARDI members do not have to sign up to enter the contest. They only have to return thermostats collected through the green bins TRC places in HARDI wholesale member branches throughout the United States.

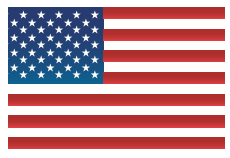
HARDI members are in every state and have collection bins where their customers – HVACR contractors – can conveniently deposit the thermostats.

The Banish Mercury Off the Planet contest, originally called the Big Man on the Planet, until 2018, recognizes winners in three categories:

- Distributor that recycles the most pounds of mercury overall.
- Distributor that recycles

Continued on Page 12

	
	
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Continued from Page 10

the highest average pounds of mercury (total pounds divided by branch count locations that submitted a collection bin).

- Distributor with the highest participation rate (for distributors with more than 10 locations).

TRC will announce the winners of each category at HARDI's annual conference, Dec. 2 to 5, 2023, in Phoenix, AZ.

Previous winners of the contest include:

2022: Johnstone Supply, Progress Supply and Allied Supply.

2021: Johnstone Supply, Famous Supply and Geary Pacific.

2020: Johnstone Supply, APCO Inc. and Allied Refrigeration.

2019: Johnstone Supply, Dubuque Supply and Johnson Supply.

2018: Johnstone Supply, Meier Supply Co., and Johnson Supply.

2017: Johnstone Supply, Tower Equipment, Johnson Supply.

2016: Johnstone Supply, Gustave Larson, Auer Steel.

2015: Auer Steel, Johnson Supply, US Air Conditioning Distributors, and Johnstone Supply.

2014: Corken Steel Products, Crescent Parts & Equipment, and Johnstone Supply.

2013: Johnstone Supply.

2012: Johnson Supply.

Thermostat Recycling Corp., founded in 1998, is an industry-funded nonprofit corporation supported by 28 manufacturers that historically branded and sold mercury thermostats in the United States. TRC maintains a network of more than 3,600 collection sites nationwide and has recovered more than 2.9 million thermostats containing 13 tons of mercury since its inception. TRC assumes

all costs to transport and properly dispose of mercury switch thermostats recovered from service. To learn more about TRC, visit [www.thermostat-recycle.org](http://www.thermostat-recycle.org).

## Johnson Controls, HD Supply Form Partnership

**Milwaukee, Wisc.** – Johnson Controls, the global leader for smart, healthy and sustainable buildings, and HD Supply®, a leading national distributor of maintenance, repair and operations products, have announced a new national distribution relationship. Effective April 2023, Johnson Controls residential HVAC equipment will be available for distribution through HD Supply, a wholly owned subsidiary of The Home Depot.

“Through this strategic collaboration with HD Supply, Johnson Controls will be able to extend the reach and availability of our residential HVAC equipment across the United States,” said David Budzinski, president, global residential & light commercial, Johnson Controls. “We recognize the value of working with a well-known and established distribution partner like HD Supply and the superior service they will bring to new contractors working with Johnson Controls.”

HD Supply helps customers improve their communities by offering the right products, services and solutions to those they serve each day. As a leader in the wholesale industry, the company is making significant investments to further its technology capabilities, delivery network, associate experience and expanded product offerings.

“We have built this program with Johnson Controls to rapidly expand our residential HVAC business,” said Sami Nassar, chief merchandising officer, HD Supply. “We couldn't be more excited about this collaboration, and the opportunity to work with a market-leading brand that complements our customer reach with deep industry expertise and product innovation.”

## Peterman Cares Program Provides Disabled Vet with New Water Heater

**Indianapolis, Ind.** – A disabled veteran and his family have a new, much-needed home water heater courtesy of Peterman Cares, a program launched by Indianapolis-area HVAC and plumbing company Peterman Brothers to ensure deserving area families facing hardship have essential home services.

Corey and Samantha Davidson are the first beneficiaries of the Peterman Cares program. Their family's home remodeling project stalled when they faced unexpected medical emergencies in January and February, leaving the family without a reliable water heater.

“I don't know how to put into words how appreciative I am,” Corey Davidson said. “For somebody who's struggling, even if it's just temporary, something like this can pick them up and change their trajectory completely. I've never heard of a company doing this before. It was a huge surprise and changed our lives.”

Every month, the Peterman Cares program donates and installs heating, cooling, plumbing, or electrical equipment for someone experiencing unplanned hardship in the Indianapolis area. Nominations for Peterman Cares recipients can be submitted at <https://indianapolis.petermanhvac.com/cares/>.

“We believe every family deserves a safe and comfortable home,” said Chad Peterman, president of Peterman Brothers. “Unfortunately, many of our neighbors are at risk because they don't have the critical basic services they need. With Peterman Cares, we're taking action to make a safer and more comfortable community for everybody and every family.”

## Malco Debuts New Product Idea Contest

**Annandale, Minn.** – Malco Products, SBC, one of the nation's leading solution developers and manufacturers of a variety of

high-quality tools for the building trades, announced its first-ever New Product Idea Contest. The winner of the contest will have a chance to work with Malco's product development team to define their product concept and participate in the creation of a new product for the building construction trades.

In addition, the grand prize winner will also receive VIP treatment at an industry trade show, including airfare and hotel expenses. The runner-up will receive \$500 worth of Malco tools. All entries receive a Malco hat, tumbler and catalog.

“Malco launched this contest for product ideas as part of our longstanding commitment to innovation,” said Malco president and CEO Rich Benninghoff. “One of the reasons that Malco remains a leader in the industry is due to our reputation in creating high quality tools that trade professionals want, and need. We've done that by listening to feedback from the field about ways to improve products, or create new products, that make their jobs easier and safer, and this contest will take that commitment to the next level.”

Malco's New Product Idea Contest recognizes innovative new product or process ideas and inventions that align with the company's high-quality solutions that meet the needs of the trade professionals. Entrants are encouraged to submit product extensions and modifications, in addition to original product ideas. To be eligible, all new product ideas must be submitted to Malco by June 30, 2023. Entry forms and complete contest details are available at <https://www.malcoproducts.com/new-product-contest/>.

## NADCA Recognizes 2022 Safety Winners

**Mt. Laurel, N.J.** – The National Air Duct Cleaners Association (NADCA) recently announced the recipients of its 2022 Safety Awards. As the world's most respected authority on the inspection and cleaning of heating, ventilation, and air conditioning (HVAC) systems, NADCA presents its Safety Awards to contractors who have shown a verifiable commitment to employee, customer, and community safety throughout the year. The awards were announced on March 28 at the association's 34th Annual Meeting & Exposition in New Orleans, La.

Companies recognized with NADCA's 2022 Outstanding Safety Award:

- AFTERDISASTER, Greensboro, N.C.
- Chemiclone, Inc., Linden, N.J.
- Clean Air Systems of LA, Inc., Shreveport, LA
- Coit Services of Modesto, Modesto, CA
- Cross Environmental Services, Inc., Crystal Springs, FL
- Duct & Vent Cleaning of America, Inc., Springfield, MA
- Ductworks, Inc., Arvada, CO
- Ductz of Greater Portland & Vancouver, Clackamas, OR
- Guardian Services, Dallas, Texas
- Hughes Environmental, Inc., Louisville, KY
- Kleen Air Service Corporation, Chicago, IL
- Power Vac America, Inc., Houston, Texas
- Providet Service Associates, Inc., Millington, N.J.
- RHP Mechanical Systems, Reno, NV
- Sani-Vac Service, Inc., Warren, MI
- SMS Indoor Environmental Cleaning, Inc., Medway, MA
- Superior Air Duct Cleaning, New Brighton, PA
- Doc's Super Vac, Inc., Fort Collins, CO
- K-tech Kleening Systems, Inc., Weston, WI

Companies recognized with NADCA's 2022 Safety Award:

- Chuck's Heating & Air Conditioning, Inc., Colchester, VT
- Cochrane Ventilation, Wilmington, MA
- CORE California, National City, CA
- CORE Virginia, Norfolk, VA
- Duct Doctor of Raleigh-Durham-Chapel Hill-Fayetteville, Raleigh, N.C.
- Duct Doctor USA of Charlotte, Charlotte, N.C.
- EnviroVantage, Epping, N.H.
- Hoover's Air Duct Cleaning, Inc., Albuquerque, N.M.
- LSS Life Safety Services, LLC, Louisville, KY
- Mavo Systems, White Bear Lake, MN
- Professional Abatement & Remediation Technologies, Fenton, MO
- Service-Tech Corporation, Cleveland, Ohio
- Service-Tech Corporation, Vandalia, Ohio
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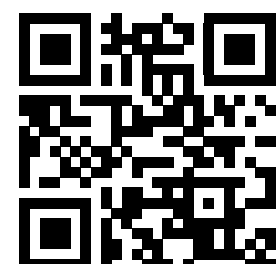
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## CEC's Clean Energy Research, Development Program Delivers Return on Investment

**A decade after its start, program continues to advance state's climate goals while creating jobs.**

A new report shows how California's premier public interest clean energy research and development program continues to add to its decade-long track record of advancing technologies to address the climate challenge while attracting new investment and creating jobs.

Since its creation in 2012, the California Energy Commission's (CEC) Electric Program Investment Charge (EPIC) has invested \$1.1 billion toward the state's clean energy economy to support early-stage technologies that advance the environmental sustainability, reliability and affordability of the electric system. The program has attracted a tenfold return on investment, with awardees earning more than \$10.5 billion in follow-on

funding after EPIC investments.

"EPIC remains more critical than ever in bringing cutting-edge clean energy solutions to the market and setting an example of successful public-private partnership," said CEC Chair David Hochschild. "While much work and increasingly difficult challenges remain, programs like EPIC that harness the innovative spirit of Californians are continuing to chart the path forward for all."

In the past decade:

- The EPIC program funded more than 470 projects in nearly every sector of California's clean energy economy.
- Investments resulted in more than 70 technologies commercialized.
- Companies in the program portfolio raised more than \$10.5 billion in private investments and saw 21 percent employment growth.

• Seventy percent of demonstration and deployment funds have been invested in underresourced communities, including \$22 million benefitting California Native American Tribes.

The report features profiles of EPIC-funded innovations including:

- Marine Corps Air Station Miramar's microgrid that provided back-up electricity during the September 2022 heat wave helping to improve grid resiliency.
- A wildfire forecasting tool and climate change projection modeler that delivers more timely, granular, and accurate results.
- A nontoxic liquefied gas electrolyte that improves the safety of lithium-ion batteries by reducing fire risk and delivers improved energy density.
- Repurposed electric vehicle batteries for energy storage to provide back-up power for commercial

buildings while reducing battery waste.

• Off-the-shelf window-mounted heat pump technology that can be installed by a customer in most residential spaces saving money and greenhouse gas emissions.

### Strengthening Federal Partnerships

Last year also saw the Biden administration sign the Infrastructure Investment and Jobs Act and the Inflation Reduction Act into law, providing the most significant infusion of public dollars and incentives for clean energy in the nation in more than a decade.

To maximize the effectiveness of government-sponsored research and development, the CEC has re-established an agreement with its federal counterpart, the U.S. Department of Energy's Advanced Research Projects Agency-Energy (ARPA-E) program.

Like EPIC, ARPA-E advances high-potential, high-impact energy technologies that are too early for private-sector investment by providing researchers with funding, technical assistance and market readiness.

"CEC and ARPA-E have long supported transformational energy innovation, and we have shared goals to enhance the economic and energy security of California and our entire nation," said ARPA-E Director Evelyn N. Wang. "This collaboration will accelerate our critical work to research, develop, demonstrate, and ultimately deploy energy technologies."

Through coordinated funding and information sharing, the partnership has resulted in more than \$160 million in funding to more than 30 California companies, attracted more than \$1.7 billion in private investment to the state, and created more than 1,000 new jobs.

