

# INDOOR COMFORT

APRIL 2023

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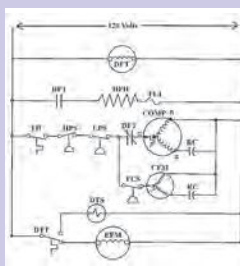
THE WEST'S LEADING MONTHLY NEWSMAGAZINE FOR THE AIR CONDITIONING, HEATING, REFRIGERATION, SHEET METAL AND VENTILATING INDUSTRIES



## Editorial Focus

What's new? Find out here as ICN takes a look at the latest offerings in Indoor Air Quality, Zoning and Air Distribution Products.

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## Troubleshooting

This month's problem involves a walk-in freezer with a malfunctioning compressor.

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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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## DOE Proposes New Standards for Residential Appliances

**Proposed rules build on decades-long collaboration with public and private sector to deliver safer, more efficient appliances.**

The U.S. Department of Energy (DOE) has proposed new energy-efficiency standards for refrigerators and clothes washers that will lower household energy costs and significantly reduce pollution. DOE expects the new standards, which have not been updated in over a decade, to save American consumers approximately \$3.5 billion per year on their energy and water bills. These proposed rules are the Biden-Harris Administration's latest steps in delivering savings through appliance efficiency, as directed by Congress.

"With today's proposals, we're building on a decades-long effort with industry to ensure tomorrow's appliances work more efficiently and save Americans money," said U.S. Secretary of Energy Jennifer M. Granholm. "Over the last forty years, at the

direction of Congress, DOE has worked to promote innovation, improve consumers' options, and raise efficiency standards for household appliances without sacrificing the reliability and performance that Americans have come to expect."

Previous DOE rulemakings have substantially increased the energy efficiency of refrigerators and clothes washers while allowing manufacturers the flexibility to continuously improve their products. Today, the typical new refrigerator uses 75% less energy than its 1973 counterpart – while offering roughly 20% more storage capacity and more useful features. In that 40-year span, DOE raised the efficiency standard for refrigerators three times. Similarly, today's clothes washers use 70% less energy than in 1990 and offer 50% more tub capacity. The new proposed rules will continue this trajectory of innovation and

Continued on Page 27

## Industry Events

### More than 42K Attend AHR Expo in Atlanta

The AHR Expo (International Air-Conditioning, Heating, Refrigerating Exposition) wrapped up the 2023 show in Atlanta with an exigent focus on reshaping the future of the industry – together.

"This year's show is one for the books," said Show Manager Mark Stevens. "We heard it in every corner of the industry - HVACR is gearing up for an exciting path forward. As a collective force, we are focused on change and growth inside our industry, as well as anchoring our combined efforts on serious developments to set the course for the future of HVAC. It's hard to miss the excitement."

#### The stats indicate the industry's resurgence

The 2023 AHR Expo hosted 42,794 verified visitor and exhibitor personnel, 1,779 total exhibitors, 425 of which were international, and filled 486,000+ square feet of exhibit



space. While these numbers are still recalibrating from pre-Covid years, the strong showing from new audiences is a welcome sign of growth and a hopeful indicator for future workforce development.

Atlanta also hosted 17 industry podcasters in the show's Podcast Pavilion. Industry podcasters dedicated their time at the show covering trending topics and speaking to leaders across the industry with the added excitement of a live audience. The pavilions remained

active all three days, resulting in exciting content to roll out in the coming weeks. Full session recordings will be available on ahrexpo.com once produced content is released by hosting podcasters.

#### Community and communication

There is a growing sense of community in HVACR cur-

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**IHACI 2023**

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for more information.



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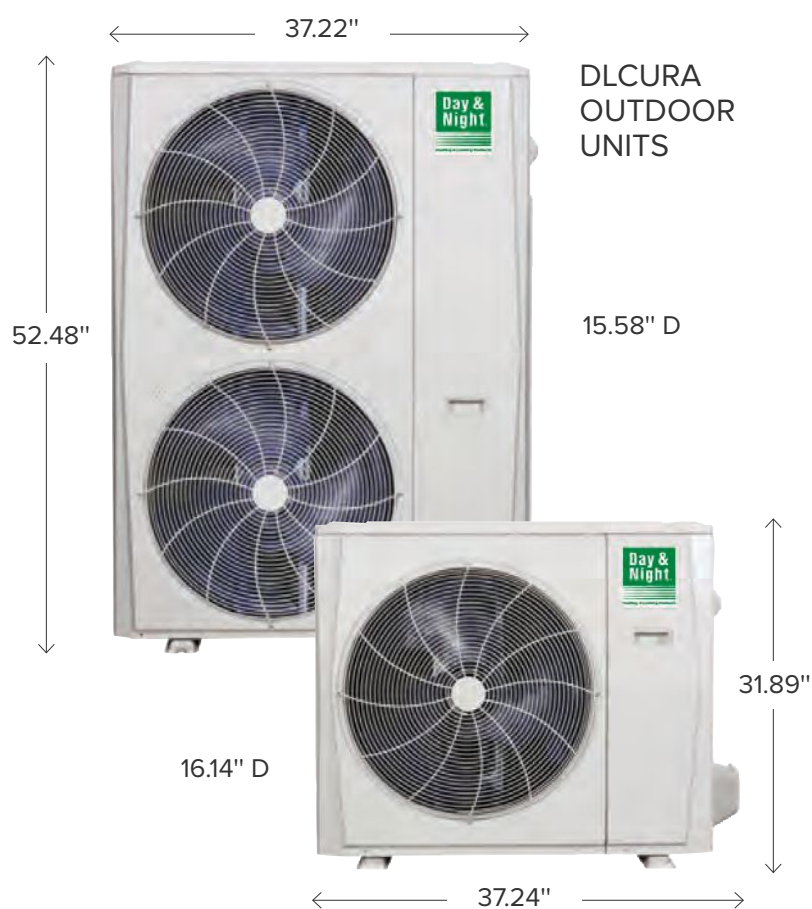
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## CALIFORNIA



ABC SOUTHERN CALIFORNIA CHAPTER MEMBERS AT THE RIBBON CUTTING CEREMONY.

### ABC SoCal Chapter Opens New Center in Riverside, Calif.

**Riverside, Calif.** – The Associated Builders and Contractors Southern California Chapter (ABC) recently hosted hundreds of community members as they cut the “ribbon” of their third training center in Southern California.

“Today is a celebration, but it also represents a continued commitment by ABC and our membership to supply a skilled trained and safe construction workforce for Southern California,” stated Nick McFayden, ABC SoCal’s Board Chair.

Jon Krystafik, Vice Chairman of the Training Trust, commented, “Our training facility is unique. You may have toured other facilities but with ours you will see we don’t just train one craft. Here, apprentices and craft trainees are receiving cutting edge training in electrical, plumbing, low voltage and HVAC sheet metal.”

Krystafik added, “Our trustees had a dream 10 years ago to train residents in the inland empire. Today it is a reality!”

ABC Southern California Chap-

ter is an association of contractors that believe in the Merit Shop Philosophy. Merit shop encourages open competition and a free enterprise approach that awards contracts and employment based solely on merit, safety, quality, and cost, regardless of labor affiliation.

The chapter is one of 68 throughout the country and represents nearly 400 member companies.

### Daikin Applied Buys Alliance Air Products

**San Diego, Calif.** – Daikin Applied announced that it has acquired Alliance Air Products, the San Diego-based leader in custom air-handling equipment design and manufacturing. Alliance Air’s engineering and technology expertise adds to the Daikin portfolio of high-efficiency equipment and services for data center cooling, and other mission-critical and custom applications. Engineers, and building owners and operators now have a single supplier for end-to-end HVAC solutions, enhancing time to delivery and productivity while

lowering lifecycle costs.

Data center construction, in particular, is expected to grow at a high rate through 2028 and beyond, accelerating the demand for cooling solutions with an emphasis on energy efficiency and sustainability. The combined capabilities of Daikin and Alliance Air address these industry requirements, including chiller-to-computer room air-handler (CRAH) systems that help mitigate a data center’s environmental impact. These systems provide an ideal balance of energy and water conservation.

“Alliance Air has differentiated itself for its manufacturing acumen, creative designs, and nimble work and delivery,” said Jeff Drees, President and CEO of Daikin Applied. “While this acquisition does, indeed, uniquely diversify and strengthen our portfolio, the true advantage is to our customers, especially those with hyper-scale and colocation data centers. The integration with the Alliance Air team will be rapid and seamless so we can bring these benefits to our customers quickly.”

Alliance Air’s unparalleled precision and speed are enabled by its total wrap-around services that deliver comprehensive customer support – from engineering assistance to design, testing and field services. In addition to data center cooling, the merged operations will serve an array of applications that require custom designs, such as hospitals, manufacturing facilities and labs.

“Our customers need cost-effective, energy-efficient solutions that can evolve with their individual needs and larger industry trends,” said Luis Plascencia, who will continue as President and General Manager of Alliance Air Products. “As the number one air-conditioning company in the world, Daikin has the experience and know-how that will allow us to collectively scale with our customers. We’re bringing together exceptional talent, technology and services that truly offer it all – flexibility, reliability, efficiency and sustainability.”

Customers can expect enhanced agility to better serve their design and delivery needs, coupled with 360-degree service and a local approach backed by Daikin’s global resources and recognition.

“This is a pivotal moment for HVAC and data centers, and the timing for this acquisition could not be better,” Drees said. “We know that there are a lot of challenges that come with un-

precedented market growth, and we’re planting our flag to lead the industry in a dynamic and more sustainable direction.”

Visit [www.allianceairproducts.com](http://www.allianceairproducts.com) to learn more about Alliance Air Products, and its equipment and services. For additional information on Daikin Applied, and its full range of commercial and industrial HVAC equipment and solutions, visit [www.daikinapplied.com](http://www.daikinapplied.com). Also, follow the company on LinkedIn for the latest on HVAC technology, services and trends.

For more information or to locate a Daikin Applied representative, visit [www.daikinapplied.com](http://www.daikinapplied.com) or call 800-432-1342.

### Harvest Thermal Named One of Most Innovative Companies in 2023

**Berkeley, Calif.** – Harvest Thermal Inc. has been named to Fast Company’s prestigious annual list of the World’s Most Innovative Companies for 2023.

This year’s list highlights businesses at the forefront of their respective industries, paving the way for the innovations of tomorrow. These companies are setting the standard with some of the greatest accomplishments of the modern world. In addition to the World’s 50 Most Innovative Companies, 540 organizations are recognized across 54 sectors and regions.

“We’re honored to make Fast Company’s Most Innovative Companies list for our groundbreaking HVAC system,” said Dr. Jane Melia, CEO, Harvest Thermal Inc. “After solar and EVs, home heating and hot water is the next frontier in clean energy deployment. Our smart Pod helps homeowners decarbonize their homes effortlessly and affordably. Plus, we kick off a virtuous cycle with load-shifting: The more homes we decarbonize, the cleaner and more resilient the grid becomes.”

Harvest Thermal makes homes more sustainable by replacing gas heating and hot water with a low-carbon system. By shifting the electric consumption of the heat pump to the middle of the day, when the grid is cheap, clean, and abundant with renewable energy, the system cuts carbon emissions by 90% compared to gas and 50% compared to standard heat pump configurations. Homeowners also

save up to 48% on monthly heating bills, enabling cost-effective adoption at scale.

The brains of the system is the Harvest Pod. Using machine-learning-generated algorithms, sensors, and controls, the Pod optimizes for grid emissions, utility rates, energy usage, and customer comfort. It transforms an ordinary water tank into a thermal battery that delivers heating and hot water whenever needed. As more homes electrify their heating and hot water, Harvest Thermal’s IoT system functions as a “virtual power plant,” relieving stress on the grid during winter morning and evening peaks.

“What a strange and thrilling year it has been to honor this year’s Most Innovative Companies,” said Brendan Vaughan, editor-in-chief, Fast Company. “This year’s list compiles some of the most cutting-edge groundbreakers who are changing our world every single day, from legacy organizations, like McDonald’s, to upstarts, like MrBeast, and institutions, such as NASA. Everyone on this list does something completely, uniquely different, yet they all have one thing in common: innovation.”

For more information, visit [www.harvest-thermal.com](http://www.harvest-thermal.com).

### CEC Adopts Resolution to Support Tribal Energy Sovereignty

**Arcata, Calif.** – The California Energy Commission (CEC) approved a resolution recognizing and committing the agency to support California tribal energy sovereignty and independence. The resolution was approved during a first-of-its-kind meeting between Native American tribal leaders and commissioners from the CEC and California Public Utilities Commission (CPUC). Representatives from federal agencies and more than a dozen tribes participated in the event, which was held at Cal Poly Humboldt.

“We’re here because tribal energy sovereignty is a priority, tribal engagement is a priority and tribal partnerships are a priority,” CEC Chair David Hochschild said during his opening remarks. “We cannot build the future we need without first facing the past that we’ve shared.”

The action builds on Governor

Continued on Page 6

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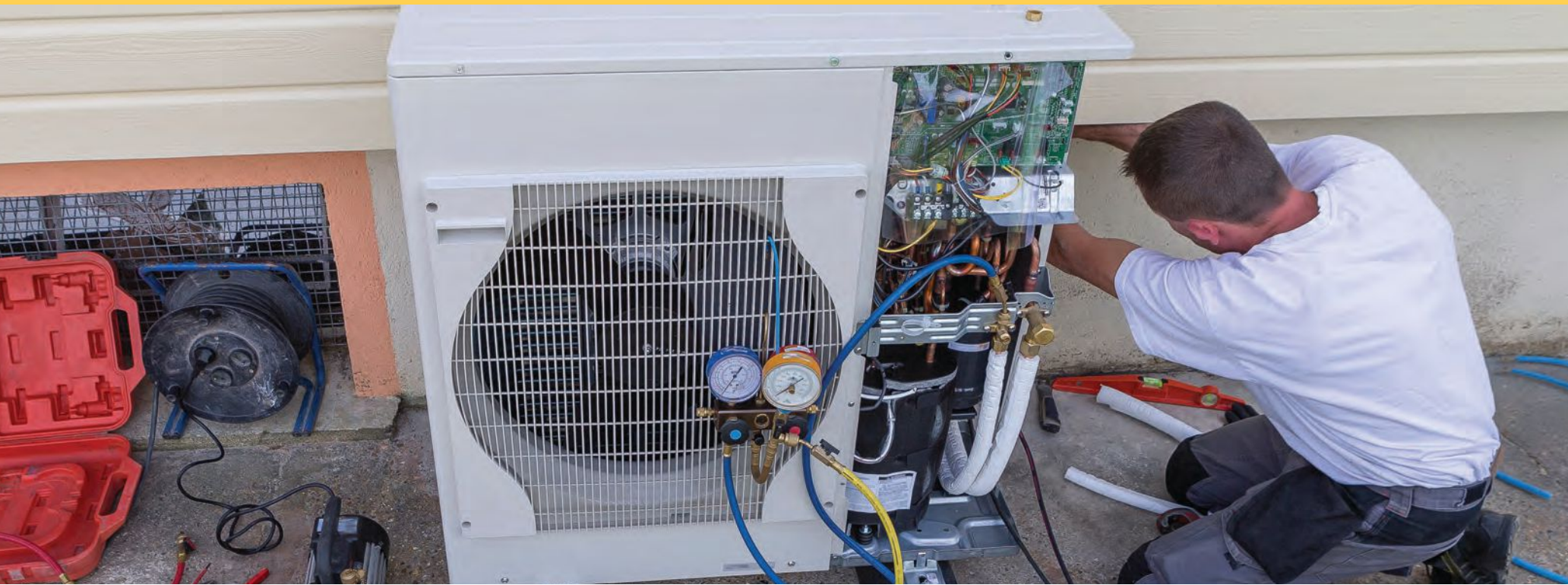
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**NCI Refrigerant-Side Performance Certification Program (Two-Part Series)\***

May 24 & 25 | 8 a.m. to 5 p.m. PT | Tulare, CA

**IHACI NATE AC/HP & Air Distribution Training (Four-Part Series)**

May 31, June 1, 7 & 8 | 6 p.m. to 9 p.m. PT | Irwindale, CA

**NCI Commercial Air Balancing Certification Program (Three-Part Series)\***

June 6, 7 & 8 | 8 a.m. to 5 p.m. PT | Anaheim, CA

**IHACI (CAQI/QM/QS) AC/HP Refrigeration Module (Four-Part Series)**

June 6, 7, 13 & 14 | 6 p.m. to 9 p.m. PT | Tulare, CA

**Basic Heating, Ventilating, Air Conditioning & Refrigeration**

June 15 | 8:30 a.m. to 12:30 p.m. PT | Irvine, CA

**NCI Advanced Air & Hydronic Balancing Certification Program (Five-Part Series)\***

June 19, 20, 21, 22 & 23 | 8 a.m. to 5 p.m. PT | Anaheim, CA

**NCI Performance-Based Selling Bootcamp (Three-Part Series)\***

June 27, 28 & 29 | 8 a.m. to 5 p.m. PT | Anaheim, CA

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Continued from Page 4

Gavin Newsom's 2019 executive order acknowledging and apologizing for historical harms inflicted on California Native Americans and reaffirming the principles of government-to-government engagement with tribes. The resolution establishes goals like increasing access to funding, enhancing consultation and economic diversification. It also details actions such as developing capacity and technical assistance resources, dedicating tribal set-asides, and enhancing land use considerations around the protection of tribal cultural resources in planning clean energy projects.

