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DECEMBER 2023

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NEWS

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



Top Distributors, Manufacturers Commit to Six Million Heat Pump Goal

Agreement aims to achieve California's goal to have six million electric heat pumps installed by 2030.

Ten of the world's largest manufacturers, distributors and suppliers of building heating and cooling equipment signed an agreement committing to actions aimed at achieving California's goal to have six million electric heat pumps installed by 2030.

The announcement took place at a two-day summit hosted by the California Energy Commission (CEC) and EPRI in October. The event brought government leaders together with industry, academic, community partners and others to explore affordable, reliable, and equitable pathways to electrifying buildings – a key part of California's plan to achieve carbon neutrality by mid-century.

The manufacturers signing on include A. O. Smith Corporation, Carrier, Daikin, Fujitsu, Johnson Controls, Lennox International, LG Electronics, Mitsubishi Electric Trane HVAC US, Rheem Manufacturing Company, and Trane Technologies.

As part of the commitment,

they agreed to:

- Create the manufacturing capacity to help achieve the state's goal of installing six million heat pumps by 2030.
- Ensure heat pumps are good citizens of the electric grid by enhancing efficiency and incorporating load flexibility.
- Collaborate with the CEC to develop a public-private partnership to facilitate policy and market support to bring heat pumps into the mainstream.

"I applaud the vision and dedication of the 10 manufacturers who are stepping up to strengthen California's ability to deliver on our goal to install six million heat pumps," said CEC Commissioner J. Andrew McAllister, who is the lead commissioner on energy efficiency. "Partnerships with industry are critical in aligning policy and reality. This new commitment will ensure grid-friendly heat pumps are widely available and help consumers understand why they're the better choice for both comfort and the climate."

The pledge builds on policies and programs underway at the



(FROM LEFT) CEC COMMISSIONER ANDREW MCALLISTER, JOHN J. HURST (LENNOX), JOSHUA C. GREENE (A. O. SMITH), JASON THOMAS (CARRIER), DAVID CALABRESE (DAIKIN), MARK LESSANS (JOHNSON CONTROLS), CHRIS AHN (LG ELECTRONICS), CHRIS DAY (RHEEM), CEC CHAIR DAVID HOCHSCHILD.

CEC, California Air Resources Board, California Public Utilities Commission, and Governor's Office of Business and Economic Development. The activities are supported by the California Climate Commitment and Federal Inflation Reduction Act, which combined will provide \$1.5 billion for efforts to reduce emissions from buildings.

About Heat Pumps

- Heat pumps are a highly efficient electric technology for water and space heating that produce fewer emissions than traditional HVACs and water heaters.

- The 2022 Energy Code established heat pumps as the standard for new single-family homes.

- More than 1.5 million are currently installed throughout California.

- Current California market share for new single-family homes is 55 percent for heat pump space heaters and 16 percent for heat pump water heaters.

For information about rebates and loans for homeowners and renters, contractors, or local governments, visit the CEC's Building and Home Energy Resource Hub at www.energy.ca.gov.

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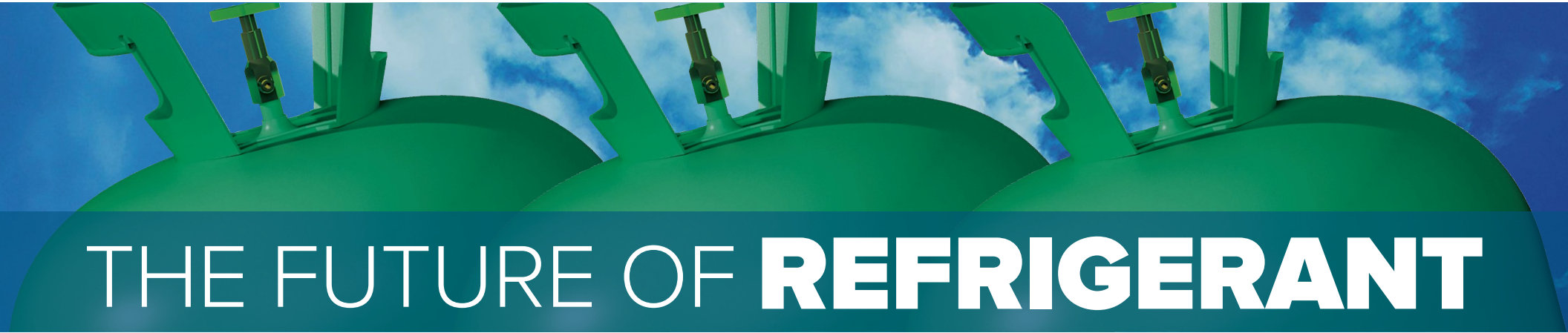