## Cover Story

Continued from Page 1

cal HVACR schools to increase their exposure to commercial refrigeration and natural refrigerants, something NASRC says is a critical solution to the technician shortage.

"While these students are primed to enter an HVACR career, their exposure to the 'R' is often limited," said Wright. "The student networking session sought to increase that exposure, build industry connections, and ultimately grow the refrigeration technician

workforce."

NASRC plans to host additional training summits and student networking events in other parts of the country and is actively seeking co-hosts to provide a facility. To offer a facility for future training, contact [info@nasrc.org](mailto:info@nasrc.org).

The event was made possible by co-host SCE and the generous support of premium event sponsors: AHT Cooling Systems USA, BITZER US, CAREL USA, Climate Pros, CoolSys, Emerson, Hillphoenix, Parker Sporlan, Piping Industry Progress & Education

(PIPE) and The Arcticom Group.

The North American Sustainable Refrigeration Council (NASRC) is a 501(c)(3) environmental nonprofit working to advance climate-friendly natural refrigerants and reduce greenhouse gas emissions caused by traditional HFC refrigerants. We collaborate with stakeholders from across the industry, including over 51,000 food retail locations, to eliminate the barriers to natural refrigerants in supermarkets. For more information, visit [nasrc.org](http://nasrc.org), LinkedIn, Twitter and YouTube.



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### Industry News

Continued from Page 12

ing, Inc., Seattle, WA  
• Wiz Team, Inc., Lake Forest, IL

"Each year, NADCA's Safety Awards recognize HVAC inspection and cleaning contractors who adhered to best-in-class safety practices throughout the year," said NADCA Chief Executive Officer, Jodi Araujo, CEM.

"We're thrilled to recognize our 2022 award winners. Safety is a top priority for NADCA members, and is an important part of their commitment to adhering

to the highest standards in HVAC system cleaning. The Safety Awards honor those companies that have gone above and beyond this commitment, ensuring safety for their employees and customers."

The criteria for NADCA's Safety Awards are based on regulations and recommendations from the U.S. Occupational Safety & Health Administration (OSHA).

The awards are presented annually. Recipients of the Outstanding Safety Award are companies who have been recognized with the NADCA Safety Award for at least three consecutive years.

### Emerson Buys NI

Continued from Page 1

its value," said Eric Starkloff, the NI CEO. "We ran a robust and comprehensive process, considered a range of potential options, and believe this represents the best outcome for all NI stakeholders. This transaction is a strong testament to the improvements and initiatives we've implemented in recent years that have transformed NI into a software-focused company with higher growth, better profitability, and lower cyclicality."

The transaction has been approved by the board of directors at each company. Under its terms, NI shareholders will receive \$60 per share in cash, which represents a 49% premium over NI's closing

share price as of January 12, 2023, the day prior to NI's public announcement of a strategic review.

Emerson expects to finance the transaction using available cash and liquidity, including approximately \$8 billion of post-tax proceeds from the sale of a majority stake in its Climate Technologies business to the private equity firm Blackstone, a deal that is expected to close in the second quarter of this year, the press release said. Climate Technologies includes the Copeland brand of compressors.

Emerson Electric Co. manufactures products and provides engineering services for industrial, commercial, and consumer markets. Emerson has approximately 86,700 employees and 170 manufacturing locations. For more information, visit [www.emerson.com](http://www.emerson.com).



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Pacific Gas and Electric Company is pleased to offer the following HVAC/R training courses specifically designed to advance the skills of HVAC/R professionals.

### JUNE 2023

#### System Performance Module

(Four-Night Class)

Instructor: Mitch Bailey

Wed., June 21 – Part 1

Thurs., June 22 – Part 2

Wed., June 28 – Part 3

Thurs., June 29 – Part 4

### JUNIO 2023

#### Capacitación de Apoyo NATE HVAC/R

(Clase-Cuatro Noches)

*Seminario Virtual*

Instructor: Rene Aguinada

Lunes, 5 Junio – 1a Parte

Martes, 6 Junio – 2a Parte

Lunes, 12 Junio – 3a Parte

Martes, 13 Junio – 4a Parte

### SEPTEMBER 2023

#### System Diagnostics Module

(Four-Night Class)

Instructor: Mitch Bailey

Wed., Sept. 6 – Part 1

Thurs., Sept. 7 – Part 2

Wed., Sept. 13 – Part 3

Thurs., Sept. 14 – Part 4



All classes are currently scheduled as Webinars held 6:00 pm to 8:00 pm. Webinars are FREE of charge and online registration is required.

You can register online by visiting: [pge.com/hvactraining](http://pge.com/hvactraining). Attendees must register for each night separately and registration is on a first-come, first-served basis.

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These offerings are funded by California utility customers and administered by PG&E under the auspices of the California Public Utilities Commission.



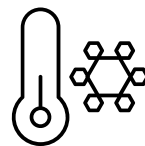
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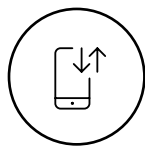
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\*Mitsubishi Electric air conditioner and heat pump systems should only be connected with ANSI-Z21.47/CSA2.3 certified furnaces



# NEW TECH CLEAN 2.0 REBATES FOR CALIFORNIA

Program Design	2023
Incentive Structure	Flat
Incentive Level	\$1,000 HP rebate only
Eligible Customers	All customers in California
Eligible Equipment	AHRI matched pairs only
Project Limitations	Up to 2 incentives per household

## Important Program Information From TECH Clean:

- The incentive rate will be \$1,000/unit everywhere in California.
- The equipment/project qualifications are the same as before: code minimum is accepted (new SEER2/HSPF2 ratings) and limited to 2 units per dwelling unit.
- Only situations where a heat pump is replacing a non-heat pump heating source is eligible. Conversions from heat pump or heat pumps added to a previously non-conditioned space are not eligible.
- Dual fuel equipment will continue to be allowed, but again must be part of a matched pair system where the HP is providing the primary heating source.

NOTE: Eligible projects will only be those that had a signed contract on or after April 25, 2023 will qualify.

For additional information, please contact: [TECH.contractor@energy-solution.com](mailto:TECH.contractor@energy-solution.com)

TECH CLEAN CALIFORNIA

### Single-Family HVAC Incentives

**Please Note** TECH Clean California is offering substantial incentives direct to contractors to support the installation of heat pump technologies in existing single-family homes throughout the entire state of California. Incentives are available only to TECH Clean California enrolled contractors. To find out more information or sign up, please go to <https://switchison.org/contractors/tech-clean-california>. Please note that these incentives are only available in retrofit scenarios where a heat pump is replacing a non-heat pump system.

**Single-Family Incentives**  
Single-family incentives are available for any building with four or fewer dwelling units or for individual replacements in a larger multifamily building. TECH Clean California is providing flat incentives throughout California. Additional incentives available through TECH partner programs can be stacked on top of TECH rebates for a higher total potential incentive. Please visit <https://incentives.switchison.org/contractors> for a list of available heat pump rebates throughout California.

The following incentives will be available for all qualifying installations for HP HVAC. Note, for single-family HP HVAC, incentives are based on the number of outdoor units and are limited to incentives for two outdoor units per home.

Equipment Type	Minimum Efficiency Requirements	Total Incentive Per Unit
Package, split, mini/multi-split (Only AHRI matched pairs)	Title 24 code minimum	\$1,000

For full information about claim requirements, please visit <https://switchison.org/contractors/tech-clean-california>

**TECH Clean California HVAC Single Family Project Checklist (on reverse)**  
This checklist is provided as a reference and includes the key items to remember when scoping and completing a project you intend to submit for a TECH Clean California rebate. We suggest that you print this checklist out and provide to all technicians interacting with customers to ensure all parties know the required data to collect and the steps to take to ensure that the application is accepted.

TECH Clean California  
[TECH.info@energy-solution.com](mailto:TECH.info@energy-solution.com)

TECH Clean California is funded by California ratepayers and taxpayers and administered by Southern California Edison Company under the auspices of The California Public Utilities Commission.

TECH  
CLEAN CALIFORNIA

04.13.2023

You must re-enroll for the TECH Clean 2.0 program. Scan this QR code to fill out the new enrollment form.



**TECH**  
CLEAN CALIFORNIA



## DOE Announces \$40 Million for More Efficient Cooling for Data Centers

**Fifteen projects will develop high performance-cooling systems for more energy-efficient data centers to reduce carbon emissions.**

The U.S. Department of Energy (DOE) today announced \$40 million in funding for 15 projects that will develop high-performance, energy efficient cooling solutions for data centers. Used to house computers, storage systems, and computing infrastructure, data centers account for approximately 2% of total U.S. electricity consumption while data center cooling can account for up to 40% of data center energy usage overall. The selected projects – located at national labs, universities, and businesses – seek to reduce the energy necessary to cool data centers. These efforts will lower the operational carbon footprint associated with powering and cooling this critical infrastructure and support President Biden’s goals to reach net-zero carbon by 2050.

“Climate change, including severe weather events, threatens the functionality of data centers that are critical to connecting computing and network infrastructure that power our everyday lives,” said U.S. Secretary of Energy Jennifer M. Granholm. “DOE is funding projects that will

ensure the continued operation of these facilities while reducing the associated carbon emissions to beat climate change and reach our clean energy future.”

Supported by DOE’s Advanced Research Projects Agency-Energy (ARPA-E), the following projects have been selected as part of the Cooling Operations Optimized for Leaps in Energy, Reliability, and Carbon Hyperefficiency for Information Processing Systems (COOLERCHIPS) program:

- Flexnode (Bethesda, MD) will develop a prefabricated, modularly designed data center that will leverage four key components and system-level technology advancements to cool more efficiently. (Award amount: \$3,500,000)
- HP (Corvallis, OR) will develop an aggressive liquid cooling solution that reduces the need for thermal interface material, thereby lowering the package thermal resistance. This design would reject server heat to 40°C and 60% relative humidity external ambient air. (Award amount: \$3,250,000)
- HRL Laboratories (Malibu, CA) will develop a novel data center thermal management system with low thermal resistance and greater energy efficiency to reduce power consumption for the next generation of data center servers. (Award amount: \$2,000,000)

• Intel Federal (Austin, TX) will seek to adapt a two-phase immersion cooling system to spread heat more effectively. (Award amount: \$1,711,416)

• JETCOOL Technologies (Littleton, MA) will develop a microconvective cooling technology that combines and optimizes two distinct cooling approaches to provide the highest levels of energy efficiency in data centers, aiming for significant energy savings. (Award amount: \$1,265,747)

• National Renewable Energy Laboratory (Golden, CO) will develop testing protocols to evaluate the cooling technologies developed by COOLERCHIPS projects in real data center operating conditions. This technical evaluation team will leverage the work done by the other project teams to develop a digital twin to evaluate key parameters and help test a broad range of technologies to evaluate thermal, reliability, and cost goals. (Award amount: \$1,463,319)

• Nvidia (Santa Clara, CA) will develop a modular datacenter with a multi-aspect innovative cooling system. The design cools chips with a two-phase cold plate, which achieve a thermal resistance as low as 0.0025°C/W. (Award amount: \$5,000,000)

• Purdue University (West Lafayette, IN) will develop an

innovative chip-level direct two-phase impingement jet cooling solution to drastically enhance overall thermal performance while reducing pumping power. (Award amount: \$1,881,315)

• Raytheon Technologies Research Center (East Hartford, CT) will develop a system to remove heat from sources in servers using ribbon oscillating heat pipes. This system could enable a transformational reduction in the power consumption of future data centers. (Award amount: \$2,504,024)

• University of California, Davis (Davis, CA) will develop a suite of holistic thermal management solutions and incorporate these in a modular datacenter for edge computing. Their design innovations include efficient heat extraction and dissipation of this heat to the ambient by using high-efficiency, low-cost heat exchangers. (Award amount: \$3,586,473)

• University of Florida (Gainesville, FL) will develop a disruptive thermal management solution proposed for cooling future CPU and GPU chips at unprecedented heat flux and power levels in data centers server racks. The new technology allows for significant future growth in processor power,

rejects heat directly to the ambient air external to the data center, and would facilitate adoption within existing data center infrastructure with a primary liquid cooling loop. (Award amount: \$3,042,417)

• University of Illinois at Urbana-Champaign (Champaign, IL) will develop a cooling paradigm capable of both minimal energy use and maximum cooling power for future servers. (Award amount: \$2,500,000)

• University of Maryland (College Park, MD) will develop an integrated decision support software tool for the design of next-generation data centers that links existing modeling software with an innovative co-simulation framework. (Award amount: \$3,484,484)

• University of Missouri (Columbia, MO) will develop an innovative, scalable cooling solution for data centers offering numerous advantages over existing phase-change processes. (Award amount: \$1,649,290)

• University of Texas at Arlington (Arlington, TX) will develop a novel hybrid cooling technology to address the growing need for advanced thermal management solutions for high-power data centers. (Award amount: \$2,843,223)

## Danfoss to Power All North America Facilities with Solar Energy by 2025

With an eye toward achieving their global decarbonization goals, Danfoss North America recently signed a power purchase agreement with CIG Capital, a U.S.-based project financing firm, to purchase

about 75 MW of solar power from a solar farm in Texas, starting in 2025. The initial agreement term is 12 years, allowing Danfoss to fully replace its annual electricity usage in North America with green energy

through at least 2037.