As a next step, CEC staff will work with California tribes to develop a Tribal Energy Sovereignty Policy to implement the resolution. The policy will formalize CEC's approach to tribal energy sovereignty, land and consultation.

### Tribal Leaders Highlight Local Energy Efforts

The meeting featured presentations on a variety of efforts California tribal governments are undertaking to advance a more sustainable future including:

- Dam removal efforts on the Klamath River.
- Carbon sequestration in the Humboldt region.
- Carbon offset projects in California.
- Renewable energy microgrids.

Representatives explained how tribal communities are impacted by power outages when wildfires threaten the electrical grid, which are happening more often because of climate change. They expressed the need for ongoing funding, permanent staffing and program flexibility to expand energy independence and resiliency.

### State Actions to Support Tribal Energy Projects

CPUC and CEC staff also gave an overview of state-funded projects and ways that the agencies are engaging with tribes through government-to-government consultation. Speakers detailed opportunities for tribes and discussed topics of interest including:

- Department of Energy application to fund a portfolio of tribal energy resilience projects.
- Tribal rulemaking and land transfer policy.
- Public participation and capacity assistance funding.

To date, the CEC has invested nearly \$63 million in tribal projects, including a \$31 million grant approved last fall for a long-duration energy storage system – one of the largest state grants ever awarded to benefit a tribal government.

Agency tribal liaisons encouraged representatives to continue engaging with them directly to address the needs of their communities.

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## CSLB Celebrates Women in Construction Week

**Sacramento, Calif.** – The Contractors State License Board (CSLB) celebrated Women in Construction Week, March 5-11, 2023. As part of this acknowledgement, the California State Senate also passed a resolution recognizing women in construction.

According to recent report in *The Washington Post*, women make up 14% of construction workers in the United States. As it does each year, CSLB strives to celebrate these 1.1 million women working in the industry and encourages more women to consider a career in construction.

“As women take on more leadership positions in the construction industry, they are showing future generations of female workers the benefits of a construction career,” said CSLB Registrar David Fogt. “Now more than ever women are considering a career in construction, which is something to celebrate!”

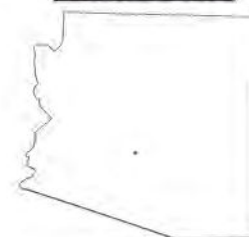
CSLB's Board is currently led by Chair Mary Teichert, who is the CEO of Teichert Construction. CSLB had a first last year with three women in the top positions of the Board – Chair, Vice Chair, and Secretary.

CSLB has free resources available to help women become licensed contractors. From free, virtual monthly licensing workshops to free licensing exam study guides – available

in both English and Spanish – there are many tools available to those interested in learning more about joining the construction industry.

For more information about CSLB, visit [cslb.ca.gov](http://cslb.ca.gov). CSLB operates under the umbrella of the Department of Consumer Affairs and licenses and regulates about 285,000 contractors in California.

### ARIZONA



## EcoWater Partners with Phyn for Residential Leak Detection

**Phoenix, Ariz.** – Phyn, the leader in intelligent water solutions, announced an exclusive partnership with EcoWater Systems®, one of the world's largest manufacturers of water softeners, to offer Phyn's award-winning smart water monitoring solutions to EcoWater's extensive North American dealer network. The first-of-its-kind partnership was announced at the annual EcoWater Systems Dealer Con-

vention in Phoenix.

With the most advanced and innovative technologies on the market, EcoWater and Phyn have a shared vision in providing the best-in-class water treatment and monitoring solutions for the home. From optimizing water quality for your family to preventing leaks, the overall health and wellness of a home's water system is interconnected. As an industry-first partnership, EcoWater and Phyn help solve many of the water challenges facing homeowners today and together will unlock new solutions to address these challenges in a more meaningful and integrated way.

“We're thrilled about the Phyn partnership and see it as a perfect complement to the solutions that our EcoWater Dealerships have to offer,” said Keith Johnson, Vice President of Product Management at EcoWater Systems. “There has been an increasing demand for smart plumbing devices from both dealers and consumers, to detect leaks and prevent plumbing issues, and we are glad to be able to add Phyn's best-in-class technology to our exclusive product suite.”

“EcoWater has long been a champion of making water cleaner and safer through advanced water solutions,” added Ryan Kim, CEO of Phyn. “We look forward to building a long-term relationship based on our natural synergies and shared pursuit of innovations that conserve and protect water, our most precious natural resource.”

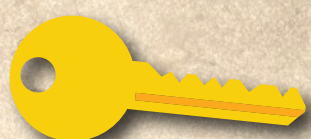
### TEXAS



## Interplay Learning Announces Apprenticeship Program

**Austin, Texas** – Interplay Learning, the leading provider of online and virtual reality training for the essential skilled trades, announced the availability of a technology-driven apprenticeship program for employers in the skilled trades. Giving employers the opportunity to join Interplay Learning's DOL Apprenticeship Program as a Participating Employer enables them to create a better-trained workforce and increase employee retention while eliminating the tra-

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# Industry News

Continued from Page 6

ditional complexities of managing their own formal apprenticeship program.

Employers will continue to provide apprentices the opportunity to gain on-the-job training (OJT), and Interplay's award-winning digital training will serve as the virtual classroom (or Related Technical Instruction) portion of the apprenticeship program. By pairing on-the-job learning with Interplay's video courses and immersive 3D simulations, apprentices will receive a valuable and impactful experience. They will gain new skills, learn effective troubleshooting, and get unlimited practice – all in a safe virtual environment using a desktop, laptop, tablet, or virtual reality headset.

Louisiana-based Goodbee Plumbing joined Interplay's Apprenticeship Program and views it as a pathway into the trades for young job seekers. "Interplay has created a pathway that makes apprenticeship accessible and achievable for someone who is running a full-time business," said Allison Harrison, co-owner of Goodbee Plumbing. "The curriculum, administrative burden, and everything else that comes with running a program are handled by them, allowing us to focus on training our team and building the next generation of workers."

Indiana-based Camflo Heating and Cooling co-owner Titus Hess is giving his team the opportunity to work toward journeyman licenses. "Interplay did a lot of the legwork so I could focus on teaching and growing our workers, and myself,

to get better in this industry," Hess said. "We want to make sure our team has a path toward credentials and learning what they need to advance in their careers."

"We're thrilled to introduce our innovative, tech-forward approach to apprenticeship," said Doug Donovan, founder and CEO of Interplay Learning. "With one of the first digital and off-the-shelf solutions for apprenticeships, we seek to eliminate the pain points existing today for employers, while also providing them with a powerful training solution to address the skills gap problem in the U.S. What has traditionally been complex and especially daunting for small and medium businesses, we have streamlined the process to set up an apprenticeship program and given contractors a tool to build a better-

trained workforce."

Interplay's apprenticeship experts will help participating employers build their apprenticeship model. As the Program Sponsor, Interplay will offload the ongoing administrative management, including reporting monthly RTI, tracking apprentices' ongoing engagement, and interacting with the DOL and state apprenticeship agencies on behalf of its Participating Employer partners. By participating in Interplay's registered Apprenticeship Program, employers can also open opportunities for financial incentives and tax credits in many states.

Interplay Learning's DOL-approved training courses provide all employers with a flexible way to teach Related Technical Instruction (RTI). Employers using Interplay training also have the option of

starting their own apprenticeship program and leveraging Interplay's expert guidance when navigating the complex requirements of a DOL-registered program.

As a part of the company's mission to provide equitable pathways to start careers in the skilled trades, Interplay Learning has signed the Business Pledge to Advance Diversity, Equity, Inclusion, and Accessibility in the U.S. Registered Apprenticeship System.

Interplay Learning, a global provider of scalable, highly effective hands-on digital learning simulations for the HVAC, plumbing, electrical, solar and facilities maintenance industries, is building better training, better careers and better lives for its customers and their employees. Interplay Learning's digital experiential learning platform, SkillMill, conveniently turns any space into a training lab with short video courses, 3D simulations, knowledge checks, and other advanced features that prepare users to be job-ready in weeks, not years.

Visit [www.interplaylearning.com/solutions/apprenticeships/](http://www.interplaylearning.com/solutions/apprenticeships/) for more information.

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## Strikepoint Group Enters Texas Market

Houston, Texas – Strikepoint Group Holdings (SGH), formerly Horizon Group Holdings, one of the largest and most referred home services companies in the United States, announced that it has acquired Weeks Service Company, which serves customers in the Greater Houston metropolitan area. The deal marks SGH's expansion into the Texas home services market.

Since 1972, Weeks Service Company has provided HVAC, plumbing, electrical, indoor air quality, and generator services to customers in League City, Houston, and surrounding areas. With deep roots in the local community, Weeks' team of experienced technicians are committed to on-time service and upfront pricing for every installation, service, maintenance, and repair job.

"We pride ourselves on our ability to provide customers with 'good old-fashioned ser-

Continued on Page 10

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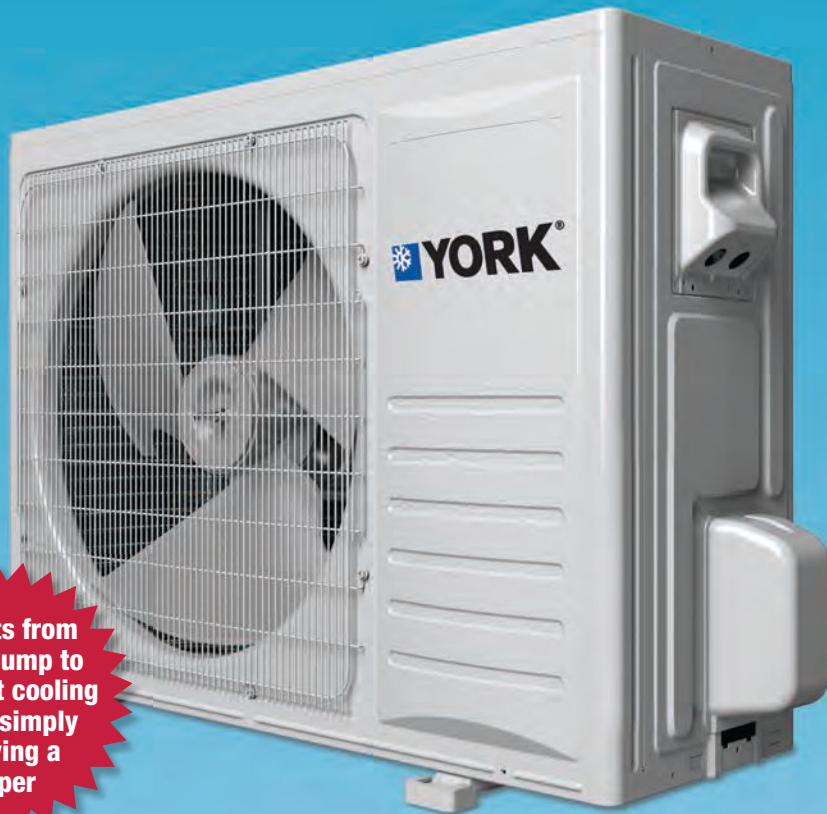
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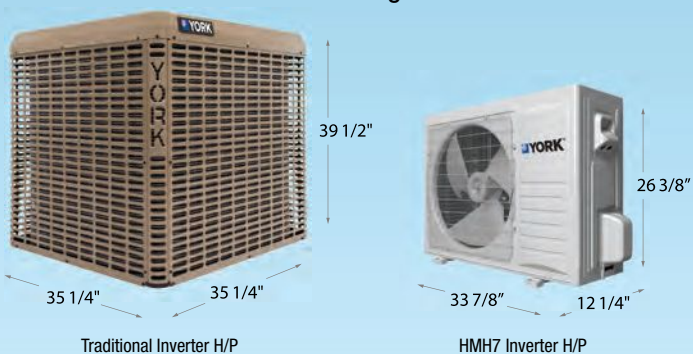
The YORK® HMM7 Heat Pump is designed to provide all the comfort and technology of a high efficiency unit at the cost of a base-tier vertical unit for residential customers. It's an ideal solution for homes that require a compact design and comes in several models and tonnages with flexible installation options and innovative features.



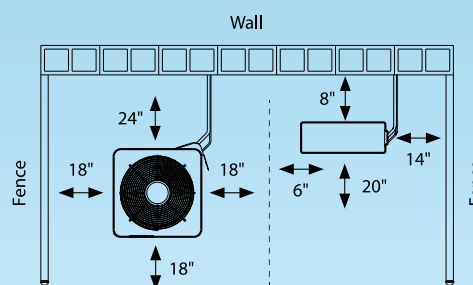
Model	Tons	SEER	HSPF	Height (Inches)	Width (Inches)	Depth (Inches)	Operating Weight (Lbs)	Sound Range (dBA) Low-High*
HMM72B241S	2	17.5	9.0	26 3/8	33 7/8	12 1/4	112	54-65
HMM72B361S	3	18.0	10.5	33	37 3/8	13 3/8	155	56-68
HMM72B481S	4	18.0	9.5	54 5/8	37 3/8	13 3/8	227	62-69
HMM72B601S	5	17.0	10.0	54 5/8	37 3/8	13 3/8	251	62-73

\*High sound rated in accordance with AHRI Standard 270.