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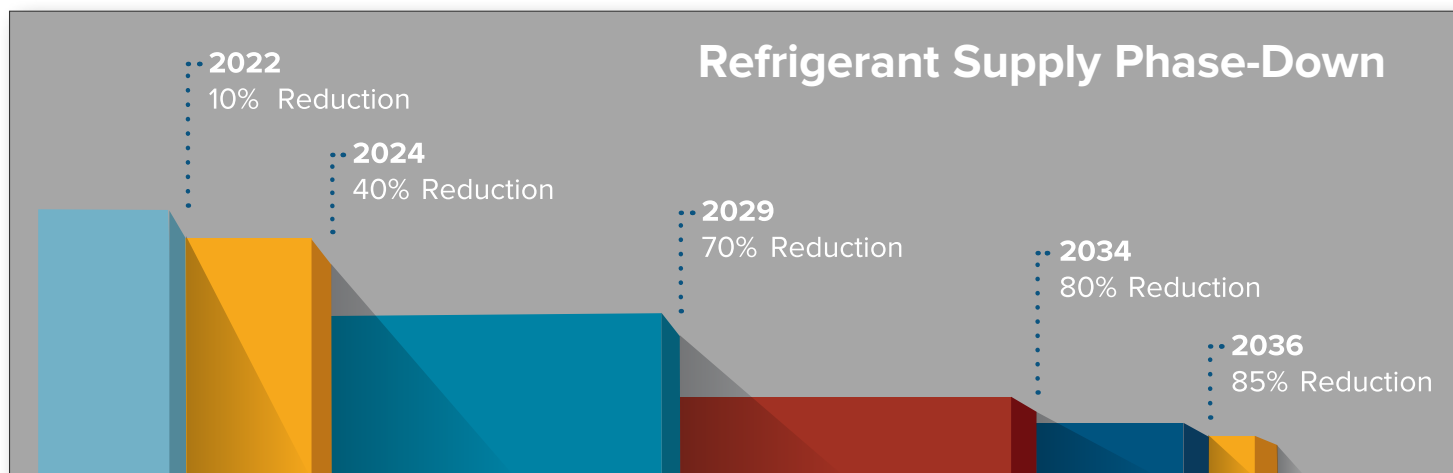
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WHAT IS R-454B?

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REFRIGERANT SUPPLY PHASE-DOWN TIMELINE

- Beginning January 1, 2025, the EPA will no longer allow manufacturers to build residential ducted and ductless HVAC equipment using the current R-410A refrigerant.
- R-454B not only meets but exceeds the new requirement with a GWP of 466 and is a 75% reduction in GWP compared to R-410A.
- The EPA’s vision for reduced GWP refrigerants in 2025 is just one part of the program.
- The other is a targeted phase-down of higher GWP gases like R-410A.
- The current goal of the phase-out is not a complete ban – it’s a gradual, 85% reduction in global warming emissions from refrigerants by 2036.



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CALIFORNIA



Rooter Hero Buys Candu Plumbing

Los Angeles, Calif. – Rooter Hero Plumbing & Air, a plumbing and HVAC company serving residential and commercial locations in California and Arizona, announced that it has added San Fernando Valley plumbing company Candu Plumbing & Rooter to its family of home service businesses.

“We are very fortunate to add Candu Plumbing to our expanding network of home service providers,” said Rooter Hero cofounder and CEO John Akhoian. “Candu Plumbing & Rooter comes to Rooter Hero with an excellent reputation in the San Fernando Valley. The plumbing expertise they bring to the table will help Rooter Hero expand our services to the residents there. Candu’s commitment to their customers to provide excellent plumbing and roofer services will remain the same.”

Former Candu Plumbing & Rooter owner Gorge Salcedo will remain with the company, serving as a field supervisor at the new Rooter Hero location.

Akhoian said that while all Rooter Hero locations provide competitive pricing, quality work and professional service, each office has an independent management structure.