The new agreement will provide Danfoss with green certificates, signifying that they are supplying the North American electrical grid with the full amount of green electricity needed to power all 24 factories and 36 locations in North America, and will reduce Danfoss’ carbon footprint in the region by 75%.

Soren Revsbech Dam, Head of ESG and Decarbonization, Global Services Real Estate, at Danfoss says: “As part of our ESG goals, Danfoss has committed to achieving carbon neutrality across our global operations by 2030. This agreement to secure green energy for our North America operations will reduce our global emissions by 21%. This is not only a significant step in our journey to becoming carbon neutral, but it also demonstrates that we are serious about putting sustainability at the heart of our business.”

CIG Capital will be building the six square mile farm in the panhandle region of Texas. Groundbreaking is scheduled for November of 2023, with the farm becoming fully operational by the spring of 2025. The so-



(L-R) RODNEY MUMM, HEAD OF DANFOSS GLOBAL SERVICES IN NORTH AMERICA; SOREN REVSBECH DAM, HEAD OF ESG, GLOBAL SERVICES REAL ESTATE; AND LEART BERISA, CATEGORY MANAGER, GLOBAL SERVICES.

lar farm capacity is projected to be 509 MW of solar power, of which Danfoss will utilize 15 percent.

The next focus for Danfoss in its decarbonization journey will be on reducing and reusing energy across its North America locations, employing various Danfoss technologies, such as oil-free, variable-speed compressors and other heating and cooling

solutions that support heat recovery and energy efficiency.

Rick Sporrer, President of Danfoss North America says: “Danfoss is committed to playing a leading role in the energy transition. Meeting our ESG goals and living up to our commitment to combat climate change means developing

Continued on Page 19

### Duct Leakage Testing?





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# Case Studies

## Palomar Observatory Relies on Venstar's Skyport to Remotely Manage HVAC

### Challenge:

Owned and operated by Caltech, the iconic Palomar Observatory in Palomar, Calif. is home to seven active research telescopes, including three large research telescopes: the 200-inch Hale Telescope, the 48-inch Samuel Oschin Telescope and the 60-inch telescope.

To produce sharp images, temperatures inside the telescope domes must be closely controlled to reduce turbulence at the telescope level. When air turbulates in the path between a telescope and a star, the star will appear blurry or distorted due to the mixing between hot and cold air.

Rick Burruss, superintendent for Palomar Observatory, wanted to find a control system that would help keep the telescopes cool to ensure optimal viewing conditions. He also wanted to be able to monitor the temperatures generated by the HVAC systems across the facility.

### Solution:

To remotely monitor and control temperatures in the telescope domes, Burruss chose Venstar's Skyport® Cloud Services and Venstar ColorTouch Wi-Fi® thermostats.



AN AERIAL VIEW OF THE PALOMAR OBSERVATORY IN SAN DIEGO COUNTY.

With Skyport, Burruss has the ability to remotely view, access and control all of the thermostats across the facility. This includes monitoring the temperatures in the telescope domes, critical equipment buildings, laboratories, office and recreation space, museum and astronomer living quarters.

Utilizing the Skyport Cloud Service, Burruss can now see the current temperature inside each telescope dome and remotely make any changes to the settings. He uses setpoint limiting to ensure that temperatures stay within the pre-set parameters, keeping the domes from getting too hot or too cold. In addition, Skyport instantly alerts him via email when temperatures go above or below

parameters so he can immediately take action from virtually anywhere.

### Results:

Using Skyport Cloud Services, Burruss is able to ensure consistent temperatures in the telescope domes. Minimizing turbulence is essential for ideal viewing of the stars for researchers, visitors and other telescope users.

Results include:

- Enables clear viewing of stars by keeping telescope domes the right temperature
- Provides alerts when temperatures inside the domes are outside the pre-set parameters
- Empowers remote access and control using Skyport Cloud Services via website or mobile device
- Facilitates setpoint limiting of temperatures throughout the facility



RICK BURRUSS, SUPERINTENDENT FOR PALOMAR OBSERVATORY, USES SETPOINT LIMITING TO ENSURE THAT TEMPERATURES STAY WITHIN THE PRE-SET PARAMETERS, KEEPING THE DOMES FROM GETTING TOO HOT OR TOO COLD.

### About Palomar Observatory

Palomar Observatory, located on top of Palomar Mountain in north San Diego County, California, is an internationally renowned center of astronomical research that is visited by tens of thousands of researchers and visitors each year. Conceived almost a hundred years ago, it is owned and operated by Caltech.

### About Venstar

Venstar, founded in 1992 and based in Southern California, designs and builds a broad variety of innovative thermostats with more than 10 million installed. Venstar's Skyport Cloud service provides businesses a secure and private powerful cloud service for command and control of HVAC systems from anywhere in the world.

## Danfoss Solar

Continued from Page 18

innovative solutions.”

As part of the Science Based Targets initiative (SBTi), Danfoss has committed to become carbon neutral in its global operations (scope 1 & 2) by 2030 and says it will reduce its value chain emissions (scope 3) with 15% by 2030. This commitment is included in the targets of Danfoss' three step-change initiatives on Decarbonization, Circularity, and Diversity, Equity & Inclusion.

Already Danfoss has seen progress in decoupling environmental impact from business growth by delivering 7% decrease in scope 1 and 2 emissions while growing 15% organically in 2022.

Additionally, the 250,000 sqm Danfoss headquarters campus site in Denmark became carbon neutral in 2022. Carbon neutrality was achieved through energy saving projects, utilization of excess heat from processes and data centers, sourcing of green energy, and offsetting residual emissions.




### Carrier 38MURA

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Sizes: 18/24/30/36/48/60




Turn to the experts

#### SYSTEM FEATURES

- Anti-corrosive fin coating
- Traditional unitary line set sizes
- Quiet operation

#### OUTDOOR FEATURES

- Factory installed basepan heater
- Factory installed crankcase heater
- Low voltage controls
- 24V Interface pre-installed
- Standard heat and high heat options
- Auto-restart function
- Condenser high temp protection

#### INDOOR FEATURES

- Modes: Cool, Heat, Dry, Fan, Auto
- 4-way installation (Up flow, Down flow, Right, Left)
- New aluminum coil
- Automatic airflow technology with static pressure up to 0.8 inWG
- Less than 2% air leakage
- Easy maintenance

#### Heat Pump with Basepan Heater

Inverter-driven, variable speed, rotary compressor  
Up to 18.0 SEER2  
Up to 10.0 HSPF2  
Sizes: 18 / 24 / 30 / 36 / 48 / 60

#### KEY FEATURES

**Minimal Footprint**  
A low-profile, unobtrusive outdoor unit makes this system an ideal option for homes with zero lot lines or limited outdoor space.

**Whole-Home Solution**  
This versatile, energy efficient system can be easily retrofitted to combine with existing connections, providing an efficiency upgrade for your entire home.

#### CONTROLS

Built-in 24V Interface for third-party thermostat control

#### OPTIONAL ACCESSORIES

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# Business Matters

## A Few Random Thoughts on Advertising, Private Equity, and Training Your Technicians

By Lawrence Castillo  
IHACI Board Member

### Radio Advertising:

Many HVAC companies utilize radio as a primary source of advertising, and currently, many of them are advertising to a dwindling audience. Allow me to explain.

Many of our most targeted clients are the people who have bought into the electrification movement. These potential customers will be converting to electric HVAC systems, as a means of both curbing their utility consumption, and achieving a higher level of efficiency.

As you might guess, many of these potential clients are already driving an electric vehicle, or at

some point, will be converting to one. The folks that drive new EV's manufactured by BMW, Porsche, Audi, Volvo, Volkswagen, Ford, and Tesla all share something in common.... none of them have AM radio in their cars. These manufacturers have all eliminated the AM band.

Automakers say EV's electric motors interfere with AM frequencies, creating annoying buzzing noises and faded signals. As a result, the owners of these vehicles aren't hearing the AM radio advertising that so many service companies have purchased. The old advertising axiom that AM radio reaches the upper income class that listens to sports and news talk radio is no longer valid. Soon enough, AM radio might not reach

many people at all.

### Private Equity & Knowing When to Sell Your Business:

Many residential HVAC business owners have sold their businesses in the past few years to Private Equity, and that trend will continue, but this is a different economy than what we experienced just a few short years ago.

Before this economic downturn, multiples were high, everyone was in play, and multi-millionaires were being born with every transaction. Since that time, there has been an economic downturn punctuated by momentum killing inflation and climbing interest rates. The party goes on, but someone turned off the music.

Right now, the principal groups

doing the buying are scouring the nation, collecting smaller companies as a better value proposition than paying higher multiples to acquire larger shops.

If you are unsure about when to sell, how to sell, or how to get a no cost valuation of your business, send me an email and I will confidentially connect you with some of the best and brightest in our industry to help guide you, free of charge. (lawrence@brodypennell.com)

### Joe Crisara Training Exclusive for IHACI Members:

My good friend Joe Crisara has put something extra special together for IHACI members this month. In case you aren't familiar, Uncle Joe has been our

industry's leading Sales Trainer for the past 20 years, and his company, ServiceMVP, trains residential HVAC owners, salespeople, technicians, CSRs, and Dispatchers both live in-person and through their app.

On Tuesday, June 13, at 7 a.m., Joe will host a FREE one-hour Zoom training for IHACI Members only. This training class will address "Creating Urgency in Your Solutions," and will be geared toward your Service Technicians, so they should all tune in and be ready to take notes.

Those in attendance will receive a QR code unlocking a free trial to ServiceMVP eLearning as a bonus. Joe is giving IHACI Members 30 days of video eLearning to train your team.....for FREE. Joe said "This FREE 30 day access will allow IHACI members to put our training into action and can see for themselves the impact that their businesses will feel."

Thanks Joe. We appreciate this exclusive training and access for IHACI only.

If you would like to attend, email my assistant at maria@brodypennell.com, and she will make sure you have the Zoom link to share with your technicians.