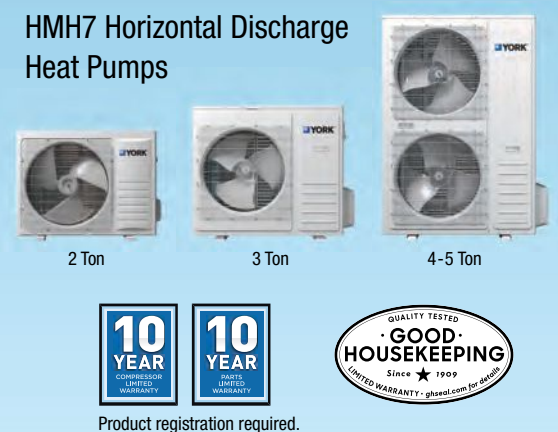
40% smaller footprint compared to traditional vertical discharge units



Traditional, Vertical Unit Minimum Clearances vs. HMM7 Minimum Clearances



HMM7 Horizontal Discharge Heat Pumps



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Continued from Page 8

vice' – a company motto for more than 50 years," said Aaron Buzzell, General Manager of Weeks Service Company. "I'm thrilled for the opportunity to partner with Strikepoint as we continue to operate as a preferred and trusted provider of residential and business contractor services."

"We're incredibly excited to begin working with home services companies in Texas, a market that promises growth in the years ahead due to a strong demand for construction, development and infrastructure projects," said Charlie Haines, SGH CEO. "A partnership with Weeks Service Company, which already has a solid reputation for service throughout Greater Houston, will help us to grow a solid customer base in the area."

The addition of Weeks Service Company into the SGH portfolio of best-in-class home services brands, which stretches from New England to Florida – and now Texas – is the 32nd acquisition since September 2020 for the fast-growing company. SGH continues to experience rapid growth through acquisitions and partnerships with companies looking to expand their commitment to customers and enhance opportunities for employees.

SF&P Advisors acted as financial advisors for the sellers. Terms of the transaction were not disclosed.

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## Paschal Air Expands in Dallas

**Arlington, Texas** – Paschal Air, Plumbing & Electric, a provider of HVAC, plumbing, and electrical home services, announced the expansion of their operations to the Dallas-Fort Worth /metroplex with the acquisition of Walker Air, Plumbing & Electric.

Headquartered in Arlington, and with locations in Dallas, Frisco, and Denton, Walker Air, Plumbing & Electric has served the DFW Metroplex since 1963 through the Metro Energy Savers, Big Bear Air Conditioning & Heating, and North Texas Heating & Air Conditioning brands.

"We couldn't be more excited to expand operations and services to the DFW Metroplex. Walker has a great culture and a team of high-caliber technicians and customer service providers. We look forward to expanding and supporting this already successful team with the world class systems, processes, and the customerfirst mindset that are the hallmarks of our operations in Arkansas and Missouri," said

Paschal CEO Charley Boyce.

Coltala Holdings, a purpose driven holding company based in Dallas, Texas, will remain a minority investor in the Dallas entity, bringing local knowledge and expertise to the Paschal DFW business.

"We have long admired Paschal's success and market-leading position in Arkansas and Missouri under the stewardship of Charley Boyce. He is a third generation HVAC owner-operator and we believe he and the broader Paschal team can help turbo-charge growth for the benefit of the company and the community at large in DFW," said Edward Crawford, co-founder of Coltala Holdings.

"We are excited to partner with Paschal in Dallas-Fort Worth and believe their approach to Home Services will be a differentiator in the marketplace. The combination of two best-in-class, purpose-driven companies will result in even better customer and employee outcomes," added Ralph Manning, co-founder of Coltala Holdings.

## NATIONAL



## A.O. Smith to Expand Product Development Center

**Lebanon, Tenn.** – A.O. Smith Corporation, a provider of water heating and water treatment solutions, announced plans for a new Product Development Center at its Lebanon, Tennessee, location. In the next six months, construction will begin at the existing Lochinvar campus to include a state-of-the-art engineering facility where next-gen water heating and boiler technologies will be developed. The company will also be expanding the Lebanon manufacturing facility to support future production lines, including space for new decarbonization products.

The new center will bring together the company's North America Water Heating commercial engineering, platform electronics, product support, and product management functions with Lochinvar engineering and product management.

"Co-locating these teams in one central location with collaborative working space will enable us to not only leverage synergies between engineering teams but also



A.O. SMITH'S LEBANON, TENNESSEE MANUFACTURING FACILITY.

enhance knowledge sharing to support future product innovation," said Kevin Wheeler, chairman, president, and CEO.

With plans to start this summer, construction of the expanded facility will take approximately 20 months to complete. Its projected cost of \$30 million represents a significant investment in talent and resources to create an environment where innovation is the focus.

"Just as the Corporate Technology Center in Milwaukee was designed to showcase our advanced water heating and water treatment research and development efforts, this new facility will serve as a hub for commercial water heating and hydronics new product development," said Dr. Bob Heideman, senior vice president and chief technology officer.

When fully operational, it's anticipated that the Product Development Center will house more than 150 employees.

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## ASHRAE Awards \$163K in Grants for Undergrad Projects

**Atlanta, Ga.** – ASHRAE will award a total of \$163,000 for 2023-24 academic year to fund 34 projects through ASHRAE Undergraduate Program Equipment Grants.

The ASHRAE Undergraduate Program Equipment Grants provides grants to engineering, technical and architectural schools worldwide. Its goal is to increase student knowledge, learning and awareness of the HVAC&R industry through the design and construction of senior projects. Grants are used to fund equipment and supplies from one academic term up to one year.

"We hope that the projects funded through the ASHRAE Undergraduate Program Equipment Grants will provide students with an invaluable learning experience and also serve as an instrument of advancing HVAC&R innovations. Congratulations to the selected

schools," said Mai Anh Dao, chair of the ASHRAE Student Activities Committee.

A total of 77 applications were submitted for the grants and seven countries were represented among the projects selected. Successful projects were chosen based upon the following guidelines: relevance as an ASHRAE-related topic; long-term student impact of the project; amount of funding requested; and the participating students' involvement with ASHRAE.

The two highest ranking project teams will be invited to present their projects during the Student Program at the 2024 ASHRAE Winter Conference, taking place January 20-24, 2024 in Chicago.

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## FabricAir Names Stan Weaver Co. Top Manufacturer's Rep of 2022

**Suwanee, Ga.** – FabricAir, a manufacturer of fabric HVAC duct, honored Stan Weaver Co., located in St. Petersburg, Fla., with its 2022 Top Manufacturer's Representative Performance Award at the AHR Expo 2023.

FabricAir VP of Sales, Charles Justice, presented the award to Derrick Roberts and Mike Foley, Stan Weaver Co.'s president and general manager, respectively.

The 45-year-old manufacturer's representative firm operates five Florida offices in Jacksonville, St. Petersburg, Miami, West Palm Beach, and Orlando. Stan Weaver Co. specializes in air movement with more than 40 product lines and has represented FabricAir since 2010 throughout Florida with the exception of Fort Meyers and Pensacola areas.

"The advantage of fabric duct is never having to address a product manufacturing or handling quality control issue in the 13 years we've offered it," said Roberts, who has 40 years HVAC industry experience and 34 years with Stan Weaver Co.

Weaver's strength is its eight mechanical engineers, that

complement a staff of 17 outside salespeople and 40 sales assistants, estimators and accountants to get fabric ductwork specified for projects.

"Our mechanical engineers assist consulting engineer clients to get FabricAir specified on their project drawings that ultimately become the basis of design, which in turn helps our salespeople promote it to end-users," said Roberts. "That combination helped land more than 50 fabric duct projects in 2022."

One application example is the Florida's increasing cannabis grow-op trend, as more cultivators are discovering fabric duct's uniform air dispersion qualities and other benefits help produce larger harvests, according to Roberts.

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

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## LG Earns AHRI Performance Award for 6th Year in a Row

**Seoul, South Korea** – LG Electronics (LG) has earned the Air-Conditioning, Heating & Refrigeration Institute's (AHRI's) Performance Award for the sixth year in a row. The accolade points to the consistently high quality of LG's HVAC solutions, as every model selected by AHRI for testing must pass all evaluations for three straight years for the award to be granted.

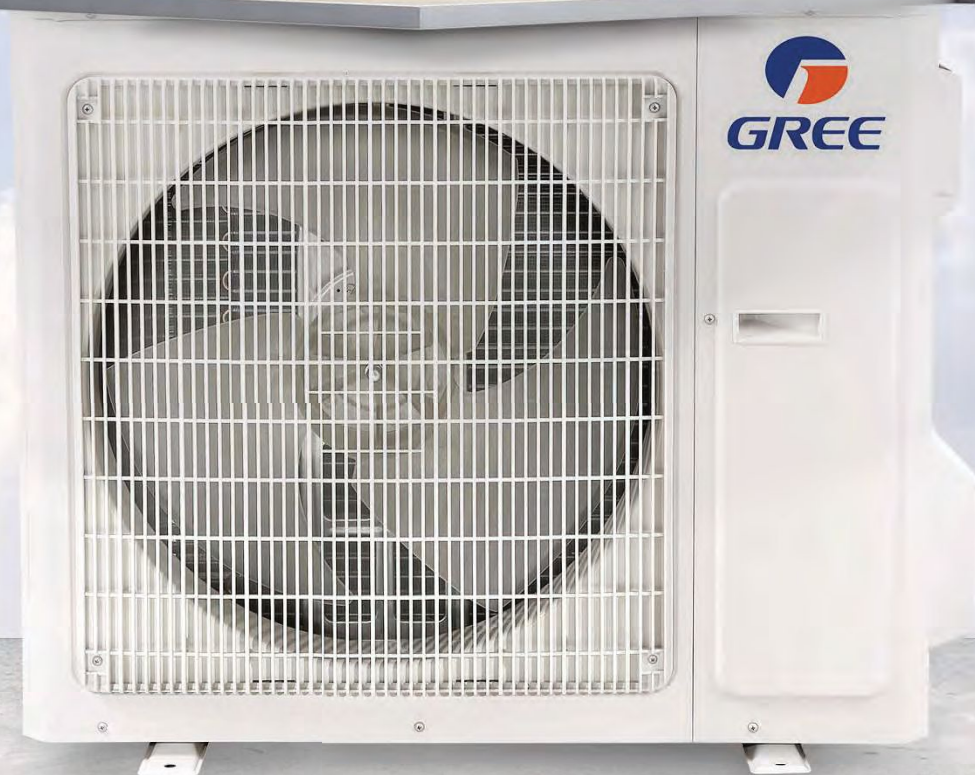
To ensure the highest standard of testing, the majority of AHRI Performance Award evaluations are conducted by Intertek, a third-party standards, certification, and testing organization. Intertek runs a comprehensive battery of assessments on the selected products to determine if the actual performance is consistent with the specifications listed by the manufacturer.

Representing seven product categories – including, for the first time, energy recovery ventilators (ERV) – all 67 LG HVAC solutions submitted for testing passed AHRI's rigorous evaluations for the third year in a row (2020 to 2022). In addition to LG's ERV, the models evaluated belong to the following HVAC categories: variable refrigerant flow (VRF), unitary small heat pump (USHP), water-cooled chillers (WCLL), air-cooled chillers (ACCL), room fan coil (RFC) air conditioners, and packaged terminal heat pumps (PTHP).

Continued on Page 12



# Limitless



Continued from Page 10

One of the LG products evaluated for the AHRI Performance Award, the LG Multi V large-capacity outdoor unit, employs the company's proprietary Ultimate Inverter Compressor to deliver a strong, energy-efficient performance. Popular with customers worldwide, especially those in Northern Hemisphere countries where winters can be particularly cold, LG's flagship VRF system is able to provide dependable heating operation in temperatures as low as minus 30°C (minus 22°F).

Also tested was the air-cooled Inverter Scroll Chiller, which leverages LG's advanced inverter technology to obtain a high level of operational efficiency. In addition to impressive performance,

the chiller has a compact design that takes up little space, affording customers greater installation flexibility.

Earning the award for the first time, LG's ERV solution replaces still and stagnant indoor air with clean filtered air from outside and is equipped with a heat exchanger that significantly decreases hot air loss while also helping to reduce heating and cooling costs. Moreover, when connected with a system air conditioner, it manages energy consumption and IAQ to ensure optimal comfort and efficient operation.

"LG has now been recognized by AHRI for six years in a row – a significant achievement that reflects the quality, performance, and reliability of LG HVAC solutions," said James Lee, head of

the air solution business unit, LG Electronics Home Appliance & Air Solution Company. "We will continue to strengthen our position in the global HVAC market by delivering highly effective and energy efficient solutions for commercial and residential use."

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

## Trane Celebrates Inaugural Class of Trade Warriors

Davidson, N.C. – Trane Technologies' residential HVAC brands (Trane Residential and American Standard Heating & Air Conditioning) celebrated the inaugural graduation of its first cohort of

Trade Warriors to train at Fort Bragg. This cohort includes the program's first two female graduates, Rosheen Pennant and Tavares "Talia" Moreno; two Golden Knights, Derrick Coleman and Jared Zell; and a Master Sergeant, Fred Adams. Since Trade Warriors started in 2021, Trade Warriors has successfully educated seven cohorts and has helped facilitate nearly 40 job placements for its graduates. Today, the program continues to fuel the skilled labor force by creating a pipeline of HVAC talent, providing hands-on training and job placement opportunities for America's service men and women to pursue careers in the HVAC industry.

Originally launched at Fort Bragg, North Carolina, the Trade Warriors Program is a hands-on, eight-week training program that provides participating military service members with

the necessary skills and certifications to receive job placement in the field and ease their transition to civilian life. The Trade Warriors initiative began in late 2021 in conjunction with Raleigh, North Carolina-based RightTek HVAC Training and the Army's Career Skills Program at Fort Bragg. All males and females in the military who were separated from duty within the previous six months are eligible to apply. Veterans are also eligible to participate. Interested applicants can find more information on the U.S. Department of Defense (DOD) SkillBridge website. For more information, visit [www.trane.com/residential](http://www.trane.com/residential).

## Franklin Electric Launches New Women's Network

Fort Wayne, Ind. – Franklin Electric Co., Inc. (NASDAQ: FELE) announced the formation of a new employee resource group (ERG) dedicated to providing an avenue for women to grow both professionally and personally through education, networking and advocacy. Known as Franklin Women's Network (FWN), the group's promise is to, "build a welcoming, inclusive community, provide professional alliances, equip Franklin women with relevant development tools and resources, and guide Franklin women to identify and achieve career milestones."

Companies have implemented ERGs in recent years in response to a growing awareness and support for employee betterment. ERGs create a network of like-minded employees who want to collaborate and grow personally and professionally.

While months of planning went into formalizing the group, the idea for the FWN stemmed from a chance encounter in the company's hallways between Franklin Electric Engineering Manager Sukaynah Abu-Mulaweh and Global Business Operations Vice President Amy Stauffer. The two struck up a conversation, and Stauffer began meeting with Abu-Mulaweh on a regular basis for mentorship sessions. "Sukaynah and I were from two uniquely different business areas. Our ability to meet and connect took planning, but we both val-

Continued on Page 14



# NEW IN USA



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### APRIL-MAY 2023

**AC/HP Refrigeration Module**  
(Four-Night Class)  
Instructor: Mitch Bailey  
Wed., April 26 – Part 1  
Thurs., April 27 – Part 2  
Wed., May 3 – Part 3  
Thurs., May 4 – Part 4

### MAY 2023

**Electrical Module**  
(Four-Night Class)  
Instructor: Mitch Bailey  
Wed., May 24 – Part 1  
Thurs., May 25 – Part 2  
Wed., May 31 – Part 3  
Thurs., June 1 – Part 4

### 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

### APRIL 2023

**Mini Split Design,  
Installation, & Performance**  
(Two-Night Class)  
Tues., April 4, 8:30 AM-12:00 PM – Part 1  
Wed., April 5, 8:30 AM-12:00 PM – Part 2

**Title 24 Proper Procedures for Charging  
Air Conditioners and Heat Pumps**  
(Two-Night Class)  
Tues., April 11, 8:30 AM-12:00 PM – Part 1  
Thurs., April 13, 8:30 AM-12:00 PM – Part 2

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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# Industry News

Continued from Page 12

ued the discussions we had during those sessions,” explained Stauffer. “As a new manager, Sukaynah wanted to form connections that would help her grow and learn about the business from someone who has worked in this industry for more than 20 years.”