“Many of our locations are green-fielded, but some are purchased from a local business owner,” he said. “Each of our offices have a unique management system even though all the locations are run through the company’s corporate office. When we do purchase a location from a local owner, we want the owner to stay with the company if possible, either as a general manager or in some other supervisory role.”

Salcedo said his team looks forward to the expansion opportunities available to them.

“For nearly 20 years, we have fixed, installed and helped maintain various plumbing systems throughout the San Fernando Valley, and now we’re thrilled to be a part of the Rooter Hero family,” he said. “We plan to continue the professional service we have always

provided now that we’re under the Rooter Hero umbrella.”

Candu Plumbing provides plumbing, gas line repair and installation, drain cleaning and roofer services to residents of Burbank, Canoga Park, Chatsworth, Granada Hills, Northridge, Pasadena, San Fernando Valley and Van Nuys, California communities.

Since 2011, Rooter Hero has been committed to providing the best in plumbing and drain services. With more than 100 years of plumbing heritage, the Rooter Hero team prides themselves on creating a memorable experience for each customer.

The company provides solutions for both residential and commercial needs and offers 24/7 emergency service. Operating in service area locations throughout California and Arizona, Rooter Hero offers options such as HVAC service and installation in select areas. For more information, please visit <https://rooterhero.com> or call 844-219-2215.



Action Air Gives Back to Community

San Marcos, Calif. – Action Air Conditioning, Heating and Solar, a trusted HVAC and solar company serving the San Diego community, is thrilled to announce its recent contribution to the local community. As part of the Action Gives Back initiative, the Action Academy class volunteered their time and expertise to install a brand new mini split unit at the Hula House, a Transitional Living Center for Women who have recently completed treatment and are working towards living sober before returning home.

Located in Vista, Calif., the Hula House provides vital support to women in need, and the installation of the mini split unit will make a significant impact on the center’s ability to offer a safe and comfortable environment to its residents. This initiative exemplifies Action Air’s commitment to strengthening the community they serve.

When Action mentioned Hula House to one of their vendors, Lennox Industries, what they were doing, they were more than happy to help as well. “They were gracious enough to donate new equipment to such a good cause,” said Richard Johnson, General Manager of Action Air Conditioning, Heating and Solar.

Stacey Dresser, the owner of Hula House, expressed her gratitude for Action Air’s support. She stated, “We wouldn’t be able to do this without all the wonderful gifts we’ve been given. It’s a life changing deal and I really appreciate it.”

Action Air Conditioning, Heating, and Solar has always been more than just a service provider; it’s a dedicated community partner. With a strong commitment to giving back, the company demonstrates its genuine concern for the community by participating in local initiatives and providing excellent service to its customers.

“We’re not just an HVAC and Solar company; we’re a part of this community,” said Johnson. “We are deeply grateful for the opportunity to serve and support causes that are close to our hearts, right here in our neighborhood. Our mission is to strengthen the community, and our involvement with the Hula House is a testament to that commitment.”

For more information, visit actionac.net.



USGBC Releases Paper on Water Management

Los Angeles, Calif. – The U.S. Green Building Council - Los Angeles (USGBC-LA) is releasing a white paper, “The Energy Cost of Water,” a comprehensive effort to delve into a crucial, but often overlooked aspect of water management – the embedded energy and carbon costs associated with water usage. For this paper, the regional focus is the arid landscape of Southern California, with a specific focus on Los Angeles. The paper is produced in collaboration with USGBC-LA’s Los Angeles Sustainability Roundtable (LASER), which is composed of the region’s top corporate sustainability executives and leaders, and supported in part by the 50L Home Coalition (convened by the World Business Council for Sustainable Development, and the World Economic Forum), and Southern California Gas Company.

The white paper was presented as part of USGBC-LA’s final Thought Leadership Series event of 2023. The event discussed the paper’s findings; how we can be more efficient with our use of water, energy and carbon; and unpacked the policy and funding landscapes around the energy

intensity of water use.

“We developed this paper because we wanted to shine a light on the fact that every drop of water we use has a carbon footprint and currently we are not calculating that into the majority of our commitments to create a net zero future,” states Ben Stapleton, USGBC-LA Executive Director. “Our paper shows that water conservation programs can be just as effective in reducing energy use as energy efficiency programs, which currently receive far less funding and deserve more, especially when you compound that with the fact that over 65,000 tons of CO2 would be avoided by just a 10% reduction in water use in Los Angeles, which is more than three times the savings of the next-largest city.”