### Final Word:

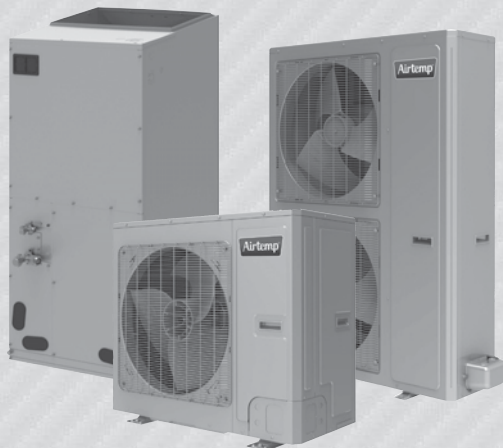
As we discussed in this space last month, the new IHACI Peer Groups are our newest benefit, and they allow IHACI members to establish a close network amongst other like-minded contractors with whom you regularly meet via Zoom to share and discuss ideas. If you have ever belonged to Nexstar, Service Roundtable, the Success Group, or any other best-practices group, you already understand how beneficial the relationships that you establish can be as you grow and scale your business. At IHACI, our goal with Peer Groups is to give our members a way to connect so that they can leverage each other to help make their businesses more successful. These Peer Group Zoom calls are well underway, and our participants are already reaping the rewards of having a new network to share with and learn from.

Please join us to see how IHACI Peer Groups can help

Continued on Page 21



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## Ultra Side Discharge Inverter Heat Pumps

UP TO 20 SEER Inverter Heat Pump



### High Efficiency

A fully inverter driven compressor delivers efficiency levels up to 20 SEER with select systems.



### Comfort In Any Environment

Ultra units can provide heat when outdoor temperature is as low as -22 degrees fahrenheit and provides cooling when outdoor temperature is as high as 130 degrees fahrenheit.



### Inverter Compressor

Compressor modulates up and down to meet the required heating or cooling load. This modulation dramatically decreases energy consumption!



### Quiet Operation

Standard operation produces a mere 62 decibels making this one of the quietest units on the market.



### Installation Flexibility

The side discharge outdoor unit can fit in tight spaces where a standard unit cannot.



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## Residential Cooling

### Allied Air Enterprises Single-Stage



Allied Air Enterprises announces new AHRI system ratings for single-stage air conditioners under the Armstrong Air® and AirEase™ brands (4SCU16LE) which have been re-tested and re-rated to meet new efficiency metrics. The 16 SEER (up to 15.2 SEER2) air conditioner is an entry-level solution for the Northern U.S. and Canadian markets.

“Built on Allied’s proven design of cooling products, the 16 SEER air conditioner achieves compliance without requiring updates to existing indoor system components – it’s the same indoor equipment they have in stock today,” said Kim McGill, VP-Marketing, Allied Air Enterprises. “This greatly simplifies the 2023 regulatory transition for our distributors and dealers and may even help with total system costs for consumers.”

Based on the same platform dealers know and use today, the Northern regions allow for an indefinite sell-through period for air conditioners and any existing inventory in the channel may be used this year. Allied Air was able to support the channel’s request last year to build 2022 models that come in at a lower price point and help cover three to six months of business in 2023.

Reliably maintaining consistent temperatures, the 4SCU16LE air conditioners offer proven performance with energy efficiency. With thoughtful features like Omniguard® all-aluminum tube and fin coils with a reliable

single-stage scroll compressor, the 16 SEER air conditioner can help deliver quieter operation, reduced energy bills and lower overall maintenance costs.

Features include:

- Compressor sound blanket and rubber grommet mounts help provide quieter operation
- Sealed contactor with lug connections that protect high voltage connections
- 45-degree service port access for easy gauge set connections
- Mechanical high- and low-pressure switches with Schrader core to help eliminate brazing and evacuation during service
- Removable fan grill with enough wire to set on the ground without disconnecting anything
- Maximum Heat Transfer™ Technology
- 10-year Limited Warranty on the compressor and a 10-year Limited Warranty on parts\*

**More information:** [www.alliedair.com](http://www.alliedair.com).

### Bosch Home Comfort Inverter Ducted Package Plus



**Bosch Home Comfort**, a leading global source of high-quality heating, cooling and hot water systems, announced the addition of a new model to its Bosch Inverter Ducted Packaged Unit (IDP) Heat Pump family. IDP Plus is a highly efficient (15-SEER2), incredibly reliable and extremely quiet Inverter Ducted Packaged heat pump system. IDP Plus is available in 3-ton or 5-ton capacities to best

suit the heating and cooling needs of a home.

“Heat pumps are becoming the top HVAC option for lowering a home’s energy consumption and carbon footprint while still providing home comfort all year round,” said Ian McIver, Product Manager for Bosch Home Comfort North America. “Bosch Home Comfort’s IDP Plus is an air-to-air heat pump that provides both heating and cooling. With intelligent control, our advanced, fully modulating inverter drive compressor automatically adjusts its output in tiny increments to keep homeowners comfortable at a consistent room temperature. The IDP Plus provides the perfect balance of efficiency and comfort without breaking the bank.”

Traditional heating and cooling systems operate by blasting all the way on or shutting completely off.

This surge and stop cycle uses more energy, causes uncomfortable temperature fluctuations and results in unnecessary wear and tear on the system. To prevent this issue, IDP Plus’s modulating inverter system provides precise indoor temperature and humidity control by delivering exactly the amount of hot or cool air needed to achieve the desired temperature for maximum comfort. It delivers quicker, smoother, more consistent and more efficient heating and cooling.

The systems in the Bosch IDP lineup are some of the quietest air-to-air heat pumps on the market. The systems can achieve outdoor sound levels as low as 56 dBA by coupling silent blade technology with sound isolating mounts and outdoor condensing section place-

ment. This level of quiet operation vastly outperforms standard systems on the market.

Bosch backs the IDP family with a 10-year residential limited warranty protection on parts. This standard offering covers all components incorporated into the heat pump system at the time of manufacture.

**More information:** [www.bosch-homecomfort.com/us/en/residential/home/](http://www.bosch-homecomfort.com/us/en/residential/home/).

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### Carrier Infinity

**Carrier’s Infinity® 24** heat pump with Greenspeed® Intelligence has been selected by Green Builder Media as a 2023 Sustainable Product of the Year. The accolade

**Continued on Page 22**

### Business Matters

Continued from Page 20

you to establish relationships with other like-minded contractors who share some of the same struggles and issues that you face every day in your business. Please contact me at [lawrence@brodypennell.com](mailto:lawrence@brodypennell.com) to ask questions about how to join.

*Lawrence Castillo is the Presi-*

*dent/Operating Partner of Brody Pennell Heating & Air Conditioning in Los Angeles and is a Board Member of IHACI. Castillo is nationally respected as one of the residential HVAC/plumbing industry’s top operators and has generated record revenue growth for some of the West Coast’s most respected and well-known companies over the past 20+ years. Lawrence can be reached at [Lawrence@brodypennell.com](mailto:Lawrence@brodypennell.com).*



# CHP-5

## A NEW WAY TO EARN NATE CERTIFICATION

Technicians can now earn their NATE Certification with the Certified HVAC Professional (CHP-5).

The certification is made up of five thirty-question exams that mirror the ways technicians learn and grow in the field. Each exam covers one of five different subject areas, providing technicians a clear path to prepare for NATE Certification.



Service



HVAC Fundamentals



Electrical and Controls



Comfort and Airflow



Installation



**CHP-5 Exams**

## CHP-5 TRAINING RESOURCES



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NATE offers **official study guides** for the CHP-5 as well as other NATE certification exams in the NATE online store.

[www.NATEX.org](http://www.NATEX.org)

## Residential Cooling

Continued from Page 21



recognizes today's most innovative products that make homes more resilient, intelligent, efficient, healthy and safe. Carrier is a part of Carrier Global Corporation (NYSE: CARR), the leading global provider of healthy, safe, sustainable and intelligent building and cold chain solutions.

"Our award-winning Infinity 24 heat pump with Greenspeed Intelligence provides industry-leading innovations that maximize energy efficiency and total comfort for customers," said Heidi Gehring, Associate Director, Cooling Product Management, Carrier. "It's next-gen technology our customers can be confident in and feel good about."

Greenspeed Intelligence is created by pairing adaptable-speed technology with the Infinity System Control. The unique, variable-speed compressor of this unit allows it to adapt its output to the needs of the home. With adjustments between 25 and 100% capacity, it gives the home the necessary amount of cooling or heating. This allows the system to operate longer at steadier, lower capacities, which ensures incredible energy efficiency, comfortable humidity levels and quiet

operation with tighter temperature control than standard systems. The Carrier Infinity 24 heat pump with Greenspeed Intelligence supports Carrier's 2030 Environmental, Social and Governance (ESG) goals of reducing its customers' carbon footprint by more than 1 gigaton.

**More information:** [www.carrier.com/residential/en/us/products/heat-pumps/25vna4/](http://www.carrier.com/residential/en/us/products/heat-pumps/25vna4/).

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### Daikin EMURA



**Daikin EMURA** wall-mounted indoor multizone heat pumps combine designer form and smart functionality to create an icon of contemporary climate control.

With its curved, sleek silhouette, Daikin EMURA makes a modern design statement while delivering high performance: up to 20.6 SEER2 and 9.7 HSPF2 ratings. It does so, whisper quietly, down to 21 dB(A).

Inside, its highly intelligent system can be controlled by a standard, backlit wireless controller, the optional Daikin Comfort Control app or the new Daikin One+ smart thermostat.

Daikin EMURA comes full-featured with a titanium apatite photo-catalytic air purification filter; an intelligent eye to detect room presence; power airflow dual flaps; 3D airflow; Program Dry function; plus, a weekly timer. Modes include Econo, Comfort

and Powerful Operation.

The inverter-driven Daikin EMURA handles a wide operating range from 14°F to 115°F for cooling and -13°F to 60°F for heating. Available in silver or matte white, sizes include 0.75, 1 and 1.5 tons of cooling, and up to 43,000 BTU/h heating capacity, all backed by a 12-year parts limited warranty.

**More information:** [www.northamerica-daikin.com/](http://www.northamerica-daikin.com/).

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### Friedrich Kühl

Kühl from **Friedrich** Air Conditioning is quiet, with larger heat pump models capable of producing up to 24,000 BTUs (cool only up to 35,000 BTUs).

It's an all-season window A/C solution, helping save money on energy bills. It is also available in lower-global warming potential (GWP) R-32 refrigerant models, which comply with California's stringent state regulations (California Air Resources Board -CARB) and increases efficiency. Friedrich Kühl is a room AC available with MERV 13 filtration to guard against spreading infectious airborne particles.

**More information:** [www.friedrich.com](http://www.friedrich.com).



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### GE Appliances Air and Water Solutions

**General Electric's** residential ducted HVAC line's full unitary lineup, designed to reduce downtime for professionals and energy bills for consumers, consists of air conditioners, heat pumps, air handlers, evaporator coils, gas furnaces and packaged units with a range of efficiencies, including up to 22 SEER2 inverter-driven ACs, and 97% AFUE furnaces.

The line was designed with the needs of HVAC professional's top of mind, with various product innovations that include the ability to operate with standard 24-volt controls across all models. It also designed to fully comply with national regulatory changes that went into effect in January 2023.

Additionally, the line-up includes cold climate heat pumps with performance down to -22F as well as system matches that



qualify for the 25C, IRA, and many local incentives. The units use many accessible service parts and are assembled in North America and supported domestically.

**More information:** [www.geappliancesairandwater.com](http://www.geappliancesairandwater.com).

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### Goodman GSX/ZV9



The new **Goodman** brand GSX/ZV9 air conditioner or heat pump brings homeowners and contractors multiple benefits – thanks to inverter technology driving up to 22.5 SEER2 and 8.2 HSPF energy-efficient, quiet performance, along with features engineered to make servicing easy.