During Stauffer and Abu-Mulaweh’s mentoring conversations, the two discussed the importance of taking the experience they shared and creating a more formal network. From there, the idea grew. With the help of steering committee members from various areas of the business, including Human Resources, Finance & Accounting, Engineering, Marketing and Supply Chain, the FWN was born.



THE FRANKLIN WOMEN'S NETWORK (FWN) GROUP.

While the ERG is targeted towards women – who are often underrepresented in the industries Franklin Electric serves – the group has made it a point to invite all Franklin Electric employees to participate.

The group’s kickoff event, hosted in Fort Wayne on February 22, was an example of this inclusiveness in action. More than 70 employees participated, including leaders at all levels of the organization. Franklin Electric Chairperson of

the Board and Chief Executive Officer, Gregg C. Sengstack, welcomed attendees. Abu-Mulaweh then presented plans for the year that will include quarterly networking seminars as well as frequent interactive workshops and personal development opportunities.

“We wanted to kick this off with a real community feel, and this event accomplished that,” said Stauffer. “Seeing everyone come together for this common goal of learning and advancement is so important to the future of our business, and really, the future of the industries we serve.”

Vice President of Global Water Engineering Don Brown also knows how important programs like this are to the members of his team, including Abu-Mulaweh. “When I first learned of the plans to form the Franklin Women’s Network, I was excited about the benefits it could

bring to our company. The strength of a company is in its people, and this initiative will help us demonstrate that we are a company that values diversity in its workforce, and diversity in the ideas of its people. The very existence of this group will help us retain the best women in our workforce, and – just as important – it will help us to recruit more women into our company.”

To learn more about Franklin Electric’s FWN and the organization’s commitment to diversity, equity and inclusion, visit <https://franklin-electric.com/company/diversity,-equity,-and-inclusion/>.



## Rinnai Recognized as Top Place to Work in U.S.

**Peachtree City, Ga.** – Rinnai America Corporation, a manufacturer of tankless gas water heaters in North America, announced that it has earned the 2023 Top Workplaces USA award. This award was issued by Energage, an organization that develops solutions to build and brand Top Workplaces.

The employer recognition program celebrates organizations across the country that have built exceptional workplace cultures. The Top Workplaces program has a 15-year history of surveying more than 20 million employees and recognizing the top organizations across 60 markets for regional Top Workplaces awards.

Top Workplaces USA award recipients are determined by the results of an undisclosed, research-based employee survey conducted by an autonomous organization. This award is celebrated nationally by acknowledging companies that make their company a better place to work by prioritizing a people-centered culture and giving employees a voice of their own. Over 42,000 organizations were invited to participate in the Top Workplaces USA survey. Winners of the Top Workplaces USA list are chosen based solely on employee feedback gathered through an employee engagement survey, issued by Energage. Results are calculated by comparing the survey’s research-based statements, including 15 Culture Drivers that are proven to predict high performance against industry benchmarks.



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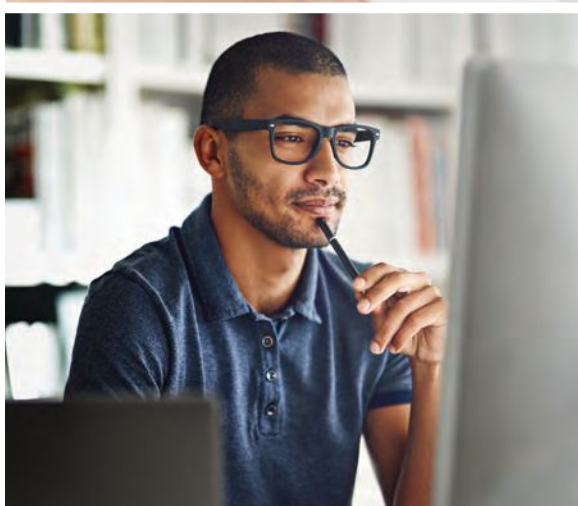
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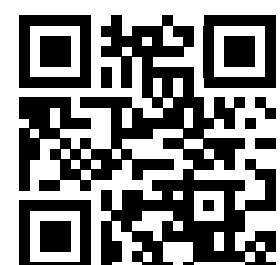
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# Introducing the New EZ FIT® 6K BTU Ceiling Cassette

The smaller MLZ-KY EZ FIT® One-way Ceiling Cassette recesses between I-joists, providing a clean flush-mount appearance. The slim body design fits into shallow ceiling cavities making the EZ FIT a perfect selection for new construction projects, hotels, office spaces or any room upgrade. Compatible with multi-zone heat pumps and featuring high/low ceiling airflow settings, automatic vane control and is easily serviceable from below. The new smaller EZ FIT is specifically designed to provide personalized room comfort for multiple applications.



MLZ-KY06NA Dimensions  
W: 33-3/16 x D: 11-7/8 x H: 7-11/16

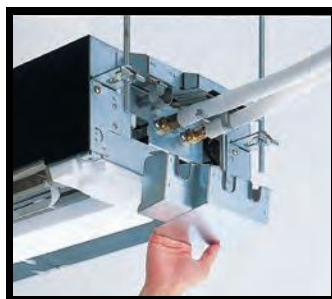
## Compact Design

With its slim and compact design, new MLZ-KY model can be installed between a conventional joist and I-Joist.



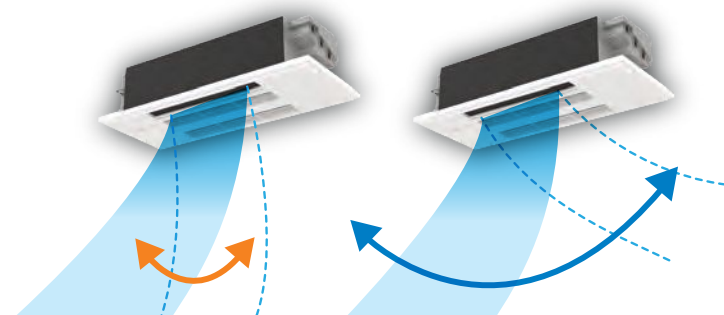
## Serviceable from the Bottom

You have total access to the inside of the unit without requiring a service access panel.



## Auto Vane Controller

Outlet vanes can be moved left and right, as well as up and down using the remote controller, improving airflow control.



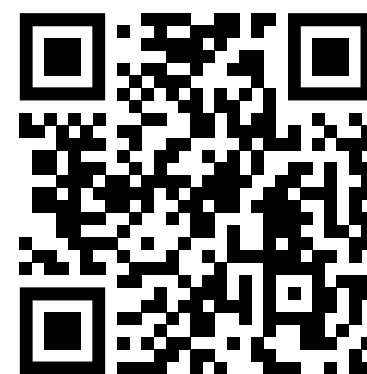




## Key Features of the MLZ-KY06NA

- Designed to fit between I-joint spacing
- Stylish, square design panel
- Built-in condensate lift mechanism (19.6")
- Serviceable from the bottom (electrical and flare connections)
- Adjustable fan speeds and vane directions
- Washable antibacterial and deodorizing filter
- Multiple control options available:
  - Hand-held Remote Controller (provided with unit)
  - kumo cloud® smart device app for remote access
  - Third-party interface options
  - Wired or wireless controllers
  - Pocket inside the access panel for kumo cloud® Wireless Interface

Scan this QR code to watch a short video on the MLZ series products



## Indoor Air Quality, Zoning, & Air Distribution Products

### AprilAire UVC Coil Cleaner



AprilAire has introduced the AprilAire UVC Coil Cleaner (Model AUV24V), which is installed over the evaporator coil of an existing residential HVAC system to continuously clean the coil with germicidal UVC light, preventing and destroying mold and biofilm buildup. The new UVC Coil Cleaner kills up to 99.9% of mold on the surface of the evaporator coil, is easy to install with two mounting options (an external bracket and an internal magnet), improves the AC system's efficiency, and is a cost-effective solution for chemical-free coil cleaning.

When mold and biofilm coat the evaporator coil, they act as an adhesive attracting dirt and biological contaminants that insulate the coil and impede the cleanliness and efficiency of a system. Such coils are not only dirty, but can also reduce the heat/cool transfer efficiency by as much as 15% and restrict air flow, increasing the fan pressure or pressure drop across the coil. The AprilAire UVC Coil Cleaner operates with a powerful UV lamp designed to destroy and prevent mold and biofilm from growing on the evaporator coil and surrounding areas, preventing the coil from becoming a source of bad air quality.

In addition to the stand-alone solution, AprilAire is offering the new UVC Coil Cleaner as part of a Clean Air Pair bundle, which also includes an AprilAire Air Cleaner and Air Filter in one convenient box for professional contractor partners. When used in combination, the air cleaner captures airborne contaminants while the coil cleaner kills up to 99.9%\* of mold on evaporator coil surfaces, resulting in Healthy Air for homeowners as well as a great value.

The AprilAire UVC Coil Cleaner is sold in a single unit or a case of 12, each containing a 16" UVC (254nm) lamp, an electronic 24V ballast with LED system status indicator, a magnetic multi-bracket for various types of installations, mounting hardware, white cotton gloves (the UVC lamp should never be touched with bare hands), a lamp change-out reminder decal (lamp should be changed annually), and installation instructions.

Contractors can find the complete specification sheet and additional information on the AprilAire website.

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



### Berner International Industrial Intelliswitch

**Berner International**, New Castle, Pa., a leading manufacturer and innovator of air curtains, introduces the Industrial Intelliswitch™, North America's first digital controller platform for the shipping dock and door industrial air curtain market. The Industrial Intelliswitch enables building managers to control and monitor air curtains individually or in groups via additional options such as the Berner AIR™ smart controller/app and BACnet.

The 12 (h) x 12 (w) x 6 (d)-inch (304 x 304 x 152-mm) Industrial Intelliswitch control panel is the newest accessory available on Berner's Industrial Direct Drive (IDC) 12 through the Industrial Belt Drive (IB) 50 air curtains. The NEMA-4/12, UL and cUL-listed control panel can be installed remotely or factory-installed on the unit. The 3.18 (h) x 9.72 (w)-inch (80 x 246-mm) display can be located remotely from unit-mounted control panels.

The Intelliswitch, which is standard on all Berner Architectural air curtains, was adapted for industrial air curtains to offer building managers flexibility in operations with a built-in time delay, preset programs, 7-day scheduling, a temperature probe, low voltage circuit for unit activation via door switch or BMS.

The Intelliswitch also allows the option to add the Berner AIR smart controller and app, which includes BACnet capabilities. Facility managers can program, operate and monitor the air curtains through either a building management system using the BACnet-IP protocol, or a smartphone. The Berner AIR app also enables grouping, making it simpler and faster to program many air curtains across multiple locations.

The Intelliswitch and Berner



AIR features allow one to program and adjust settings so that Berner industrial air curtains operate optimally for the application and conditions. Consequently, facilities are more efficient at saving energy and reducing greenhouse gas (GHG) emissions when the doors are open by protecting interior temperatures, in addition to providing thermal comfort. Air curtains also facilitate chemical-free flying insect control and enhance general indoor air quality (IAQ).

The Industrial Intelliswitch and Berner AIR package allows access to the new Berner AIR Console, which presents a dashboard style display from a Web browser for better overviews, especially with multiple air curtains and locations.

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



### Carrier Carbon Air Purifier



**Carrier** has introduced its Carbon Air Purifier with UV as a new addition to its Healthy Homes lineup in North America. The new system delivers air purification to help reduce unwanted odors, volatile organic compounds and common household gases from indoor air. Additionally, the technology aids in the reduction of microorganism growth, including bacteria and viruses, on the evaporator coil.

"We're pleased to offer the Carrier Carbon Air Purifier with UV to residential customers looking for ways to improve indoor air quality," said Todd Nolte, Managing Director, Replacement Components and Product Management, Residential HVAC, Carrier. "This offering furthers Carrier's leadership in providing healthier, more comfortable spaces for homeowners with quick-to-install and easy-to-maintain air treatment solutions."

The Carbon Air Purifier with UV provides dual treatment technology through a carbon core and UV light to improve indoor air quality. This new solution:

- Aids in the reduction of microorganism, e.g., bacteria and viruses, growth on the cooling coil and release into the air.
- Reduces ozone in recirculated air.

- Continuously treats the surface of the cooling coil with ongoing system operation.

- Is easy to install and maintain, requiring replacement of the carbon core each year and UV bulb every 2 years.

- Can be combined with an additional UV light for even greater surface coverage on evaporator coils.

**More information:** <https://www.carrier.com/residential/en/us/products/indoor-air-quality/air-purifiers/>.



### Christie CounterAct UR10

As we continue to see relaxed COVID-19 restrictions – leaving the onus of safety in the hands of business operators, owners and facilities managers – global visual technologies company **Christie**® is pleased to introduce its newest CE- and UL- certified commercial UVC-LED disinfection light fixture for occupied, indoor spaces. Christie CounterAct™ UR10 with UVC-LED and patented Care222® far-UVC - plus visible light, in a single unit, is recommended for commercial offices, government facilities, schools, transit hubs, retail shops, medical buildings – for enhanced and safe airborne and surface disinfection wherever people gather indoors, in public places.

CounterAct UR10 builds on the release of the CA20, Christie's first far-UVC disinfection fixture, and the desire among global business and government leaders to increase confidence and improve wellbeing in our indoor spaces, such as meeting rooms, classrooms, and other places people gather. Combining filtered Care222® far-UVC light with upper room high-power mercury-free UVC-LED, CounterAct UR10 is an evolution in technology for treating both surfaces and air in occupied indoor spaces.

The new reality is that on average we're seeing a pandemic arise every four years since the year 2001. This trend indicates the 2023 common cold, flu season and the next pandemic are right around the corner. This is why the U.S. government is committing,



through the American Rescue Plan, a total of \$472 billion for schools as well as state, local, and tribal governments which can be used to deploy systems such as CounterAct UR10 UVC disinfection light fixtures.

CounterAct UR10, which kills both airborne and surface pathogens, can be installed in rooms with ceiling heights between 9 and 22 feet (3-7.6m), includes remote control features with iOS and Android support, and can be integrated with building automation/management systems.

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



### Fantech FIT Series



**Fantech** has redesigned its FIT® series of fresh air appliances, including updating existing appliances with improved functionality and efficiency, as well as the addition of two new 120-CFM models. The updated product line includes a 70-CFM model, the FIT 70E, and three 120-CFM models – the redesigned FIT 120E and the new FIT 120E-D and FIT 120E-D-EC.

FIT Series fresh air appliances with energy recovery are ideally suited for multifamily projects with no mechanical room, where the appliance must be located within a false ceiling. They feature a slim profile for installation between floors, plug-and-play connectivity for quick installation, and easy access for maintenance.

FIT Series fresh air appliances bring a continuous supply of fresh air into a home while exhausting an equal amount of contaminated air. The energy recovery core transfers heat and moisture from the incoming air to outgoing air cooled and dried by an air conditioner, thereby improving indoor air quality while providing up to 81% of energy recovery to increase efficiency. The units include washable electrostatic filters and weigh just 29 to 35 pounds.