The relentless challenges posed by climate change have directly highlighted the critical interplay between water resource management and sustainable development. And with Southern California standing as a microcosm of the global water crisis, it is critical to comprehend that the true extent of water’s impact necessitates a paradigm shift – one that integrates the dimensions of energy and carbon costs into the analysis.

The report can be downloaded for free. Highlights include:

- Overview of the region’s water sources and associated costs and energy use, as well as where the different source options and opportunities are headed for the region to be water secure yet energy-intensive conscious—from the LA Aqueduct and imported water to local groundwater and recycled water.

- Comparison of the water sources in regards to relative energy intensities and energy consumption, and the role of water distribution as the third-largest component of energy consumption within our water supply system, including Potable Water Distribution’s substantial role in our water value chain.

- Translating these energy costs into their environmental counterpart: carbon costs. The resulting staggering figure—total carbon emissions amounted to 133,829 tons of CO2 in 2018—underscores the energy impact of Los Angeles’ water supply system (water sources and distribution).

- Comparison of urban system water intensity across CA’s hydrologic regions, and the positive outlook from the Pacific Institute

Delco Sales, Watts, T&S Brass Hold Education Summit

West Hollywood, Calif. – In mid-September 2023, Delco Sales held an educational summit, dubbed “Accelerate 2023,” with two of their manufacturers’ Watts and T&S Brass.

The unique event, held in West Hollywood, Calif. at the Peterson Automotive Museum, drew over 100 specifying engineers and facility manager attendees.

“What an event. I couldn’t be more pleased with the venue and the turnout,” explained Chris Nicosia, Delco’s Chief Executive Officer. Watts and T&S both understand specifying engineer needs. It’s apparent with their investment into education, product technology and solutions. As Delco celebrates 60 years of service, we couldn’t be more excited to serve our engineering community and to represent Watts Water Technologies and T&S Brass.”

Watts (<https://www.watts.com/>) displayed a large, working backflow and a variety of smart and connected products such as roof drain monitors, Orion chemical drains, BLÜCHER stainless steel pipe and drains, and digital mixing technologies. T&S Brass (<https://www.tsbrass.com/>) showcased many faucets, parts, and accessories.

Opening remarks were made by Delco Sales’ Chris Nicosia, CEO & Principal; Taylor Grist, Director, Sales Operations and National Sales Managers; and Zack Thiesen, Director Of Sales For Lab And Plumbing, T&S Brass.

Over the course of the evening the CEU sessions that were offered included:

- Mitigating Waterborne Pathogens with Precise Flow Temperature Control, presented by Dan Checchi, Watts
- Standards, Legislation, and Testing Revisions, by Jeff Baldwin, T&S Brass
- Industrial Piping Solutions, by Scott Steindler, Watts
- Plumbing Design for Healthcare, presented by David Kachurak, T&S Brass

Industry News

which expects a 2% reduction between 2015 and 2035 driven by the expanding use of alternative local water sources such as brackish desalination, potable recycled water, and captured stormwater.

• Tracking the externalities associated with the lifecycle and long-term impacts of water extraction, processing, distribution, use, and disposal—including biodiversity loss, equity and health concerns, wastewater considerations and more.

Download the report for free at <https://usgbc.la/costofwater23>.

TEXAS



Nearly 500 HVAC Units Installed in Lennox Event

Richardson, Texas – Lennox donated nearly 500 HVAC units to homeowners through its Feel The Love program during an Installation Week event in October, completing a record-breaking year for the annual program.

For the 14th year, Lennox has partnered with its dealer network across 43 U.S. states and Canadian provinces to provide new HVAC equipment and installation, at no charge, for inspiring community leaders. Recipients included veterans, teachers, first responders, and families in need of new HVAC systems following a summer that saw record heat.

“We received a record number of nominations for this year’s program, and we are proud to see how this initiative continues to make a difference in our recipients’ daily lives year after year,” said Gary Bedard, a Lennox executive vice president and president of Lennox Residential Heating and Cooling. “At Lennox, the continued success of the Feel The Love program is a testament to our long-standing commitment to giving back to the community and the strong partnership with our dealer network.”