Contractors will appreciate the GSX/ZV9 compatibility with ComfortBridge™ communicating technology for simpler and easier commissioning, diagnostics and servicing via the convenient Cool-Cloud™ mobile app.

Other contractor-focused features include Goodman control algorithmic logic; diagnostic indicator lights, seven-segment LED display, fault-code storage; coil/ambient temperature sensors; high/low pressure switches; and a suction pressure transducer (in cooling mode). Top/side maintenance access is provided, plus sweat connection service valves and easy gauge-port access. Comes fully charged for 15 feet of tubing length.

Energy-efficient inverter technology allows lower operating sound levels, while helping prevent common temperature swings experienced with non-inverter, single- and two-stage units. Goodman inverter-driven GSX/ZV9 systems continually dehumidify the home and can maintain comfort levels more efficiently under part-load conditions compared to non-inverter systems.

Robustly backed by a Lifetime

Compressor Limited Warranty, a 10-year Unit Replacement Limited Warranty and a 10-year Parts Limited Warranty, Goodman GSX/ZV9 variable-speed air conditioners or heat pumps are available from two to five tons.

**More information:** [www.goodmanmfg.com](http://www.goodmanmfg.com).

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### Johnson Controls 14.3 SEER2

**Johnson Controls** has launched a new line of 14.3 SEER2 residential air conditioners designed to meet the Department of Energy efficiency standards that went effect January 1, 2023. The redesigned air conditioners are available in 1.5 to 5 tons and feature aluminum alloy micro-channel coils to ensure maximum energy efficiency and durability at an entry-level price point. The new product line is available for YORK®, Luxaire®, Coleman®, Champion®, Fraser-Johnston®, Guardian® and Evcon™ brands.

The new systems meet the DOE required 14.3 SEER2 cooling efficiency targets as well as the EER2 requirements for the southeastern and southwestern U.S. regions. Expertly designed, engineered and rigorously tested, these air conditioners offer the latest in energy savings and lasting performance for years to come.

Designed and constructed for optimal installation, performance and serviceability, they feature a durable powder-coating painted finish, low-sound and vibration direct-drive fan design, and easy installation and serviceability thanks to a swing-out control box and full access from the top and side of the units.

**More information:** [www.johnsoncontrols.com](http://www.johnsoncontrols.com).



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### Mitsubishi Electric Trane HVAC US Ez Fit MLZ-06

The Ez Fit MLZ-06 Recessed Ceiling-Cassette from **Mitsubishi Electric Trane HVAC US** is for those looking for the benefits of a recessed ceiling cassette in a smaller design. This narrow-body ceiling

Continued on Page 27

# CANNABIS MECHANICAL

Do you struggle to control Humidity in Grow Facilities? My REHEAT kit will fix the problem growers have and you will learn HOW TO BUILD Grow Rooms. Scan my links to learn more. Steven Landry, Cannabis Specialist



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- Displays IAQ levels on free mobile app and website
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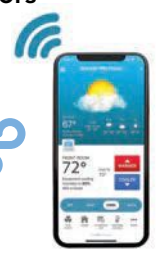
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# Troubleshooting

## A Package Unit Complaint

By Jim Johnson  
Contributing Editor

In this troubleshooting situation, the equipment is a gas pack that has been in service for six years. The customer's complaint is that the unit is running constantly and isn't keeping them comfortable in the same way it did during the previous summer.

In your initial observation of the situation, you confirm that while the thermostat is properly set for the cooling mode, and that there is normal indoor air flow, the temperature in the building is higher-than-normal. Moving outside, you also observe that the condenser fan motor is operating normally, and the compressor is running. You also confirm that the outdoor coil is clean.

When you check the LED status display, you note that along with the green power indicator, a yellow alert status LED is present, flashing once, then pausing and repeating.

Upon consulting the manufacturer's troubleshooting information that lists the possibilities for the observed fault code, you confirm that the ambient temperature is 95°F

and check the refrigeration system pressures. Using the manufacturer-specific chart available for this R-410A system shown in **Figure One**, you note the point on the chart where the suction and liquid pressures cross. (Indicated with a red X)

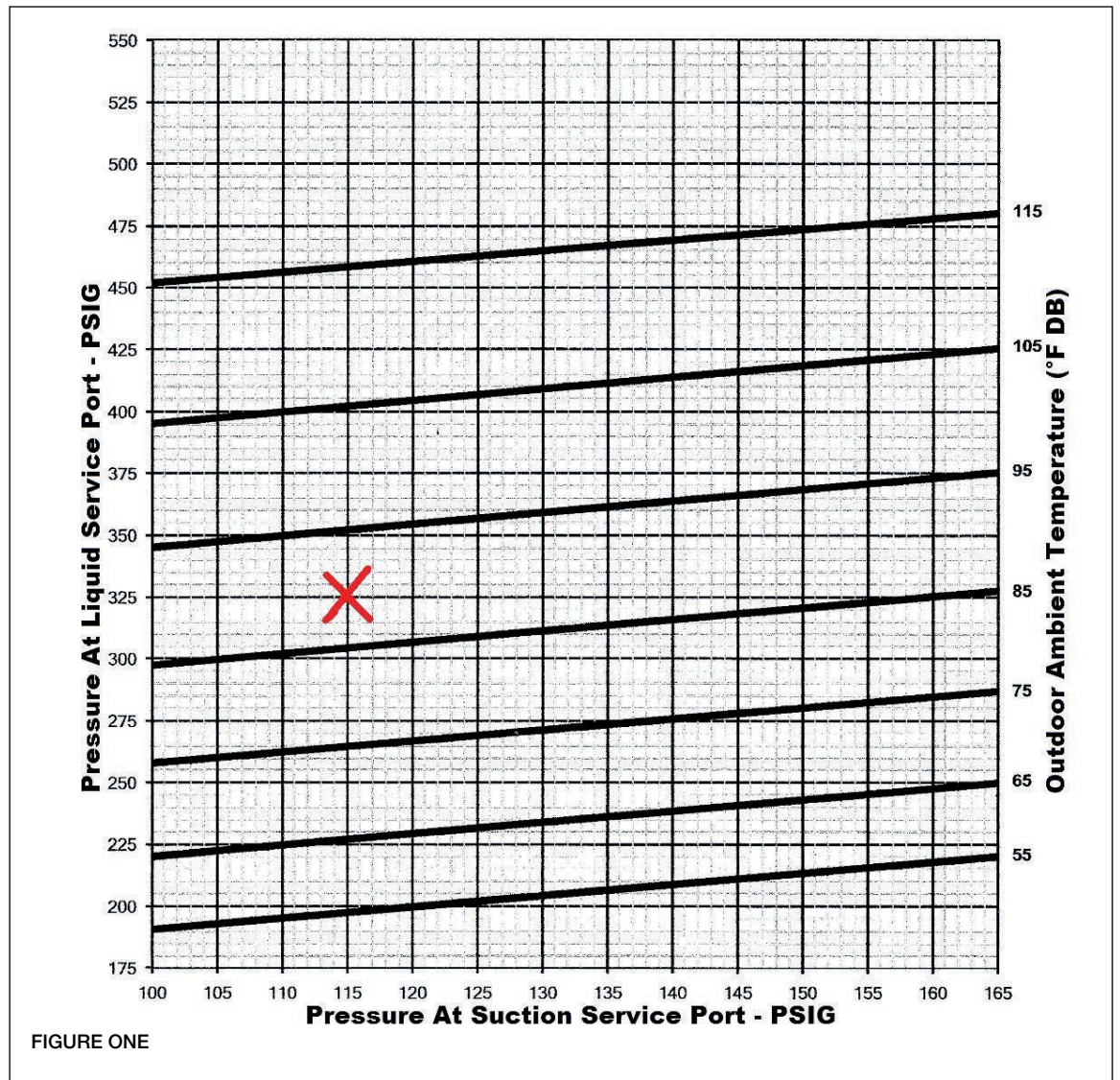
Your troubleshooting question: *What is the underlying cause for the poor performance of this unit?*

If you believe you have the correct answer to one of Jim Johnson's Troubleshooting Problems, please submit it by email to Jim Johnson at [icntroubleshooting@techtrainassoc.com](mailto:icntroubleshooting@techtrainassoc.com) or by U.S. Mail to: Technical Training Associates, PO Box 2259, Green Valley, AZ 85622-2259.

In your email subject line please include "Troubleshooting Answer" and indicate which month the question you are responding to was published.

Correct answers will be entered into a drawing and will be eligible to receive a copy of Jim Johnson's video "Evaluating Refrigeration Systems: Troubleshooting & Identifying Problems."

Continued on Page 25



## Technical Training

### Growing Green Technicians Part 164: TEV Charging Charts

By Jim Johnson  
Contributing Editor

In last month's segment in this series, we covered the process of accomplishing wet bulb and dry bulb temperature tests in the return and supply duct systems of a comfort cooling system to check for positive air leakage problems. In this issue, we'll move on to another next step in evaluating system performance of a split system, determining if the refrigerant charge is correct. And we'll begin that process by employing what are known as curve charts that are provided by the equipment manufacturer.

Here are four factors we'll plug in to illustrate refrigerant charging curve selection and application:

1. The refrigerant is R-410A
2. The metering device is a Thermostatic Expansion Valve
3. The line length is 30 ft.
4. The line lift is 10 ft.

Our first chart is known as a Curve Selection Chart, shown in

**Figure One.**

The purpose of this chart is to determine which curve we will employ for our system evaluation, either the Upper Curve, Middle Curve, or Lower Curve. And we accomplish this by considering the information above regarding the line and length lift. As you can see from the red intersecting lines on the chart that shows our lift at 10 ft. and our length at 30 ft., we'll be employing the center curve line to our second chart, shown in **Figure Two.**

In this illustration, you can see that we have determined by checking at the liquid line service valve that the liquid line temperature is 86°F and the liquid refrigerant pressure is 310 PSIG.

With our temperature and pressure measurements accomplished and plugging the information into our second chart, we note that our plotting shows that the system is operating normally. In the event that the process showed abnormal operation with our intersecting point being at the upper curve, or above, we would

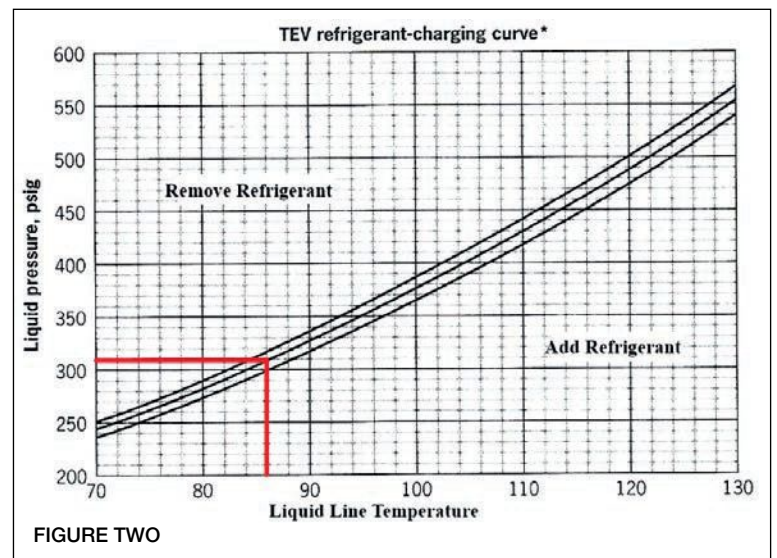
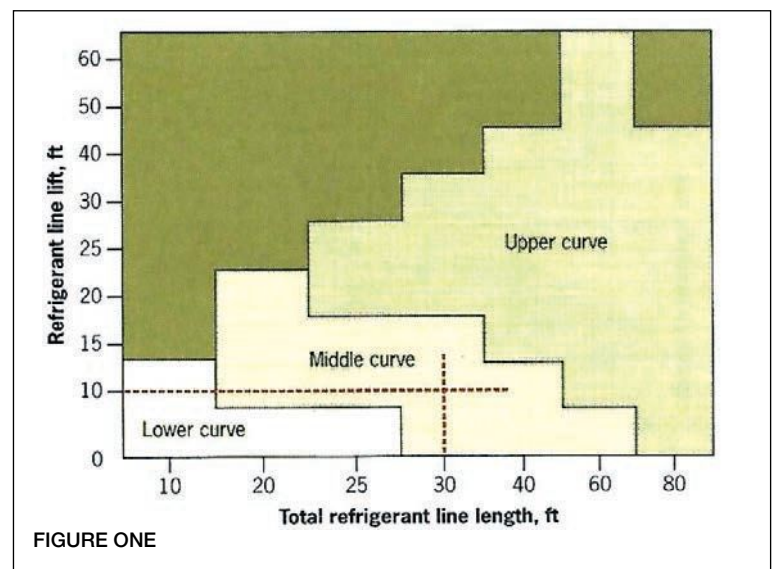
have to remove refrigerant. Or, if the abnormal operation was illustrated with our intersecting point at the lower curve, we would have to add refrigerant.