The new FIT 120E-D and the FIT 120E-D-EC offer similar performance to the newly redesigned FIT 120E while adding an integrated mechanical shutoff damper to prevent outdoor air from being drawn in when the unit is

## Indoor Air Quality, Zoning, & Air Distribution Products

not active. FIT 120 E-D-EC is powered by two electronically commutated (EC) motors, which reduce energy usage and result in lower operating costs and less maintenance over the lifetime of the appliance.

Paired with the ECO-Feel® multi-function controller with a Total Volatile Organic Compound (TVOC) sensor, the system will operate around the needs of the residents – optimizing performance, ventilation at a relative humidity level of 45%, 20 minutes ON/40 minutes OFF per hour at low speed, VOC spike results in ventilation rate increase, and screenless design.

**More information:**  
www.fantech.net/fit.



### Hitachi airCore



Johnson Controls-**Hitachi** has introduced airCore, the first line of precision air conditioner (PAC) heat pump systems in the U.S. to use R-32 refrigerant. R-32 is a refrigerant with low global warming potential that produces fewer greenhouse gas emissions than R-410A. Low-GWP refrigerants such as R-32 reduce the impact of heating and cooling equipment on the environment and can meet upcoming refrigerant regulations.

Many states, such as California, have already established regulations that will phase out the use of high-GWP refrigerants in HVAC equipment, and the Environmental Protection Agency (EPA) has recently proposed regulations that allow only refrigerants with a GWP of 700 or lower to be used in new comfort cooling equipment starting January 1, 2025. By using low-GWP R-32, airCore units can comply with regulations before they go into effect.

In addition to using low-GWP refrigerant, the airCore line of universal outdoor units deliver energy efficient performance and make it possible for residential and light commercial applications, including small markets, restaurants, salons and medical offices, to decarbonize their heating and cooling when the electric

units are powered by renewable electricity. The units may also qualify for state rebates and incentives.

The airCore line features industry-leading piping lengths of up to 245 feet, which allows for greater installation flexibility and is especially advantageous for building configurations in coastal regions. With a maximum external static pressure (ESP) of 0.8, airCore units can be used in parallel with existing ducted equipment. In buildings that use multiple airCore units, the units can be networked and controlled without a larger building management system through easy connection using BACnet or Modbus adaptor.

The line of airCore heat pump systems can operate in tempera-

tures as low as -13 F, reaching up to 45,000 British thermal units (BTUs). Units features compressor core heating technology with advanced, multipulse control that improves efficiency in low-ambient conditions and improves startup time as well as a smart defrost control.

**More information:**  
www.jci-hitachi.com/en/.



### Mitsubishi Electric Trane HVAC EZ FIT MLZ06

**Mitsubishi Electric Trane HVAC US LLC (METUS)**, a leading supplier of Ductless and Ducted Mini-split and Variable Refrigerant Flow (VRF) all-climate heat-pump and air-



conditioning systems, now offers the EZ FIT® MLZ-06 Recessed Ceiling-Cassette for those looking for the benefits of a recessed ceiling cassette in a smaller design.

This sleek, narrow-body ceiling 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 product features include:

- Smaller 6,000 BTU/H capacity
- New smaller footprint designed

to fit between I-joists common in new construction (other models fit standard joists)

- New grille with smaller dimensions

The new EZ FIT ceiling cassette design is effective regardless of ceiling height because of its adjustable airflow. Plus, 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. This further eliminates the need for contractors or remodelers to modify the surrounding area to install or service the product.

**More information:**  
www.MitsubishiComfort.com.

# Panasonic

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**Performance Driven • Code Compliant • Swidget Smart Control Compatible**

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**NEW** Intelli-Balance™ 100 ERV mirror model. Simplifies ducting when installed in tandem with the Intelli-Balance™ 100 ERV non-mirror model in adjacent multi-family units.

Learn more about code compliant, balanced air solutions, visit [na.panasonic.com/us/ERVs](http://na.panasonic.com/us/ERVs)

# Technical Training

## Growing Green Technicians Part 162: Discharge and Liquid Line Temperature Fundamentals

By Jim Johnson  
Contributing Editor

It's spring, which means that consumers are being reminded that it's time to schedule an appointment to have their comfort cooling systems checked to make sure the equipment is operating properly and will be able to handle the workload of high temperatures throughout the summer. A popular term that is sometimes used to describe this preventive maintenance service is that it is a "Tune-up" since it involves the inspection and testing of electrical components that may be failing and need to be replaced, as well as an evaluation of the refrigeration and air flow systems.

When taking a green approach to comfort cooling refrigeration system performance evaluation, there are fundamental factors that can be considered when beginning an evaluation of a refrigeration system. These involve not only refrigerant pressures, but also temperature checks. (See **Figure One**)

As this illustration shows, measuring the discharge and suction pressures of a refrigeration system is one basis for determining if

a system is operating properly. And in conjunction with pressure testing, two measurements of temperature, one that confirms the ambient temperature and the other that determines the temperature of the hot vapor line leaving the compressor will provide information on the operation of the equipment.

In regard to the discharge line, an accurate temperature reading with a digital device taken at a point 6 inches from the compressor should not exceed 225°F. If you measure a temperature beyond this maximum, it's a good indicator that the temperature inside the compressor is close to 300°F, which means that it's possible that the lubricant has suffered at least some degree of vaporization. And a compromised lubricant is a primary cause of premature compressor failure. The root cause of a higher-than-normal discharge line is often a system overcharge, which, in a split system, could have occurred when the equipment was installed. Or, when previous maintenance checks performed on a split system, or a package unit, involved adding refrigerant when it wasn't

necessary.

The other refrigerant line temperature to consider is the refrigeration system liquid line. With the ambient temperature established, a general guideline to expect is that the liquid line temperature will be no more than 15 degrees above the ambient. This is an important factor to consider because liquid refrigerant that enters a metering device at a higher-than-normal temperature reduces what is referred to as the net refrigeration effect of the system, which results in cooling capacity loss. It's also important to note that the liquid line temperature should never be lower than the ambient temperature. If the temperature of it is found to be too low, it's a good indicator that refrigeration system pressure drop in the line is excessive. This could be due to a kink in the line, a line that is undersized or too long for the installation of a split system, or it could indicate restriction in a

### Measure Ambient Temperature

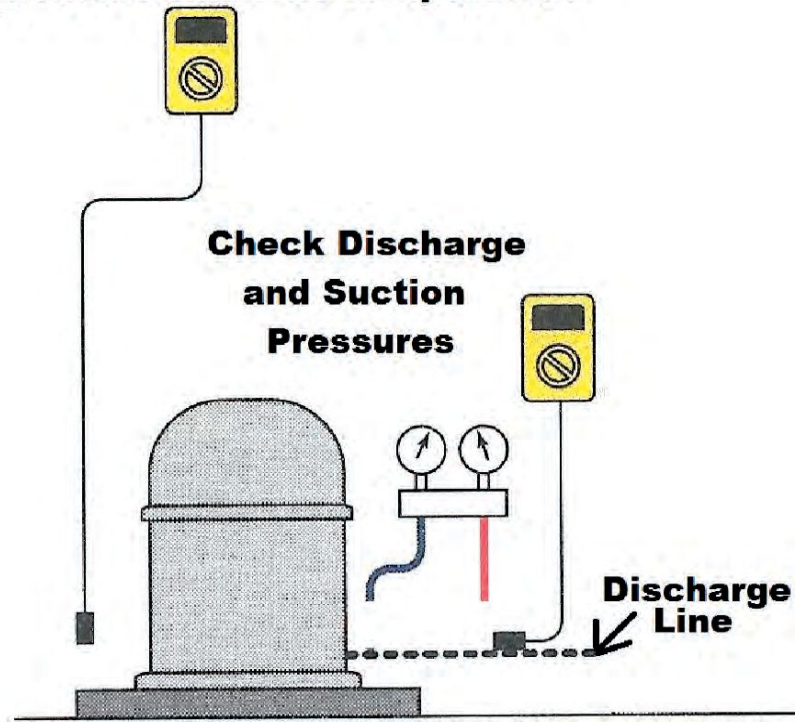


FIGURE 1

filter drier.

Another consideration to consider about the liquid line in regard to split systems is that if the temperature of the line measured at the outdoor section is nearly equal to the temperature of the line entering the indoor coil, a likely cause is a restricted or malfunctioning metering device,

or there is a problem in the coil distributor.

In our next segment, we'll look further into system performance evaluation from the perspective of the refrigeration and air flow systems working together properly to ensure efficient operation of the equipment.

## Troubleshooting

### A Follow-Up on a Preventive Maintenance Service on a Freezer

By Jim Johnson  
Contributing Editor

In this month's troubleshooting problem, the equipment that needs servicing is a walk-in freezer, and the restaurant manager's description of the situation is that "the compressor seems to be stopping and starting too often" even though the thermometer shows that the box temperature is approximately 10°F. And, according to the dispatcher, another technician performed preventive maintenance on the equipment three days ago and the work order for that call shows that the coils were cleaned, refrigerant pressures and operating temperatures were normal, and adjustments were accomplished. The wiring diagram and legend for this equipment are shown in **Figures One and Two**.

When you arrive, you confirm that the items stored in the box are frozen, that the defrost system

is functioning properly, and both the evaporator fan motor and condenser fan motor are operating normally. You also note that the compressor is short cycling, starting and operating for approximately one minute at a normal current draw before cycling off, then re-starting in approximately one minute.

Your test of the thermostat shows it closed during both the operation and the cycling off of the compressor. Your next step is to check the settings on the pressure switch settings, and you find that the LPS differential is set at 5 PSI.

Your troubleshooting question: *What is the next step you need to take in servicing this equipment?*

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@techtrain-assoc.com](mailto:icntroubleshooting@techtrain-assoc.com) or by U.S. Mail to:

#### LEGEND

CFM	Condenser Fan Motor
COMP	Compressor
DFH	Defrost Heater
DFT	Defrost Timer
DTT	Defrost Terminator
EFM	Evaporator Fan
FCS	Fan Cycling Switch
FLI	Fuse Link
HPS	High Pressure Switch
LPS	Low Pressure Switch
RC	Run Capacitor
TH	Thermostat

FIGURE 2

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."

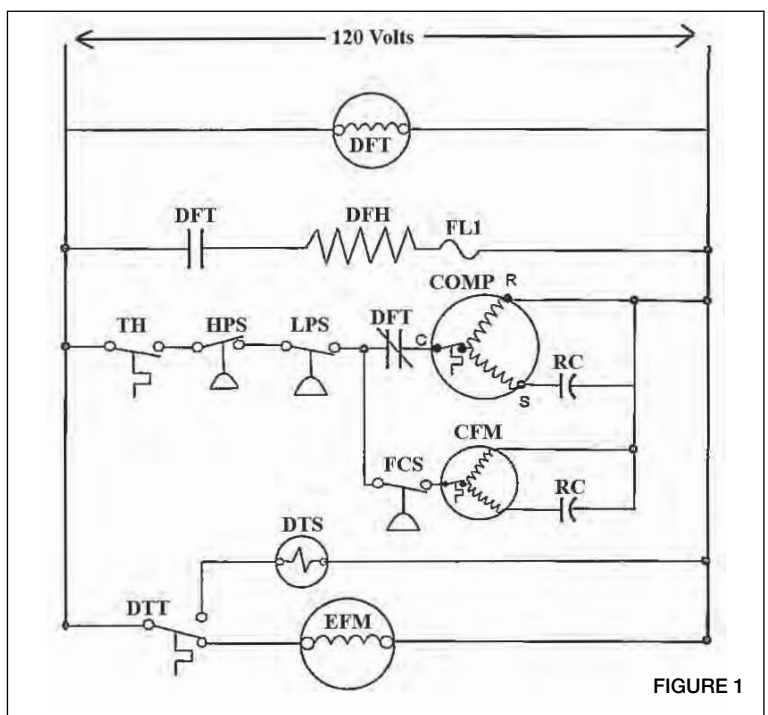


FIGURE 1

#### Solution to Last Month's Problem

The next step we need to take in servicing this equipment is to replace the gas valve. Our tests showed that all safety and limit switches wired in series with the gas valve assembly were closed, and voltage was being applied to the coil on a call for heat.

The winner of last month's Troubleshooting is:

**Richardo Allen Hart**

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IN STOCK**



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- Compatible with easy pairing VenNet wireless sensors



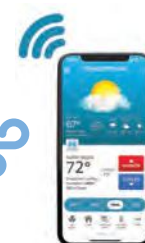
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# New Products

## Grundfos Digital NEXT, ALPHA



Grundfos, the world's largest pump manufacturer, is proud to announce the next generation of small circulators for the residential heating market with the introduction of the Grundfos Digital NEXT range – starting with the UPSe 15-58 in late 2022, followed by the release of the new, digital ALPHA 15-58 in early 2023. Both circulators have been rated with the highest Energy Rating in the market at 193, revolutionizing the market by delivering enhanced efficiency and performance and offering the highest wire-to-water efficiency available today.

Main features of the UPSe and new ALPHA:

- Best-in-class Hydraulic Institute Energy Rating in the market: 193
  - Improved wiring for easier installation with a toolless power connector
  - Automatic self-venting eliminates the risk of air in the pump
  - Robust startup
  - Dry-run protection
  - Troubleshooting aid with alarm and warning lights
- The ALPHA pump also includes:
- Bluetooth connectivity and a touch-screen interface
  - Guided setup for energy savings while maintaining comfort
  - Firmware updates
  - Improved AUTOADAPT for faster setup and improved energy efficiency
  - Min, max, and constant flow settings for faster setup
  - Improved system air venting for faster setup
  - Display showing flow, power, and head for faster troubleshooting
  - Trend data and event log for faster and easier system troubleshooting

**More information:** [www.grundfos.us/digitalnext](http://www.grundfos.us/digitalnext).

## Danfoss Alsense Monitor

Danfoss is partnering with retail technology company Lizard Monitoring to aid North American retailers with their Zero Food Waste (ZFW) goals. Lizard complements Danfoss' Alsense monitoring suite to ensure continuous temperature

monitoring, providing store managers and food safety executives with detailed data on refrigeration performance and environmental compliance.

Globally, if food waste could be represented as its own country, it would be the third largest greenhouse gas emitter, behind China and the United States. The resources needed to produce the food that becomes lost or wasted has a carbon footprint of about 3.3 billion tons of CO<sub>2</sub>.

To minimize food waste, it is essential to monitor refrigeration systems and individual products to detect and address potential problems before they occur. "Lizard supplies robust wireless sensor networks to collect data from retail environments and send it to the cloud where it is mined for trends that lead to food waste before they happen," explained Terry Cates, co-founder of Lizard Monitoring. To accomplish this, Lizard goes beyond traditional control system data collection and is focused on monitoring the product, not just the refrigeration equipment. This data is sent real-time to the cloud and an array of neural networks analyze the data to detect emerging problems as well as long-term trends. "We are able to run AI algorithms on every data point," explained Cates.

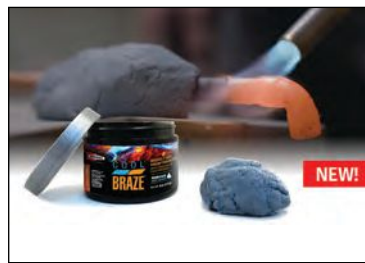
As a result, customers receive early warnings and fewer alarms combined with a detailed record of each event and what was done by in-store teams in response. Peter Dee, sales director of food retail for Danfoss North America, noted, "Our customers are looking for sustainable solutions and more automation to reduce product loss and labor and energy costs. The Lizard solution is highly complementary to the Danfoss Alsense platform and together gives a 360-degree view of your store's refrigeration performance."

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



## RectorSeal Cool Braze

RectorSeal LLC., a leading manufacturer of quality HVAC/R and plumbing accessories, introduces Cool Braze, the reusable heat absorption putty for the HVAC/R, plumbing, and welding markets.



RectorSeal is a wholly owned subsidiary of CSW Industrials, Inc. [NASDAQ: CSWI].

Cool Braze putty blocks soldering, brazing, and welding heat conduction and sparks from damaging nearby soldered fitting joints, piping, and valves. It can be used on a variety of surfaces and metals, including composite panels, rubber, and plastics. Cool Braze is especially useful for protecting reversing valves, ball valves, and TXV components. Cool Braze was developed to completely stop the transfer of heat up to 3000°F (1,649°C). It is effective when using MAPP gas, Oxy-Acetylene, MIG, TIG, Arc, and Propane torches.

"Cool Braze is a game changer for the many trades we serve," said Stephanie Welda, Director of Product Marketing, RectorSeal. "Its versatility adds to the long line of innovative products for which RectorSeal is known."

While many heat-blocking putties are for one-time use, Cool Braze can be reused multiple times. Its formulation is easily rejuvenated with a spritz of water before being stored back in its convenient plastic jar. Cool Braze is non-toxic, non-flammable, and odor-free.

Cool Braze offers several advantages compared to using alternative methods to prevent heat transfer. When properly used, it protects copper, aluminum, steel, and all other pipe and component materials from discoloration, warpage, and distortion, even on thin metal. Cool Braze can be used to hold, align, and jig parts for brazing, soldering, or welding. In addition to absorbing heat, Cool Braze can prevent nearby drywall or wood from igniting, preventing existing fitting joints from unsoldering, and offers residual spark damage to flange bolt/nut threads, valves, and other heat-sensitive equipment.

Since 1937, RectorSeal has offered products that have built a steadily growing and loyal following among professional-grade contractors due to differentiated and proven product performance. Further, the company is often the first to tackle and solve its customers' challenges.

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

## Watts Mixing Valve

Watts has introduced the LFUSG-HWP, a new Under Sink Guardian® point-of-use mixing valve with hot water purge.

This unique four-port valve features a hot water purge lever that allows facilities to perform a sanitization at the faucet with "the flip of a switch." Benefits include:

- Increased safety with quick sanitization at the point of use. The rest of the facility can continue to function without a full system shutdown, allowing uninterrupted water distribution.
- Savings on labor; no tools are required to initiate sanitization. The valve comes standard with a cover to ensure only authorized users can initiate sanitization.

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



## Brass Knuckle SmartFlex 400 Series

With long-lasting comfort comes increased compliance. That's the thought behind the SmartFlex™ 400 Series hand protection from Brass Knuckle. Three gloves, each designed with a 13-gauge nylon shell offering abrasion resistance, uncoated back and wrist to encourage all-day wear, and ultra-thin polyurethane coating on the palm and finger area for an amazingly sensitive gripping surface. Every glove in the 400 Series enables accurate handling of even the smallest of parts, whether in dry or light oil applications.

These thin-gauge general purpose gloves are ideal for everything from electronics repair to small parts assembly. The SmartFlex 400 Series combines outstanding dexterity, lightweight comfort, and protection from injury. BK401 is black nylon with gray coating to conceal dirt and grime. BK402 is white-on-white, making it easy to identify foreign particles on the glove, ideal for



inspectors and quality control. BK403 is black nylon with a black coating, a tough-looking concealer for grimy projects. Each model is available in seven different sizes with color-coded cuffs to simplify re-issuance.

Each glove in the series is carefully constructed, designed for fit, but also cost-competitive. The lightweight, 13-gauge nylon shell provides dexterity and grip and is more lint-free than polyester. A grippy but not sticky polyurethane coating on the palm and fingers makes the 400 Series excellent for dry-grip applications.

400 Series gloves are ideal for many applications not requiring cut-level protection, from automotive to warehouse to light construction and assembly. Designed for maximum comfort and ease of use for all-day wear, the 400 Series offers protection and helps increase wearer compliance. Workers will never feel like they have to take these gloves off.

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

## Greenheck AMPLIFY DM-3



The AMPLIFY™ DM-3 from Greenheck is a small-diameter architectural overhead fan that boosts occupant comfort while enhancing the interior design of commercial and institutional building spaces.

Featuring curved polymer airfoils designed to maximize airflow, improve efficiency, and optimize coverage area, the DM-3 is available in a 5-foot diameter with airflow up to 7,113 cfm and cooling effect up to 70F/40C. The DM-3's lightweight, direct drive motor is up to 20% more efficient and 10 dBA quieter than traditional motors.

A factory-programmed motor driver reduces installation time by eliminating complicated programming in the field.

A wireless radio frequency (RF) controller that is factory-paired with the motor driver provides easy operation of connected fans.

A universal ceiling mount with a pivoting knuckle joint accommodates any ceiling pitch and allows for flexible installation.

**More information:** [www.greenheck.com/products/air-movement/fans/amplify-overhead-hvls-fans/amplify-dm-3](http://www.greenheck.com/products/air-movement/fans/amplify-overhead-hvls-fans/amplify-dm-3).

## Building a Business Culture of Appreciation: Tales of Leadership, Culture, and Loyalty

By Lawrence Castillo  
IHACI Board Member

### Leadership

University of Minnesota Gophers head football coach P.J. Fleck lights a candle on his desk every morning when he arrives at his office. His reasoning is that as a leader, you must be everyone else's light. Nothing could be more true.

As an HVAC owner, operator, or manager, it falls upon you to make the business into what you want it to be. Your employees will follow your lead. If you are the kind of leader who generates enthusiasm every day in your business, then you are setting a level of expectation that your employees will follow.

It is the obligation and responsibility of leadership to be the light. All companies will go as their leaders go.

An effective leader can drive people to extraordinary results, or they can also limit the potential of everyone around them. The book of history is full of tales about people who had little to no success with one organization or team, and their move to a new home saw them energized and fulfilling potential that nobody ever knew existed.

So the question that must be asked is "What kind of leader am I, and am I the light for my organization, or am I holding them back?"

The answer can be found in the enthusiasm and performance of your employees.

### Culture

Culture is an overused word, and many still don't understand its meaning.

Your company culture is the measure of your success as a leader.

Culture isn't measured in how many pizzas you buy your team on a Friday, or how many gift cards you distribute.

A company's culture is a living, breathing organism. It is fed by the values that the company practices, and the positive influence of the company's leaders.

- A business culture is built and grown by your leadership team.
- It is the level of expectation and the discipline surrounding those expectations.
- It is how well we take care of the emotional, social, financial, and motivational needs of our employees.
- It is the way a company celebrates employee achievements.
- It is the amount of preparation a company puts in to prepare for an employee's first day.
- It is the pride a company puts into its reputation.
- It is measured in smiles.
- It is the career path you have

clearly defined for your employees.

- It is measured by the praise you give each day.
- Your culture can be found in the number of online reviews your business accumulates.
- It is seen in how many employees you meet with every week.
- It is demonstrated by the cleanliness of your trucks.
- It is the sum of your company's core values.
- It is the amount of training that you provide everyone to learn and grow.

### Employee Engagement & Loyalty

Twice in the past month I have gone to the grocery store and have completed my twice monthly ritual of picking up gift cards to distribute to my staff. Amazon, Target, Home Depot, Jersey Mike's.....a wide variety that will appeal to all.

Each time, as I checked out, as a control measure, the cashier asked if anyone was making me buy the gift cards, and if anyone has promised me anything in return for purchasing them. Crazy world, so I completely understand the questioning.

Each time, I explained that they are for my employees. Both times, my statement was met with the same reaction...."wow, I want to work for you....they don't do anything for us here."

Just my simple transaction was enough to remind these employees that they are underappreciated, and that other businesses do more for their staff. Unsatisfied employees look elsewhere for opportunity.

So how do we know if our own employees are unhappy, and how do we keep this from happening in our businesses? We develop a process for keeping people happy.

Follow these simple steps to make sure you have happy employees:

- Hire or make someone your "Director of People". This is typically adjacent to your Human Resources Department, but someone in the business needs to be accountable for executing a plan to keep employees engaged and happy. It needs to be a system in your business, just like everything else. Otherwise, it will never get done.
- Establish a budget for employee events, contests, meals, company gear, gifts, etc. and accrue monthly.
- Determine a way to publicly acknowledge employee achieve-

ment daily/weekly.

- Build incentive plans for your staff that are a win/win.
- Provide unexpected reasons for your employees to be happy (can be as simple as ordering lunch for a department).
- Give each Department Leader a budget to spend on a Goal Dinner for their staff. These dinners are irreplaceable for building camaraderie, which of course builds loyalty.
- Encourage Leadership to schedule one-on-one meetings with each team member to check-in and make sure they know they are appreciated.
- Schedule Performance Reviews annually at a minimum. These meetings aren't to give an obligatory raise, but to review performance. Employees must have KPI standards to measure their performance against, and hopefully an incentive plan tied to those results.
- Remember the little things that

are important to your staff: Coffee, birthdays, employee anniversaries, company-branded clothes, holiday celebrations, etc.

• Schedule All-Company Meetings monthly. It is important to get everyone in one room regularly. This reminds them that they are a part of a team that is all working toward the same goal.

### Final Word

John C. Maxwell said that "Everything Rises and Falls on Leadership."

Your HVAC business is a direct reflection of who you are as a person, and as a leader. If your building is depressing, and your trucks are damaged, and your online rating is three stars, there is nobody to blame for this but yourself.

It's time to do some Spring Cleaning. Time to look in the mirror and see what you need to change

to have the kind of business that takes employee satisfaction seriously. Happy employees are loyal employees. They want to work somewhere that they are a part of a team that is happy and supports each other.

It is a critical point to understand that leadership controls employee loyalty. If people feel appreciated and rewarded, they will never leave.

*Lawrence Castillo is the President/ 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.*



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# Cover Story

Continued from Page 1

rently. This year's AHR Expo set a goal to open new lines of communication between the communities that make up the whole industry, particularly those seeking new channels of access for discussion. A panel series accomplished this by posing topics and questions to rouse discussion rather than seeking a solution. On the stage this year, we heard from industry leaders heading up our associations, commanders of trending topics and stewards of the trade.

"In the months leading up to the show, we are intentional in our efforts to speak to members from all disciplines within HVACR," said Stevens. "We are grateful for the unique opportunity to connect all industry audiences and are devoted in our efforts to represent every role in our education programming. This is an area of growth for us and the fruits of these efforts are evident in the conversations we see blossoming. We live in an age of connection and the need for deepened communication at every level is apparent. As the largest event to host the entire industry, we are delighted to provide a forum to

host these conversations in our programming and in face-to-face networking on the show floor."

In the session, HVACR State of the Industry Leadership Panel Discussion: Today's Market, Challenges, Opportunities and What's Ahead, leadership from AHRI, ASHRAE, HARDI, NCI and PHCC discussed gaps in the industry that need to be addressed in order to continue on a progressive path. Bryan Orr of HVAC School moderated as the group highlighted what is working, areas for improvement and what lies ahead.

On Tuesday afternoon, Kyle Gargaro of ACHR The News moderated a discussion among industry advocates of decarbonization in the panel discussion, Decarbonization and the Future of HVAC, featuring Luke Leung, Principal at Skidmore, Owings & Merrill; Kevin Edstrom, Senior MEP Manager at Hines; Kent Peterson, PE, FASHRAE, Vice President & COO at P2S Inc.; and Donald Horn, FAIA, LEED Fellow U.S. GSA, Deputy Director at Office of Federal High-Performance Green Buildings.

This year, AHR Expo expanded its education programming to

Wednesday. The headliner panel, HVAC & Social Media: Strengthening the Trade with a Community Mindset, featuring social media influencers of the industry, was the first of its kind discussion. Hosted by some of the industry's most active content creators and trade mentors, new lines of communication were formed through a deep dive into an open conversation about how all shareholder roles can work together to better the industry as a whole.

Links to view these sessions in their entirety will be available on [ahrexpo.com](http://ahrexpo.com) soon.

## Innovation and mapping the future of HVACR

In 2024 the AHR Expo will hit the road to Chicago. Save the date for January 22-24, 2024 and stay tuned as we roll out information to help prepare for your visit to HVACR's epic event.

"What a show," concluded Stevens. "This is the industry to be a part of right now. We are essential; we are poised for growth and the world needs us to be prepared to solve problems and meet demands. We're excited to play a role in launching new products, services,



THE LG RESIDENTIAL PRODUCTS BOOTH AT THE 2023 AHR EXPO.

conversations and partnerships to make it happen. We hope to see you in Chicago."

Registration is expected to open early summer. For more information, show recaps and to sign up to receive updates, visit [ahrexpo.com](http://ahrexpo.com).

The AHR Expo is the essential event for HVACR professionals, attracting the most comprehensive gathering of the industry from around the globe each year. The show provides a unique forum where manufacturers and suppliers

of all sizes and specialties come together to share ideas and showcase the future of HVACR technology. Since 1930, the AHR Expo has remained the industry's best place for OEMs, engineers, contractors, facility operators, architects, educators and other industry professionals to experience everything new in HVACR and build relationships. The AHR Expo is co-sponsored by ASHRAE and AHRI and is held concurrently with ASHRAE's Winter Conference.

## Industry Events

### ASHRAE Recognizes Excellent Achievements of Members at 2023 Winter Conference

ASHRAE recognized the excellent achievements and contributions of members to the Society and the built environment industry during its 2023 Winter Conference in Atlanta.

A list of the awards and recipients are below:

#### Fellow ASHRAE

Fellow ASHRAE is a membership grade that recognizes members who have attained distinction and made substantial contributions in HVAC&R and the built environment such as education, research, engineering design and consultation, publications, presentations and mentoring. The Society elevated 13 members to the grade of Fellow:

- Billy Austin, BCXP, BEAP, BEMP, CHD, HBDP, HFD, OPMP, principal, Shultz Engineering Group, PC, Charlotte, N.C.
- Christopher Chao, vice president, Research and Innovation, chair professor, Thermal and Environmental Engineering, director, Policy Research Centre for Innovation and Technology, The Hong Kong Polytechnic University, Hong Kong.
- Kelley Cramm, P.E., mechani-

cal technical manager and associate, Henderson Engineers, Lenexa, Kan.

- Srinivas Garimella, professor, Hightower chair in engineering, Georgia Institute of Technology, Atlanta, Ga.

- James T. Hanley, retired, senior research environmental scientist and program manager, RTI International, Triangle Park, N.C.

- Kenneth E. Hickman, Ph.D., Life Member ASHRAE, consultant, Johnson Controls, York, Pa.

- Michael Kauffeld, Ph.D., professor, Karlsruhe University of Applied Sciences, Karlsruhe, Germany.

- Syed Shehzad Raza Kazmi, principal engineer and CEO, ACS Engineering Concern, Lahore, Pakistan.

- Francis Mills, C.Eng., Life Member ASHRAE, Frank Mills Consulting, Leyland, Lancashire, United Kingdom.

- Milind Vishwanath Rane, Ph.D., professor, Indian Institute of Technology Bombay, Mumbai, India.

- Anand Seth, P.E., Life Member ASHRAE, (posthumously) ASA Consulting, North Reading, Mass.