The final point to consider with this process is that since our system employs a TEV, adding refrigerant increases subcooling, while removing refrigerant decreases subcooling. This is important to understand because when you consult a temperature/pressure chart, you will note that it shows that the saturation (boiling point) of R-410A at 310°F is approximately 99°F.

Which means that the conditions we plotted on our chart shows that the system is operating with 13°F subcooling, which we determine by the following:

$$(99^{\circ}\text{F} - 86^{\circ}\text{F} = 13^{\circ}\text{F})$$

And, with the final result being that when our curve selection chart indicated that we would be employing the middle curve, and when our temperature and pressure measurements on our second chart showed that our plot was, in fact, showing the middle curve, we determined that the system was performing efficiently.





## The Best Workwear for HVAC Employees

By Nick Warrick  
[www.allseasonsuniforms.com](http://www.allseasonsuniforms.com)

First impressions are always the most important. You want your HVAC employees looking their best when they arrive at clients' homes. It is essential that homeowners feel comfortable enough to allow strangers into their homes. Choosing workwear for your HVAC employees will enormously impact your business. Here are some things to consider.

### Professionalism

Employees wearing clean and professional workwear or uniforms will make a positive impression on clients. The name of the company and employee should be on the workwear.

All HVAC employees from your company should wear a standard uniform. The employees will feel much more confident, which will be evident in the way they carry themselves.

The best workwear has the employee's name embroidered right on it. The client can see the name, making it easier to call the company with any issues. Having workwear the same color as your company logo or brand is best because it makes it much easier to recognize the company.

When all employees wear the same uniform, the staff is more cohesive. Your employees won't have to worry about ruining their attire or social barriers in the workplace. Everyone will be wearing the same thing, so they won't have the stress about not fitting in.

### Confidence

Employees wearing durable workwear and uniforms can be a great source of advertisement for your business. It is also a great way to inspire confidence with your existing clients, and people will instantly recognize your uniform colors and branding.

Workwear or uniforms with

your company or brand colors are a great marketing tool. Employees on their lunch break might advertise your company to a restaurant full of potential clients as they grab their takeout.

Confident employees will help build a positive reputation for your HVAC business. Clients will appreciate employees that are knowledgeable and capable. Excellent service will create a lasting impression, and you will surely hear from those clients again.

### Safety

The safety of HVAC employees is one of the main priorities. Choose HVAC technician clothing that will protect your employees.

Every HVAC technician should have a long-sleeved shirt, long pants, goggles, face-shield or mask, steel-toed boots, work shoes, and heavy gloves. Some companies recommend that their HVAC technicians wear hard hats and respirators. Each job site will be different, and the safety measures will change accordingly.

The safety workwear will protect employees from exposure to chemicals such as refrigerants. The safety gear will protect them from bacteria and mold, which may be found in some attics and basements. There is even the chance of exposure to carbon monoxide.

The proper high-quality personal protective clothing will ensure that employees are protected from injuries. They will be safe from head, hand, and leg injuries, and their safety clothing will also prevent injuries like cuts and abrasions.

HVAC technicians work inside and outside the home when installing HVAC units for significant amounts of time. Their work clothes must protect them against extreme cold and heat.

### Durability

It is essential to choose very durable workwear. HVAC techni-

cians must complete strenuous tasks because their job is labor intensive, and their clothes must be tough enough to withstand everyday work and laundering. Your employees' workwear should always look fresh and presentable as they resist wear and tear.

Companies should consider investing in suitable workwear for their employees because replacing them as often will not be necessary. Good quality workwear is durable and will look great even after frequent laundering.

### Comfort

The comfort of your employees is also paramount. Happy and comfortable employees will be much more productive throughout their day. Courteous employees are among the best ways to promote and advertise your company, and clients appreciate

excellent service.

HVAC technicians frequently bend, stoop, or stretch; their comfort means wearing clothing that will not bunch, bind, or chafe. Sometimes, they might have to lie down on dirty floors meaning they should feel protected from what's underneath.

It would help if you also chose workwear with multiple pockets in the shirt and the pants. Employees can always keep what they need on them, which is organized. They can keep tools they frequently use in their pockets or even their cell phone.

### Temperature

HVAC employees work inside and outside the home. They often work in blistering hot attics or damp basements and need clothing to protect them from the elements.

Choosing workwear that will

not trap heat is essential, causing them to overheat. The work clothes must be breathable and keep the employee warm in cold weather and cool in hot weather.

Employees should have long sleeves for the cooler months and sweaters and warm coats for the winter months. Their workwear should reflect the season, and they should be prepared for anything.

### Fabric Choice

The fabric choice is essential for the durability of your workwear. You should use double-stitched, rugged fabric that will resist wear and tear. A durable material can withstand complex, strenuous labor tasks.

### Mobility

The installation of HVAC units sometimes requires the employees

Continued on Page 31

## Troubleshooting

Continued from Page 24

### Answer to Last Month's Troubleshooting Problem

The next step we need to take in servicing this equipment is to replace the compressor. Our gauge readings showed that pressure differential of the refrigeration system was lower than it should be, indicating a mechanical failure of the compressor.

The winner of last month's Troubleshooting is:

Steve Mainville

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BUSINESS ELITE

# New Products

## YELLOW JACKET A2L



Ritchie Engineering Company, Inc., the leader in service tools for HVAC/R professionals and manufacturer of YELLOW JACKET® products, is proud to introduce new A2L Manifolds.

The **YELLOW JACKET®** A2L Test & Charging Manifolds for use with R-32/454B/410A refrigerants are available in popular Series 41, TITAN® and BRUTE II® Manifolds. They are light-weight for handling ease with the durability and reliability required for repeated, rugged use. Sold as manifold only or with a 3-pack of YELLOW JACKET® PLUS II™ 1/4" Hoses 60". The BRUTE II Manifold ships standard with protective gauge boots or they may be ordered separately.

YELLOW JACKET® offers a wide range of A2L Compatible HVAC/R Service Tools... from recovery machines, vacuum pumps, P51-870 Digital Manifold, YJACK® Wireless Probes, leak detector, refrigerant charging scale, to a large variety of manifolds.

**More information:** [www.yellowjacket.com/product/a2l-compatible-service-tools/](http://www.yellowjacket.com/product/a2l-compatible-service-tools/).



## Nibco Inc. PVC Termination Vent Screens



**Nibco Inc.** introduces its PVC Termination Vent Screens (#4818-SCRN) for high efficiency appliance lines in residential construction. The new vent screens prevent wildlife, leaves and debris from blocking PVC exhaust vent pipes.

Available in 2", 3" and 4" diameter sizes, the vent screens are easy to install by push or interference fit with PVC or ABS sockets. No solvent cement or glue is required for installation.

"These new termination vent screens are ideal for preventing unwanted matter from entering pipes," said Marilyn Morgan, senior product manager-metal fittings, of NIBCO. "A simple

investment in vent screens can prevent unnecessary problems and damage due to pipe obstruction or infestations from pests."

The vent features a stainless-steel screen with 1/4" mesh opening that is corrosion resistant and allows for maximum air flow. The interference fit makes it easy to install and easy to remove during freezing temperatures when condensation could freeze the opening shut.

**More information:** [www.nibco.com](http://www.nibco.com).



## RectorSeal Drain Guard

**RectorSeal**, Houston, a leading manufacturer of quality HVAC/R and plumbing tools and accessories, and a wholly-owned subsidiary of CSW Industrials, Inc. [NASDAQ: CSWI], is now a master distributor of Drain Guard™ HVAC condensate drain guard products.

A significant nuisance and the source of many callbacks to HVAC installations, white slime, algae, fungus, and bacteria co-mingle and can cause failures in condensate drain lines. A simple one-time installation of a Drain Guard T-Body assembly and cartridge provides a slow-releasing formula that provides drain protection for up to six months. The unit's transparent design allows for a quick view to ensure the Drain Guard unit is activated and when the next Drain Guard cartridge is needed. After the initial cartridge is exhausted, a kit that contains two cartridges allows up to 12-months of protection against condensate drain line failure.

Patent-pending Drain Guard kits require no electrical components and are easy to install. Drain Guard components are laboratory-tested and are specifically designed for easy installation and operation by HVAC technicians.

John Mulder, owner of Bay Area Heating and Cooling, offers, "My company has experienced hundreds of calls with clogged condensate drains and white slime in evaporator pans. We have tried other products, but Drain Guard offers the best solution for eliminating white slime and keeps condensate drains flowing. It saves time during installation and helps avoid unnecessary and expensive customer callbacks. We install Drain Guard on every new instal-



lation and have stocked our entire fleet with the product."

Armando Diaz, at Badger Bob's Services, advises, "We used many other products attempting to solve drain line back-ups with little success until we tried Drain Guard. We now use it with new installations, service calls, and routine maintenance calls. It's been a great product providing outstanding performance to hundreds of our HVAC customers."

"We believe in the strength of American labor," states Todd Thompson, owner of Drain Guard. "Materials are sourced across the United States, and we consistently test the quality of all our products. Drain Guard is a simple solution that provides long-lasting and proven protection."

**More information:** [www.rectorseal.com](http://www.rectorseal.com).



## U.S. Boiler Company Condensing Boiler App



**U.S. Boiler Company** has introduced the new USB-Connect smartphone application to expedite and streamline installation, service and troubleshooting of all its current and recent condensing and combi boilers.

The app, which interfaces with all models of Alta, Aspen, Alpine and K2 boilers through a Bluetooth adapter, allows technicians to access the boiler control via smartphone or mobile device rather than the boiler display.

USB-Connect actively guides boiler technicians with step-by-step start-up, troubleshooting, and service wizards. Start-up wizards include on-phone LP conversion, customer setpoints and other adjustments. Troubleshooting wizards include questions like "Is boiler not running?" or "Is boiler not responding to DHW demand?", among others. These issues and visible active alarms are often solved with a few taps on the smartphone screen.

The new app features a comprehensive control dashboard, providing instant status, operating details, diagnostic tools, literature and many other resources. All boiler adjustments can be made from the app, including setpoint temperatures, DHW priority, access to error codes, manipulation of fan speeds, configuration of

outdoor reset parameters, etc.

The app also provides live software and firmware upgrades and instant, fingertip access to all manuals and documents. Operating details and service records are viewable on- and off-site, and system snapshots can be archived for later use. Should customer service be needed, U.S. Boiler tech support can view the system in real-time when connected through a technician's smartphone. Jobsite photos can also be posted to the app.

Safe and secure, USB-Connect guides technicians through all service and installation procedures while providing powerful diagnostic tools. This allows technicians to work quickly and accurately, regardless of their familiarity with the product or level of training.