- Gordon P. Sharp, president,

International Institute for Sustainable Laboratories, Arlington, Va.

- George A. Tsongas, Ph.D., P.E., Life Member ASHRAE, building scientist and consulting engineer, Portland, Ore.

#### Award of Engineering Excellence

The Award of Engineering Excellence was created in 1989 to recognize a first-place winner of the Society-level Technology Award competition for an outstanding application of innovative design and effective energy utilization. The recipient of the Award of Engineering Excellence will have demonstrated the best overall compliance with the judging criteria.

First place recipients of the Award of Engineering Excellence are:

- Lianne Cockerton, ing. and Martin Roy, ing., new institutional buildings category, Local 144, Point-aux-Trembles, Quebec, Canada. The building is owned by Association Unie Local 144.

#### The ASHRAE Technology Awards

The ASHRAE Technology Awards recognize outstanding achievements by ASHRAE mem-

bers who have successfully applied innovative building designs. Their designs incorporate ASHRAE standards for effective energy management and indoor air quality and serve to communicate innovative systems design. Winning projects are selected from entries earning regional awards.

- Nobuhiro Hirasuga, Shun Kato, Takashi Akimoto, Ph.D. and Yu Sakamoto, new commercial buildings category, Shinryo Shinjo Building, Tokyo, Japan. The building is owned by Shinryo Corporation.

- Tyler Larkin, Tracy Steward and Thom Anderson, existing commercial buildings category, Ingalls Building, Cincinnati, Ohio. The building is owned by SREE Hotels LLC.

- Raymond Man-Hung Yau, Ph.D. and Kwai Ping Lau, EBCx commercial buildings category, Retro-Commissioning and Digital Transformation Cityplaza Mall, Hong Kong. The building is owned by Swire Properties Limited.

- Drew Roberts and Benjamin Hobbs, new educational facilities category, BCPS Holabird and Graceland Schools, Baltimore, Md.

The building is owned by Baltimore City Public Schools.

- John Andary, P.E., new health care facilities category, Santa Rosa Medical Office Building 6, Santa Rosa, Calif. The building is owned by Kaiser Permanente.

- Simon Kattoura, P.Eng., existing industrial facilities or processes category, Hood Packaging Corporation, Montreal, Quebec, Canada. The building is owned by Hood Packaging Corporation.

- Lee Harrelson, P.E., Tracy Steward, Dennis Finn Jr., P.E. and Brian Turner, new public assembly category, Lubber Run Community Center, Arlington, Va. The building is owned by Arlington County Department of Environmental Services.

- Adrienne Mitani, P.Eng., residential facilities category, 70 Gloucester, Ottawa, Ontario, Canada. The building is owned by Claridge Homes.

#### Student Design Competition

The 2022 Student Design Competition focused on the design of a new 23,300 m<sup>2</sup>, two-story performing arts building on a higher





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# Industry Events

Continued from Page 24

education campus in Sydney, New South Wales, Australia. As part of the project, new HVAC systems were designed for the performing arts building. The building consists of offices, classrooms, studios, performance halls, auditorium, offices, food services, and parking area.

First place in the HVAC Design Calculations category was awarded to the University of Hong Kong, Pok Fu Lam, Hong Kong. Team members are Cheung Wan Ki, Chow Sze Wah, Sum Ho Yin and Yung Ho Lam.

First place in the HVAC System Selection category was awarded to Pennsylvania State University, State College, Pa. Team members are Donald Black, Mason Blank, Sarah Halstead, Isabella Zuccaro and Weston Kimmey.

First place in the Integrated Sustainable Building Design category was awarded Universitas Indonesia, Indonesia. Team members are Bagus Rangin, Edward Mendrofa, Harrys Argaditya, Nadhira Izzatur, Rizki Siregar and Satria Sutan Azhari.

## The Setty Family Foundation Applied Engineering Challenge

The Setty Family Foundation Applied Engineering Challenge requires students to plan, develop and enact solutions to sustainability issues in their local or regional areas. In the 2022 Setty Family Foundation Applied Engineering Challenge, students were challenged to design an ultra-cold refrigeration system for vaccine delivery that is capable of being transported to all global locations.

The first place student team is

from Bandung Institute of Technology, Indonesia. Team members are Axel Dawne, Farhan Afdhalul Ihsan, Febricetta ZahraKetia Sarwono, I Made Wiratathya Putramas, Joel Fredericko Sumbowo and Kanita Prameswari.

## E.K. Campbell Award of Merit

James Kamm, P.E., Ph.D., Fellow Life Member ASHRAE, received the E.K. Campbell Award of Merit. The award honors an individual for outstanding service and achievement in teaching and is presented by the Life Members Club. Kamm is professor emeritus, University of Toledo, Toledo, Ohio.

## ASHRAE Award for Distinguished Public Service

William F. McQuade, P.E., Fellow Member ASHRAE, received

the ASHRAE Award for Distinguished Public Service. The award recognizes members who have performed outstanding public service in their community and, in doing so, have helped to improve the public image of the engineer. McQuade is vice president, Sector Services, Air Conditioning, Heating, and Refrigeration Institute (AHRI), Arlington, Va.

## John F. James International Award

Mahroo Eftekhari, CEng., received the John F. James International Award. The award recognizes a member who has done the most to enhance the Society's international presence. Eftekhari is professor, Building Services Engineering, School of Architecture, Building and Civil Engineering, Loughborough University, Loughborough,

United Kingdom.

## YEA Inspirational Leader Award

Jacob Kopocis received the YEA Inspirational Leader Award. The award recognizes a Young Engineer in ASHRAE (YEA) member who has gone above and beyond to make considerable contributions to the industry and community. Kopocis is in mechanical sales, Omaha, Neb.

## ASHRAE Hall of Fame

Curtis O. Pedersen, P.E., Fellow Life Member ASHRAE (1934-2012) was inducted into the ASHRAE Hall of Fame. The ASHRAE Hall of Fame honors deceased members of the Society who have made milestone contributions to the growth of ASHRAE-related technology or the development of ASHRAE as a society.

# Features

## Johnson Controls Celebrates Extraordinary Women in HVAC for International Women's Day

Employment of HVAC mechanics and installers is projected to grow five percent from 2021 to 2031 with more than 20,000 job openings estimated each year on average over the next decade, according to the Bureau of Labor Statistics. Despite the vast opportunity and ongoing skilled trades labor shortage, women remain significantly underrepresented – only making up 2.3% of HVAC mechanics and installers in 2022.

Johnson Controls is actively working to increase the number of women in HVAC through education and initiatives that support gender diversity, including its Women's Global Network and Women in Ops group. The company is committed to building a diverse and inclusive team that will continue to help attract the best talent and drive best-in-class performance of products and services. Part of living out that belief is recognizing the remarkable professionals making a difference in the HVAC industry. In honor of International Women's Day, Johnson Controls is shining a light on three of them.

Bridget Klinke is a persevering leader within the ducted systems business at Johnson Controls, working as a senior manager business systems analyst. She started her career more than 20 years ago at Johnson Controls (York International at the time) as an IT support intern. Today, she leads a team of highly skilled professionals, including business analysts, software developers, architects



BRIDGET KLINKE

and quality assurance analysts. Together, they support web, desktop, and mobile HVAC tools, working in close collaboration to establish, prioritize, test, and release business and customer requirements.

Over the course of her two-decade career, Bridget has witnessed firsthand notable changes in the representation of women at Johnson Controls. "At Johnson Controls, we have taken steps to promote inclusivity and create a supportive environment for all employees," she said. "One of these steps includes establishing business relationship groups specifically for women, which provides valuable resources and support to employees. I am proud to be part of an organization that recognizes and values diverse perspectives and contributions of its employees."

For women considering entering the HVAC field, she believes it's essential to build a robust support system for both your personal and professional life. Joining profes-



NAN GORDON

sional organizations, networking with other women in the industry, and seeking out a mentor can be an excellent way to build these relationships and gain support when needed. Secondly, Bridget believes it's crucial to advocate for yourself and speak up when you encounter bias or discrimination. "Don't let anyone make you feel small or marginalized in your role," she said. "Remember, you have a valuable contribution to make to the industry, and your voice deserves to be heard."

In her free time, Bridget enjoys attending her daughter's swim meets, spending time with family and friends, shopping and traveling.

Nan Gordon is a passionate, hands-on AME manufacturing engineer who started her career at Johnson Controls in 1996 (York International at the time) working as an entry-level manufacturing line engineer. She worked her way up to senior manufacturing engi-



REGAN AXTELL

neer and has installed or revitalized more than a dozen assembly lines at the Johnson Controls commercial HVAC manufacturing plant in Norman, Oklahoma. She then became the supervisor of the assembly engineers and was heavily involved in new product development. In Nan's current role as project engineer, she focuses on installing assembly lines to support the demand for current products as well as new products being introduced over the next two years at the Norman facility.

Nan has two mentors throughout her career that have truly shaped who she is as an engineer. The first is her current supervisor Rick Canada who has taught her that no matter the size of the project, it's the attention and care to all the details, regardless of how small they may seem, that make the project successful. Her second influence was Vicki Davis who was the first woman in leadership that Nan worked with as she watched

Vicki progress from line supervisor to plant manager. "Her example of how to be a strong woman who is respected for her knowledge and leadership has shown me that there are no limits to what women can achieve in the manufacturing industry," said Nan.

She has found that being dismissed or condescended to by male leaders is the biggest challenge she has had to overcome in her career in a predominantly male industry. However, as more female engineers entered into manufacturing, the environment has changed in a positive way that values what women bring to the table. Her advice to other women in the industry is to stand your ground and always speak the truth.

Outside of work, whether the sun is out or not, you can find her outside exercising her passion for gardening.

Regan Axtell is an engaging and collaborative senior product manager at Johnson Controls that is never afraid to ask questions – something she deems has driven her career success. She works closely with research, engineering, manufacturing and sales teams, as well as customer partners to develop the product road maps for residential HVAC equipment. This process includes competitive analysis, voice of customer, regulatory compliance, product development, marketing and training with sales and distribution teams to ensure products meet customer demands,

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# Case Studies

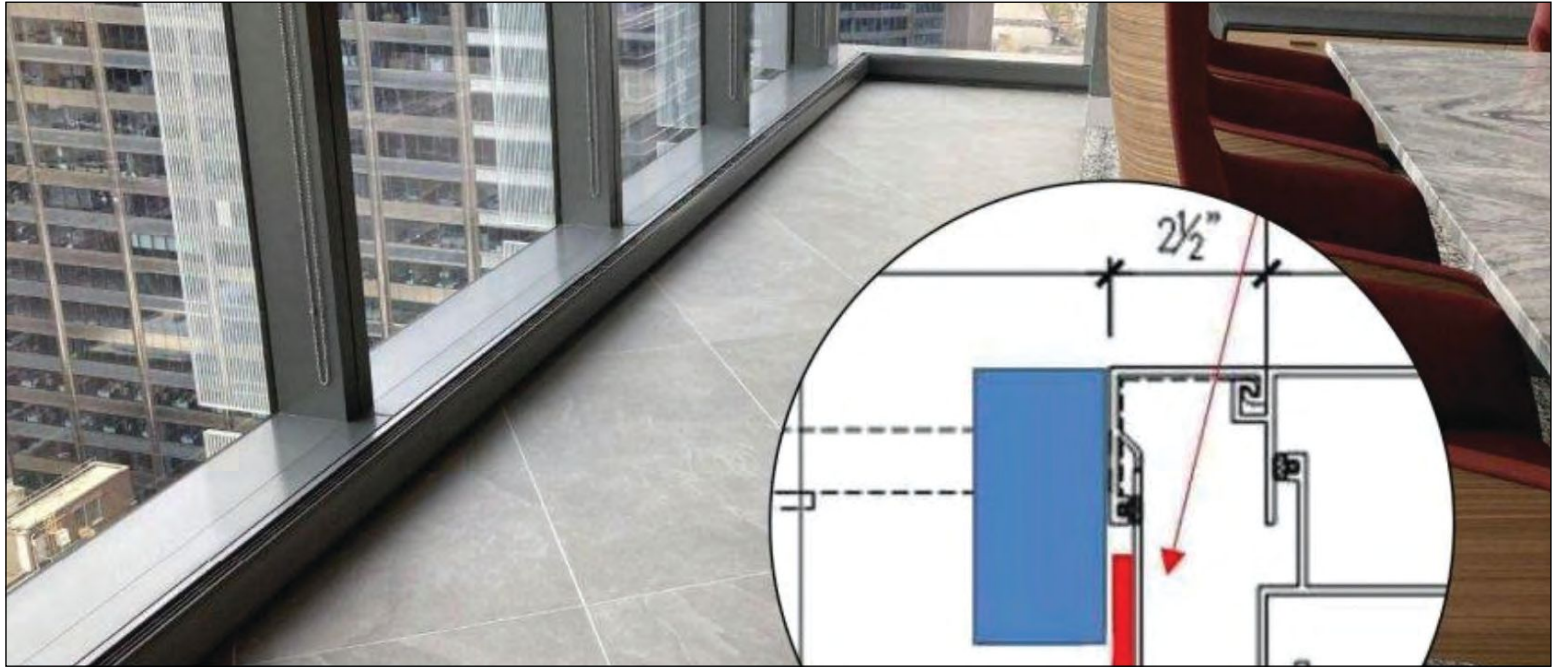
## Custom Heater Design Enables Chicago Buildings to Deliver Floor-to-Ceiling Heat

While planning to install linear wall-to-wall convector heaters on a perimeter curtain wall at the 150 North Riverside Plaza high rise in downtown Chicago, the owner sought an effective way to maintain the aesthetic of the building without sacrificing floor space. Custom convection style heaters, along with a custom-shaped bracket developed by Thomas Sales & Marketing, a manufacturer's representative of mechanical and electrical products, leveled the heater perfectly from the top of the windowsill to the preferred section of the wall, proving to be the game-changing solution.

"Convector heaters use the natural air currents that circulate throughout the room and across the unit's heating element to heat the space, ensuring that guests are met with warmth and comfort from the time they enter the building until they leave," said Andrew Martin, manager of Product Management with Marley Engineered Products. "They are ideal for offices, hallways, lobbies, conference rooms, retail stores and other buildings with floor-to-ceiling windows."

### Installing Heaters without Sacrificing Floor Space

Located on the west bank of the Chicago River, 150 North Riverside Plaza features perimeter curtain walls that consist of floor-to-ceiling 12-foot windows. Although the client desired SLQDB Series convector heaters from Marley Engineered Products to be installed for elegant, supplemental comfort for heat loss and condensation prevention, the challenge came from the architectural nature of the project, as well as the need for available floor space in this 10-floor buildout. The client preferred not to see a pedestal mounted convector for aesthetic



THE CUSTOM BRACKET INSTALLATION COUPLED WITH MARLEY'S CONVECTOR HEATERS PROVED TO BE A SUCCESS FOR THE CHICAGO HIGH RISE.

reasons, nor did they want to lose the six inches of floor space along the perimeter to a heater. Over the entire buildout, it would have resulted in more than 5,000 sq. ft. of lost space.

Another issue revealed itself when the heater could not be wall mounted to the curtain wall because it required drilling into the window mullion, which would have voided the warranty of the window system. Additionally, the level of the curtain wall and lower sill ranged between 6" and 10" constantly changed throughout the floor, and the heater needed to be mounted level with the windowsill and match the color of the curtain wall.

"The varying heights of the window system limited our ability to install the heaters directly where they needed to be," said David Molk, co-owner of Thomas Sales & Marketing. "Therefore, we needed a custom design that enabled us to mount the heaters properly."

### ABCs of Bracketology: Which Shape is Best?

The solution was the development of a custom bracket with custom length heaters and colors, along with infield cutting/miters and the contributions of several electricians.

Designing the bracket proved to be the largest hurdle as multiple variations were created. The initial version was similar to that of a C-shape, however, after close review and evaluation between all parties, the final iteration was an L-shaped bracket with a custom color to match the curtain wall. This design ended up as the perfect solution because the brackets were ordered to the general height of that section of wall (6"-10"), leveled in field and fastened to the floor. The installer then marked and welded bolts to the bracket from which the heater was hung.

To make the installation work, the bolts had to be at the perfect dimension from the top of the windowsill down to a portion

of the heater that did not impede any internal parts. On top of that, the holes in the back of the heater also had to match exactly with the layout of the bolts for everything to fit properly.

"David designed his own L-shaped bracket to attach to the floor and fit snugly against the window mullion," said Martin. "The convectors were then attached using bolts welded to the bracket, and everything was painted the same color as the window mullion, creating a clean, finished look and a true example of hidden heat."

The success of the project resulted in a very happy customer. The general contractor was so pleased, in fact, that the installation method became the go-to standard convector buildout installation technique for the developer and was repeated at two more buildings in downtown Chicago: 110 N. Wacker Dr. and

320 S. Canal St.

Marley Engineered Products® is a leading North American designer and manufacturer of reliable comfort heating and ventilation solutions for residential, commercial and institutional buildings. Recognized by contractors, architects, engineers and HVAC professionals for providing a wide range of high-performance, reliable heating and ventilation solutions, Marley Engineered Products' brands include QMark®, Berko®, Fahrenheit® and Leading Edge®.

Marley Engineered Products' manufacturing operations are based in Bennettsville, S.C., with regional sales representatives located throughout the U.S. and an administrative office in Burr Ridge, Ill.

Additional information is available at [www.marleymep.com](http://www.marleymep.com).

## DOE New Standards

Continued from Page 1

savings.

The products covered by these rules currently account for 5% of annual residential energy use, which amounts to 8% of residential electricity use in the United States. If adopted within DOE's proposed timeframe, the new rules will come into effect in 2027. DOE expects the new rules to save consumers more than \$60 billion over the ensuing 30 years of shipments. Households using new refrigerators and clothes washers will save an estimated \$425 on their

utility bill over the average life of the appliance with these standards in place, on top of the benefits Americans are experiencing from prior improvements. Over the next 30 years, the two rules are expected to reduce carbon dioxide emissions by 233 million metric tons – an amount roughly equivalent to the combined annual emissions of 29 million homes.

The proposals build on the more than 110 actions the Biden-Harris Administration took in 2022 to strengthen energy efficiency standards and save the average family at least \$100 annually through lower energy bills. Collectively these energy efficien-

cy actions will reduce greenhouse gas emissions by more than 2.4 billion metric tons, save consumers \$570 billion cumulatively over 30 years, and support President Biden's ambitious clean energy agenda to combat the climate crisis.

DOE's Building Technologies Office implements minimum energy conservation standards for more than 60 categories of appliances and equipment. To learn more, visit the Appliance and Equipment Standards Program homepage at <https://www.energy.gov/eere/buildings/appliance-and-equipment-standards-program>.

## Duct Leakage Testing?



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# 2023 TRAINING

CALIFORNIA QUALITY INSTALLATION, QUALITY MAINTENANCE AND QUALITY SERVICE

## SOCALGAS, DOWNEY

### APRIL

#### Electrical Module (Webinar)

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

Wed., April 5 – Part 3

Thurs., April 6 – Part 4

### MAY

#### AC/HP Refrigeration Module

(Four-Night Class) Instructor: John Dalton

Wed., May 3 – Part 1

Thurs., May 4 – Part 2

Wed., May 24 – Part 3

Thurs., May 25 – Part 4

### 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

### APRIL

#### AC/HP Refrigeration Module

(Four-Night Class) Instructor: John Dalton

Wed., April 12 – Part 1

Thurs., April 13 – Part 2

Wed., April 19 – Part 3

Thurs., April 20 – Part 4

### MAY

#### NATE CORE & Gas Heating Training

(Four-Night Class) Instructor: Mike Griffin

Wed., May 10 – Part 1

Thurs., May 11 – Part 2

Wed., May 17 – Part 3

Thurs., May 18 – Part 4

### 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

### APRIL

#### Air Distribution Module

(Four-Night Class) Instructors: Mike Griffin/ Mitch Bailey

Wed., April 12 – Part 1

Thurs., April 13 – Part 2

Wed., April 19 – Part 3

Thurs., April 20 – Part 4

### MAY

#### System Performance Module

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

Wed., May 10 – Part 1

Thurs., May 11 – Part 2

Wed., May 17 – Part 3

Thurs., May 18 – Part 4

### 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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**All In-Person classes subject to change based on I**  
**Classes begin at 6:00 PM Pacific Time and class**  
**Register at [www.ihaci.org](http://www.ihaci.org)**

# CLASS SCHEDULE

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

## SAN DIEGO GAS & ELECTRIC

### APRIL

#### Electrical Module (Webinar)

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

Mon., April 3 – Part 1

Tues., April 4 – Part 2

Mon., April 10 – Part 3

Tues., April 11 – Part 4

#### AC/HP Refrigeration Module (Webinar)

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

Mon., April 17 – Part 1

Tues., April 18 – Part 2

Mon., April 24 – Part 3

Tues., April 25 – Part 4

### MAY

#### System Diagnostics Module (Webinar)

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

Mon., May 8 – Part 1

Thurs., May 9 – Part 2

Mon., May 15 – Part 3

Thurs., May 16 – Part 4

### 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

### APRIL / MAY

#### AC/HP Refrigeration Module (Webinar)

(Four-Night Class) Instructor: Mitch Bailey

Wed., April 26 – Part 1

Thurs., April 27 – Part 2

Wed., May 3 – Part 3

Thurs., May 4 – Part 4

### MAY

#### Electrical Module (Webinar)

(Four-Night Class) Instructor: Mitch Bailey

Wed., May 24 – Part 1

Thurs., May 25 – Part 2

Wed., May 31 – Part 3

Thurs., June 1 – Part 4

### 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

### 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.**  
**OUS/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



CARLOS CASTRO

NAVAC, the world's largest supplier of HVAC vacuum pumps in addition to a wide array of tools, gauges, recovery units and industry-specific items, has hired HVAC sector professional **Carlos Castro** as its newest Sales Manager for the Western Region, which includes California, Arizona, Nevada, Hawaii, Oregon, Washington, Alaska, and Idaho.

The Western region is NAVAC's fastest growing, and Castro will oversee several important sales partner companies, includes Wright Sales and Cascade Products. Castro also will have key roles in expanding market share in Latin America, due to his strong contacts, market knowledge and fluency in both English and Spanish.

Before joining NAVAC, Castro served as an area sales manager for Nu-Calgon, where he oversaw the Florida and Caribbean markets. Prior to this, he managed territory as an independent representative of Hamilton & Associates, whose lines included Friedrich, Linesets Inc (a Mueller Company), and Blue Diamond (Mitsubishi's preferred condensate pump). During his career he has received a variety of sales awards and honors.

"With his extensive and expansive HVAC product and manufacturing experience, Carlos will be a key asset to helping NAVAC be the top manufacturer across multiple categories," said Keith Keller, Director of Sales, Southern Division for NAVAC.



The Tranzonic Companies, a respected manufacturer of cleaning, maintenance, and personal protection products, has named **Chris Adams** its new vice president of supply chain. Adams brings a quarter-century of experience in business-to-business distribution to the role. He has successfully led cross-functional teams in sales, marketing, supply chain, cost to serve analytics, and operations to consistently achieve breakthrough performance in profit and revenue.

At Tranzonic, Adams will lead

the inventory management and logistics teams while also imparting his expertise to operations and system integration.

"The global supply chain has experienced a seismic shift the likes of which we've never seen," said Tom Friedl, CEO. "With his history of innovation, I know Chris is the leader to build on Tranzonic's successes and keep us thriving in this changing landscape."

In his 25-year career, Adams has held senior executive positions with Fortune 500, global, and multi-billion dollar companies. He has been recognized for breakthrough work in distribution, measurement systems, value chain mapping, data analytics, and innovative collaborative strategies. His work has been recognized by Harvard Business Press Balanced Scorecard Report and Harvard Business Review. An early success came with his role on the innovative marketing team that helped develop the retail market for the now gold-standard PURELL® Instant Hand Sanitizer brand.

"Navigating today's supply chain challenges demands creative thinking, solid strategy, and collaboration," said Adams. "Working with the foundation already in place, I look forward to working with my new Tranzonic team to develop and implement profitable new strategies."

Adams is an advisor to the State of Georgia's Center of Innovation and Logistics. He also serves as chairman for Marquette University's Center of Supply Chain Management executive board. He was a summa cum laude graduate of Benedictine University and leads strategy development on their alumni board.



CHRIS ADAMS



Oatey Co., a leading manufacturer in the plumbing industry since 1916, announced that **Michelle Newland** will serve as Executive Vice President and Chief International Business Officer, dedicated to growing Oatey's international business, effective January 1, 2023. Also effective that date, **Brian DiVincenzo** will assume



MICHELLE NEWLAND



BRIAN DIVINCENZO

responsibility for all U.S. sales and marketing, serving as Executive Vice President and Chief Commercial Officer.

During her more than 20-year tenure at Oatey, Newland has been the driving force behind Oatey's retail business, serving most recently as President of the company's retail and international business unit. In support of Oatey's global growth strategy, Newland's new role will allow her to focus exclusively on Oatey's international business, with responsibility for sales, marketing and operations in Canada, Mexico and other strategic regions around the world, excluding China.

"Michelle has the proven ability to drive business growth, build relationships and achieve sustained results," said Neal Restivo, Oatey's Chief Executive Officer. "She is uniquely qualified to lead our international growth efforts, leveraging her extensive knowledge, experience and relationships to enhance Oatey's position around the globe."

DiVincenzo joined Oatey Co. more than 11 years ago as Regional Sales Manager and progressively advanced as a strategic business leader, most recently serving as President of Oatey's wholesale and commercial business unit. In his new role, DiVincenzo will expand his responsibility to include sales and marketing across all channels in the United States, including retail, wholesale, commercial and eCommerce.

"Brian is a proven leader in our industry with a clear track record of success in driving growth and building long-term relationships with our customers and business

partners," said Restivo. "The senior leadership changes we are making better position us to achieve our strategic priorities and serve the needs of our customers as our markets continue to evolve."

Oatey will still maintain separate sales teams for its retail and wholesale businesses in the United States, which will continue to be led by their current leaders.

"Both Brian and Michelle have provided exceptional leadership to Oatey for many years and have been instrumental in our organization's growth and success," Restivo added. "I am confident that their expertise, experience and commitment to our customers will continue to serve us well as they transition to their new roles."



Danfoss is pleased to announce that **Sheila Lenss** has joined as vice president, head of its Americas Drives business. Lenss, who began her new role last fall, replaces Ian Barrie, who is retiring after 28 years at Danfoss. She brings more than 20 years of executive business leadership to the role.

"Danfoss Drives is a significant player in the market, and I appreciate all that our Americas team has done to get us to this point," said Barrie. "We are able to offer the full value chain – manufacturing, research & development and sales and service operations – which allows us to be more responsive and efficient with our customers, and Sheila is the ideal leader to continue our growth trajectory."

Lenss joins Danfoss from Carrier, where she was leading their industrial fire (Oil & Gas) vertical business. Prior to working at Carrier, Lenss held various marketing, sales and operations leadership roles with Honeywell both domestically and globally. She has also worked with start-up and mid-size B2B companies in industrial and commercial markets.

"I am excited to join Danfoss Drives and continue to strengthen our performance in North and Latin America," said Lenss.



SHEILA LENSS

"North America in particular offers significant growth for Danfoss as the world recovers from the pandemic and we will continue to invest in our core markets and new opportunities."

"Ian has put a strong foundation in place for Danfoss Drives in the region," said Rick Sporer, president of Danfoss North America. "I am grateful to him for his leadership and look forward to continued success under Sheila's direction."

Lenss has a bachelor's degree in marketing from the University of St. Thomas and has completed executive education programs at Harvard University and Boston University. She is Six Sigma certified.



BEAU BESANCENEZ

Diversified CPC International, a producer and distributor of propellants, refrigerants, and specialty gas products, welcomed **Beau Besancenez** as regional sales manager. He will be responsible for managing a portfolio of accounts in the Midwest and Western regions of the United States.

Prior to joining Diversified CPC, Besancenez spent seven years with Molson Coors Beverage Company, most recently as a distributor sales executive.

"Beau excels at collaborating with customers and developing valuable relationships with industry partners," said Charlie Ortman, national sales manager for Diversified CPC. "His innovative and customer-centric approach aligns with our core values. We are excited to have him as part of our growing team."

Besancenez has a bachelor's degree in business administration and management from Saint Leo University in St. Leo, Florida.



Century A/C Supply, an HVAC distributor in the Houston area, announced that **Ken Schreiber** has been promoted to president of Century A/C Supply.

Schreiber is an accomplished

# Indoor People

executive with more than two decades of senior management experience in the HVAC industry. He has over 30 years tenure with Century-affiliated companies and has held the positions of inventory control specialist, MIS director, VP of operations and most recently, general manager. As president, Schreiber will leverage his proven leadership experience to drive strategic planning,



**KEN SCHREIBER**

and profitability for the business. Schreiber most recently held the position of general manager and will be replacing Rick Luke, who has served as president since 1993 and will remain the president of air management supply in the Midwest, a sister company to Century A/C.

• • • • •

## Johnson Controls

Continued from Page 26

and manufacturing timelines and budgets.

Early on in Regan's career, she was fortunate to have a female manager and also works with one today. In both cases, their intelligence, passion, outspokenness and ability to keep cross functional teams engaged and working

SPX Technologies, Inc. ("SPX Technologies") announced the appointment of **Sean McClenaghan** as President, Global Cooling and an Executive Officer of SPX Technologies. As President, McClenaghan will lead the team at SPX Cooling Tech, LLC, a full-line, full-service industry leader in the design and manufacture of evaporative cooling systems and air-cooled heat exchangers, and their associated brands, including Marley®, Recold®, SGS Refrigeration and more.

McClenaghan brings over 25 years of extensive executive leadership experience to the SPX team. He joins SPX from Reliance Worldwide Corporation (RWC), where he served as Chief Executive Officer of RWC Americas. Before joining RWC in 2014, he spent over fifteen years in various



**SEAN MCCLENAGHAN**

strategic consulting and business development roles with McKinsey & Company, CHB Capital Partners, and Egon Zehnder. He began his career with DuPont, holding several operational and management positions ranging from Process Control Design Engineer to Plant Manager to Global Business Manager.

show respect to the people she's communicating with. She's found that operating with confidence and remaining engaged can, in most instances, outweigh any bias towards her gender or experience level.

Outside of work, she enjoys reading and spending time with her family traveling, boating and watching her kids at their activities.

towards the same goal have helped shape the way she's handled her career. They taught her to never stop asking questions.

Being a female, and relatively new to the HVAC industry, Regan made it her goal early on to not let either of those two factors get in the way of her career growth and ability to confidently manage a product. Standing tall, eye contact and active listening have given her the ability to gain and

## GOLD KEY Contest Winner

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



**Luke Bergerson**  
IA Designs

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

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