USB-Connect requires only download of the free mobile app and purchase of the USB-Connect Bluetooth adapter kit.

**More information:** [www.usboiler.net](http://www.usboiler.net).



## Continental Fan TCD Blowers

**Continental Fan's** TCD Backward Curved Airfoil Blowers are precision balanced air-moving devices that feature superior performance and exceptional smoothness. TCD Blowers feature TEK backward curved airfoil wheels. These remarkable impellers are manufactured of glass-reinforced polyamide, and are stronger than a comparable steel wheel, at half the weight. Combined with high efficiency TEFC motors, TCD Blowers set new standards for efficient air performance and low sound levels.

TCD Blowers provide the perfect solution to many industrial and commercial air-moving applications.

Features:

- Direct drive, non-overloading TEK impeller
- Highly efficient airfoil (BCA) design
- Epoxy coated steel housing
- Flanged and drilled outlet, ABS inlet cone
- Rugged GRP (polyamide) impeller
- Cast aluminum impeller hub w/bushing
- Single or three phase TEFC motors; also available without



motor

- CW rotation; rotatable to 5 positions

- Capacities to 4,500 cfm

**More information:** [www.continentalfan.com](http://www.continentalfan.com).



## Air Performance Hurricane Rated Louvers



**Air Performance** LLC Announces New Certified Hurricane Impact PTAC and VTAC Louvers with Oversized Options

Air Performance LLC is pleased to announce the launch of the PTG-42 MD and VTG-30 MD hurricane rated louvers for PTAC and VTAC applications, which includes Florida Building Code certification, along with AMCA 540 and Miami Dade high-velocity hurricane zone (HVHZ) certification.

"The Air Performance team is delighted to now lead the industry by offering both PTAC and VTAC hurricane rated louvers in standard and oversized options," says Todd Hicks, vice president of sales and business development. "Whether a standard or custom size louver application is desired, Air Performance is approved to manufacture up to maximum dimensions of 80" w x 30.250" h for the PTAC louver, as well as a maximum dimension of 36" w x 54" h for the VTAC application. By offering oversized options, this allows flexibility in both the building design and application, while also offering the hurricane rating."

Air Performance has been providing Hurricane Rated Louvers for various applications for many years. However, the newly certified PTG-42 MD and VTG-30 MD are ground-breaking by offering building designers, window manufacturers, and OEMs the flexibility to not only meet the stringent criteria needed for hurricane impact ratings, but also the oversized dimension options to accommodate specific building designs.

According to the National Oceanic and Atmospheric Administration (NOAA), although we haven't seen more hurricanes globally over the past century, there has been an increase in hurricane frequency and intensity in the Atlantic basin over the past 40 years.

**More information:** [www.airperformancelc.com](http://www.airperformancelc.com).

# New Products



## RIGID SeeSnake

**RIGID**, a part of Emerson's professional tools portfolio, continues to innovate its complete line of diagnostic solutions, recently expanding functionality within its small-reel line for enhanced user experience inside and out of the drain line. For over 25 years, RIGID has led market innovation in camera reels, setting the industry standard for ruggedness, pushability and ease of use.

Enhancements were made to three SeeSnake Small Reels:

- SeeSnake microDRAIN™ APX™ – Now with TruSense® Technology, the microDRAIN APX has enhanced camera functionality and is ideal for navigating up to 65 feet of tight turns including P-traps and toilets in 1.25- to 4-inch lines. TruSense establishes a two-way datalink between the camera head and a TruSense enabled monitor.

With TruSense, advanced sensors on the camera head convey valuable information about the in-pipe environment, including the high-dynamic range (HDR) image sensor which offers bright, clear in-pipe imaging in difficult

lighting conditions. The TiltSense™ Inclinometer measures the camera's angle and displays the degree of tilt on the monitor – giving professionals a useful indicator of the pitch of the camera in-pipe. When paired with a CSx series monitor, Auto-Image Flip digitally rotates the camera image every 180 degrees.

- SeeSnake NANOreel® – Now with built-in kickstand for improved ergonomics that can be used upright, at a 45-degree angle for improved leverage, or planted on four feet to provide clearance. The SeeSnake NANOreel features a high-flex push cable that can navigate small diameter pipe in up to 82 feet of line. Its small diameter camera head allows the camera to clear sharp bends in 1- to 2 1/2-inch pipe where conventional inspection systems cannot always inspect.

- SeeSnake microREEL® CA™ – This entry-level reel now comes with a built-in kickstand and an improved CA-350 adapter and docking handle to enhance use with the microCA-350 inspection camera. The SeeSnake microREEL CA features a mid-flex push cable ideal for 1.5- to 5-inch diameter pipe and tight-turn radius inspections up to 100 feet.

**More information:**  
www.RIDGID.com.



## Malco Products Eagle Grip

**Malco Products**, one of the nation's leading manufacturers of high-quality American-made hand tools, announced the launch of Eagle Grip, its newest line of professional-grade locking tools. Eagle Grip

Locking Tools are the first full line manufactured at Malco's plant in DeWitt, Nebraska, the original birthplace of the locking pliers.

Forged from premium American steel, Eagle Grip tools deliver stronger and more reliable performance on the job and are backed by Malco's 72-year heritage of innovation, quality and dependability.

Eagle Grip is the strongest locking pliers\* in the world and 100% made in the USA. Malco tools are designed and built to meet the rigorous demands of professional users, and in Malco's in-house testing, Eagle Grip tools outperformed the competition on every measure.

The first 6 products in the Eagle Grip line include locking pliers and clamps for use in sheet metal, automotive, welding and agricul-



ture applications:

- Locking Pliers:
  - 7" & 10" Straight Jaw Locking Pliers
  - 7" & 10" Curved Jaw Locking Pliers with Wire Cutter
- Clamps:
  - 11" Locking C-Clamps
  - 11" Locking C-Clamps with Swivel Pads

**More information:**  
www.eaglegripusa.com.

## Editorial Focus

Continued from Page 22

cassette is compatible with Mitsubishi Electric Multi-zone Outdoor systems. It can be easily installed as a system replacement or in new construction projects. Key features include a smaller 6,000 BTU/H capacity, new smaller footprint designed to fit between I-joists common in new construction (other models fit standard joists), and new grille with smaller dimensions. The Ez Fit ceiling cassette design is effective regardless of ceiling height because of its adjustable airflow, and its auto vane control is capable of adjusting air direction based on a homeowner's comfort needs. All Ez Fit models can be serviced from directly beneath the unit itself, without requiring an access panel.

**More information:**  
www.mitsubishicomfort.com.

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# 2023 TRAINING

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## SOCALGAS, DOWNEY

### **JUNE**

#### **Air Distribution Module**

(Four-Night Class) Instructors: Mike Griffin / John Dalton

Wed., June 21 – Part 1

Thurs., June 22 – Part 2

Wed., June 28 – Part 3

Thurs., June 29 – Part 4

### **JULY**

#### **System Performance Module**

(Four-Night Class Cont. to August) Instructors: Mike Griffin / John Dalton

Wed., July 26 – Part 1

Thurs., July 27 – Part 2

### **AUGUST**

#### **System Performance Module**

(Four-Night Class Cont. from July) Instructors: Mike Griffin / John Dalton

Wed., Aug. 2 – Part 3

Thurs., Aug. 3 – Part 4

### **SEPTEMBER**

#### **NATE CORE & Gas Heating Training (Webinar)**

(Four-Night Class) Instructors: Mike Griffin / John Dalton

Wed., Sept. 6 – Part 1

Thurs., Sept. 7 – Part 2

Wed., Sept. 13 – Part 3

Thurs., Sept. 14 – Part 4

### **OCTOBER**

#### **NATE AC/HP Refrigeration & Air Distribution Training (Webinar)**

(Four-Night Class) Instructors: Mike Griffin / John Dalton

Wed., Oct. 4 – Part 1

Thurs., Oct. 5 – Part 2

Wed., Oct. 25 – Part 3

Thurs., Oct. 26 – Part 4

Sat., Oct. 28 - NATE Exam, 7:30 a.m.

## SOUTHERN CALIFORNIA EDISON, IRWINDALE

### **JUNE**

#### **NATE AC/HP Refrigeration & Air Distribution Training**

(Four-Night Class) Instructor: John Dalton

Wed., May 31 – Part 1

Thurs., June 1 – Part 2

Wed., June 7 – Part 3

Thurs., June 8 – Part 4

Sat., June 10 - NATE Exam, 7:30 a.m.

### **SEPTEMBER**

#### **System Diagnostics Module**

(Four-Night Class) Instructor: John Dalton

Wed., Sept. 20 – Part 1

Thurs., Sept. 21 – Part 2

Wed., Sept. 27 – Part 3

Thurs., Sept. 28 – Part 4

### **OCTOBER**

#### **Non-Res ATE Acceptance**

(Two-Night Class) Instructors: Mike Griffin / John Dalton

Wed., Oct. 11 – Part 1

Thurs., Oct. 12 – Part 2

#### **Non-Res ATT Acceptance**

(Two-Night Class) Instructors: Mike Griffin / John Dalton

Wed., Oct. 18 – Part 1

Thurs., Oct. 19 – Part 2

### **NOVEMBER**

#### **System Performance Module**

(Four-Night Class) Instructors: Mike Griffin / John Dalton

Wed., Nov. 1 – Part 1

Thurs., Nov. 2 – Part 2

Wed., Nov. 8 – Part 3

Thurs., Nov. 9 – Part 4

## SOUTHERN CALIFORNIA EDISON, TULARE

### **JUNE**

#### **AC/HP Refrigeration Module**

(Four-Night Class) Instructors: Mitch Bailey / TBA

Tues., June 6 – Part 1

Wed., June 7 – Part 2

Tues., June 13 – Part 3

Wed., June 14 – Part 4

### **SEPTEMBER**

#### **System Diagnostics Module**

(Four-Night Class) Instructors: Mitch Bailey / TBA

Wed., Sept. 20 – Part 1

Thurs., Sept. 21 – Part 2

Wed., Sept. 27 – Part 3

Thurs., Sept. 28 – Part 4

### **OCTOBER**

#### **NATE CORE & Gas Heating Training**

(Four-Night Class) Instructors: Mitch Bailey / TBA

Wed., Oct. 11 – Part 1

Thurs., Oct. 12 – Part 2

Wed., Oct. 18 – Part 3

Thurs., Oct. 19 – Part 4

### **NOVEMBER**

#### **NATE AC/HP Refrigeration & Air Distribution Training**

(Four-Night Class) Instructors: Mitch Bailey / TBA

Wed., Nov. 1 – Part 1

Thurs., Nov. 2 – Part 2

Wed., Nov. 15 – Part 3

Thurs., Nov. 16 – Part 4

Sat., Nov. 18 - NATE Exam, 7:30 a.m.

**Note:** When registering for a training class please make sure you honor that commitment and show up on time and prepared. If you cannot attend, please call (818) 551-1555 and cancel in ample time. Thank you.

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# CLASS SCHEDULE

SERVICE (CAQI/QM/QS) & NORTH AMERICAN TECHNICIAN EXCELLENCE (NATE)

## SAN DIEGO GAS & ELECTRIC

### JUNE

#### Air Distribution Module (Webinar)

(Four-Night Class) Instructors: Mike Griffin / John Dalton

Mon., June 5 – Part 1  
 Tues., June 6 – Part 2  
 Mon., June 12 – Part 3  
 Tues., June 13 – Part 4

#### System Performance Module (Webinar)

(Four-Night Class) Instructors: Mike Griffin / John Dalton

Mon., June 19 – Part 1  
 Tues., June 20 – Part 2  
 Mon., June 26 – Part 3  
 Tues., June 27 – Part 4

### JULY

#### Non-Res ATE Training (Webinar)

(Two-Night Class) Instructors: Mike Griffin / John Dalton

Wed., July 5 – Part 1  
 Thurs., July 6 – Part 2

#### Non-Res MATT Training (Webinar)

(Two-Night Class) Instructors: Mike Griffin / John Dalton

Wed., July 12 – Part 1  
 Thurs., July 13 – Part 2

#### Chiller Module (Webinar)

(Two-Night Class) Instructors: Mike Griffin / John Dalton

Wed., July 19 – Part 1  
 Thurs., July 20 – Part 2

### AUGUST

#### Commercial Cooling Tower Module (Webinar)

(Two-Night Class) Instructors: Mike Griffin / John Dalton

Wed., Aug. 9 – Part 1  
 Thurs., Aug. 10 – Part 2

#### Boiler Module (Webinar)

(Two-Night Class) Instructors: Mike Griffin / John Dalton

Wed., Aug. 16 – Part 1  
 Thurs., Aug. 17 – Part 2

#### Commercial Refrigeration Module (Webinar)

(Two-Night Class) Instructors: Mike Griffin / John Dalton

Wed., Aug. 23 – Part 1  
 Thurs., Aug. 24 – Part 2

### SEPTEMBER

#### Electrical Module (Webinar)

(Four-Night Class) Instructors: Mike Griffin / John Dalton

Mon., Sept. 11 – Part 1  
 Tues., Sept. 12 – Part 2  
 Mon., Sept. 18 – Part 3  
 Tues., Sept. 19 – Part 4

### OCTOBER

#### System Diagnostics Module (Webinar)

(Four-Night Class) Instructors: Mike Griffin/John Dalton

Mon., Oct. 16 – Part 1  
 Tues., Oct. 17 – Part 2  
 Mon., Oct. 23 – Part 3  
 Tues., Oct. 24 – Part 4

### NOVEMBER

#### NATE Core & Gas Heating Training (Webinar)

(Four-Night Class) Instructors: Mike Griffin/John Dalton

Mon., Nov. 13 – Part 1  
 Tues., Nov. 14 – Part 2  
 Mon., Nov. 20 – Part 3  
 Tues., Nov. 21 – Part 4

### DECEMBER

#### NATE AC/HP Refrigeration & Air Distribution Training (Webinar)

(Four-Night Class) Instructors: Mike Griffin/John Dalton

Mon., Dec. 4 – Part 1  
 Tues., Dec. 5 – Part 2  
 Mon., Dec. 11 – Part 3  
 Tues., Dec. 12 – Part 4

## PACIFIC GAS AND ELECTRIC COMPANY, STOCKTON

### JUNE

#### System Performance Module (Webinar)

(Four-Night Class) Instructor: Mitch Bailey

Wed., June 21 – Part 1  
 Thurs., June 22 – Part 2  
 Wed., June 28 – Part 3  
 Thurs., June 29 – Part 4

### NEW: SPANISH Classes

### JUNIO

#### Capacitación de Apoyo

#### NATE HVAC/R (Seminario Virtual)

(Clase-Cuatro Noches) Instructor: Rene Aguinada

Lunes, Junio 5 – 1a Parte  
 Martes, Junio 6 – 2a Parte  
 Lunes, Junio 12 – 3a Parte  
 Martes, Junio 13 – 4a Parte

### SEPTEMBER

#### System Diagnostics Module (Webinar)

(Four-Night Class) Instructor: Mitch Bailey

Wed., Sept. 6 – Part 1  
 Thurs., Sept. 7 – Part 2  
 Wed., Sept. 13 – Part 3  
 Thurs., Sept. 14 – Part 4

### OCTOBER/NOVEMBER

#### NATE Core & Gas Heating Training (Webinar)

(Four-Night Class) Instructor: Mitch Bailey

Wed., Oct. 25 – Part 1  
 Thurs., Oct. 26 – Part 2  
 Wed., Nov. 8 – Part 3  
 Thurs., Nov. 9 – Part 4

### NOVEMBER

#### NATE AC/HP Refrigeration & Air Distribution Training (Webinar)

(Four-Night Class) Instructor: Mitch Bailey

Mon., Nov. 20 – Part 1  
 Tues., Nov. 21 – Part 2  
 Mon., Nov. 29 – Part 3  
 Tues., Nov. 30 – Part 4

Sat., Dec. 2 - NATE Exam, 7:30 a.m.

**n EXCEPT Where Noted.**  
**IOUS/CA COVID requirements.**  
**format is subject to change**  
**rg (Training)**

This program is funded by California utility customers under the auspices of the California Public Utilities Commission.



# Indoor People



EUGENE SILBERSTEIN

HVAC Excellence, a standards organization dedicated to improving education in the HVACR industry, is proud to announce the appointment of **Eugene Silberstein** as its new National Programs Director.

With over 40 years of experience in the HVACR industry, Silberstein is a widely recognized expert in the field. Since September of 2015 he served as the Director of Technical Education and

Standards at the ESCO Institute. Throughout his extensive HVACR career, he held many positions including field technician, system designer, service contractor, professor, administrator, consultant and industry-leading author. Silberstein has over 25 years of teaching experience and has taught at private, secondary and postsecondary institutions. He can be seen presenting at many national HVACR events on a wide variety of topics important to our industry. He has also authored and/or co-authored numerous textbooks and articles on HVACR-related topics.

Silberstein earned his dual Bachelor's Degree from The City College of New York, where he studied electrical engineering, economics, and operations management. He earned his Masters of Science degree from Stony Brook University, where he specialized in Energy and Environmental

Systems, studying renewable and sustainable energy sources. In 2010, he earned his Certified Master HVACR Educator (CMHE) credential from HVAC Excellence. Eugene also carries ASHRAE's BEAP credential, which classifies him as a Building Energy Assessment Professional.

As National Programs Director, Silberstein will be responsible for overseeing the development and implementation of HVAC Excellence's national training and certification programs, including programmatic accreditation, as well as working with industry partners to identify emerging trends and technologies and help training programs implement these technologies into their curricula.

"We are thrilled to have Eugene as our new National Programs Director," said Howard Weiss, President of HVAC Excellence. "His wealth of knowledge and experience in the HVACR industry will be invaluable as we continue to develop innova-

tive training and certification programs that meet the evolving needs of the HVACR and other building science industries."

Silberstein expressed excitement about his new role, stating, "I am honored to take on this new role at HVAC Excellence and look forward to working with industry partners to develop training and certification programs that help prepare the next generation of HVACR professionals."



STEPHEN KRIVAN

**Stephen Krivan** has joined the Airzone North America team as the Regional Sales Manager for the Southwest. Based in Arizona, Stephen brings a wealth of experience, having spent over 8 years in the HVAC industry. His extensive knowledge, proven track record in business development, and robust network will undoubtedly benefit the Airzone team.

Since launching operations in North America in 2021, Airzone has experienced rapid growth and expansion, capturing market share in VRF, inverter, and ductless controls while introducing unique zoning solutions for leading manufacturers. Stephen's appointment to the team highlights the company's commitment to strengthening its presence and driving further growth in the region.



JOHN LANIER

Air-Conditioning, Heating & Refrigeration Institute's (AHRI's) board of trustees of North American Technician Excellence (NATE) named current COO **John Lanier** as president of the

organization, effective immediately. Lanier also serves as COO of AHRI, which has an administrative service agreement with NATE.

Founded in 1997, NATE is the one of the nation's largest non-profit certification organizations for HVACR technicians. In recent years, under the leadership of John Lanier and the NATE board of trustees, the organization intentionally shifted the company's vision to incorporate technician development in addition to its historical emphasis on testing and certification. In recognition of its excellence and indispensable nature within the industry, NATE began to develop ways to support and train technicians on their path toward certification. Now, a core focus of NATE's mission is to provide accessible resources and tools to technicians, an overall strategy change that has led to the development of a new pathway to certification, with the Certified HVAC Professional (CHP-5); official NATE study guides; and NATE Training Academy, an online training platform.

Prior to joining the NATE team, Lanier held a variety of executive leadership roles, most notably as senior vice president of operations at the National Federation of Independent Business, one of the nation's largest independent business associations. For more information, visit [www.ahrinet.org](http://www.ahrinet.org).



FLAVIA BADER

Nidec Motor Corporation has expanded the marketing staff at its St. Louis headquarters with the addition of **Flavia Bader** as Marketing Communications Manager. She is part of Nidec's commercial and industrial motors division for the Americas, serving industries that rely on high-efficiency motors including HVAC, pumping and wastewater.

Bader has more than 20 years of experience in the industry, having worked at Emerson Electric in marketing and product management roles. She has a BA in communications and an MBA, both from the University of Louisville.



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# Indoor People

Refrigerated Solutions Group (RSG), a provider of refrigerated equipment and service, recently announced an addition to their sales team. **David Shirk** joined RSG as strategic account manager and will report directly to Craig Hammel, director of strategic accounts.

Shirk has over 15 years of experience in the foodservice industry. Most recently, he was strategic



DAVID SHIRK

revenue and cultivating long lasting, effective client relationships will assist RSG in reaching the next level and aligns with the dedication of the outstanding team we have already assembled. I am extremely excited to have David join the team," said Hammel.



**Monique Radersma**, a former director of Engineering at DENSO's thermal manufacturing facility in Guelph, Ontario, Canada has won a STEP Ahead Award from The Manufacturing Institute. The STEP Ahead Awards annually honor women who have demonstrated excellence and leadership in their careers and represent all levels of the manufacturing industry, from the factory floor to the C-suite.

"It's an honor to be recognized alongside an exceptional group of



MONIQUE RADERSMA

women committed to making an impact in their companies and communities," said Radersma. "I'm proud of what I accomplished in my 35-plus years in the automotive industry, with over 15 of those at DENSO, and am excited to use the skills I've built in that time to continue to encourage women to pursue technical fields."

## GOLD KEY Contest Winner

The winner of last month's ICN Gold Key contest is:



Chavonne Sales  
Allied Refrigeration

Sales is the winner of a \$50 Amazon gift card, courtesy of ICN. Congrats!

account manager at Hoshizaki America, where he worked with many distinguished restaurant chains and dealer partner teams in the Eastern U.S.

"I'm honored to join the RSG family and be able to provide their quality products to the marketplace," said Shirk.

"David's passion for increasing

## HVAC Clothing

Continued from Page 25

to work in awkward positions. Their clothing must allow them a free range of motion when stretching, bending, or squatting.

They must often climb up and down ladders, so their clothing must be loose enough for full motion yet tight enough not to get caught on anything.

## Performance

When you choose suitable workwear for your employees, you will see more positivity among your staff. The employees will be happy and comfortable in their clothing, and their positive attitude will be evident to clients.

Company owners might find it easier to conduct performance reviews on their employees when they have workwear embroidered with their names. Happy or disgruntled clients can call with comments

about specific employees, and company owners will find it easier to keep track of employees on different job sites.

## Final Thoughts

Companies that choose the correct workwear for their employees reap the rewards when they realize the excellent benefits that it provides. Great workwear is great for the company owner but also suitable for employees and clients.

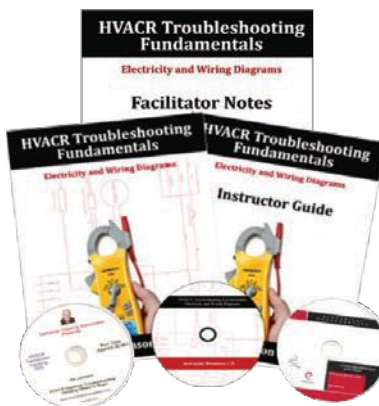
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- One (1) DVD/Video: *Electrical Fundamentals for HVACR Technicians* (Run Time: 120 Minutes)
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