In addition to increased year-round comfort, recipients can expect significant energy savings from the high-efficiency

heating and cooling equipment donated through Feel The Love, a press release from Lennox said. These units reduce recipients’ energy usage by approximately 30% to 40%, having a long-term impact on homeowners’ energy bills and the environment, the company said.

“I can breathe, I’m relieved, I don’t have to worry,” said Danielle Staffeldt, a Feel The Love 2023 recipient in Hamburg, New York, who had a system installed by John

Lock Air Conditioning & Heating Service Inc. “It’s such a powerful thing to be able to give to people and know that people care about complete strangers. It just means so much. I’m so grateful.”

Since Feel The Love was founded in 2009, the program has changed the lives of more than 2,300 families by providing them with heating and cooling systems.

To nominate a member of your community for next year’s Installation Week, visit FeelTheLove.com.

NATIONAL



DOE Issues 95% AFUE Rule for New Gas Furnaces

Washington, D.C. – Newly manufactured indoor residential gas furnaces will have to be at least 95% efficient starting in late 2028 under a rule recently issued by the U.S. Department of Energy (DOE).

DOE announced its latest energy conservation standard for consumer furnaces, which will require every new residential, non-weatherized gas furnace, and every

Continued on Page 6

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Continued from Page 5

mobile home gas furnace, to have a minimum annual fuel utilization efficiency (AFUE) of 95%. The rule will take effect 60 days after its publication in the Federal Register, and manufacturers will have five years to ensure that new gas furnaces comply with the new minimum.

AFUE requirements for consumer furnaces were last raised in 2007, and the current AFUE minimum is 80%.

No Federal Register publication date has been set but, in the meantime, DOE is inviting those interested to review the rule and flag any typographical or other errors. Errors that meet the definition in the Code of Federal Regulations (specifically 10 CFR 430.5) can be reported via email to ErrorCorrectionInfo@EE.DOE.gov. The deadline for reporting errors is midnight on Monday, Nov. 13.

DOE estimates that the efficiency rule, over 30 years, will cut carbon emissions from furnaces, which contribute to global warming, by 332 million metric tons, and will save consumers nearly \$25 billion in energy costs.

“At the direction of Congress, DOE is continuing to review and finalize energy standards for household appliances, such as residential furnaces, to lower costs for working families by reducing energy use and slashing harmful pollutants in homes across the nation,” Secretary of Energy Jennifer M. Granholm

said in a press release. “Today’s measure, along with this administration’s past and planned energy efficiency actions, underscore President Biden’s commitment to save Americans money and deliver healthier communities.”

DOE is authorized by the Energy Policy and Conservation Act of 1975 to periodically review energy efficiency requirements for certain types of equipment, including furnaces. “DOE has determined that the amended standards for the subject products would result in significant conservation of energy, and are technologically feasible and economically justified,” a statement from the department said.

•••••

Danfoss Announces EnVisioneer of the Year Winner

Baltimore, Md. – Danfoss has announced the winners of its 2023 EnVisioneer of the Year competition. ThermalWorks, Polar Engineering, Canal Marine and Industrial Inc. and Weis Markets took top honors in the new, expanded format that allows for multiple winners.

ThermalWorks, based in Bloomingburg, New York, was the winner in the Original Equipment Manufacturer (OEM) category for its advanced waterless cooling system. The company built a modular, hyper-efficient, waterless chiller



VIKAS ANAND, RIGHT, VICE PRESIDENT OF SALES AT DANFOSS CLIMATE SOLUTIONS, NORTH AMERICA, PRESENTS THE AWARD TO JOHN LERCH, DIRECTOR OF ENERGY AND FACILITIES FOR WEIS MARKETS. ALSO AT THE PRESENTATION ARE, FROM LEFT, STEVE RENZ, A DANFOSS ACCOUNT MANAGER; DUSTIN HERNER, ENERGY AND SUSTAINABILITY MANAGER, WEIS MARKETS; AND MARK GERLACH, MANAGER OF THE WARMINSTER STORE.

for the data center industry using state-of-the-art Danfoss products, including its oil-free Turbocor compressors. The fully-integrated, scalable system features a unique chilled water circuit design that rejects heat in stages – free cooling, partial free cooling, high temperature mechanical and low temperature mechanical – with one integrated unit. In addition to using no water, energy use is greatly reduced, resulting in lower carbon emissions and low Power Usage Effectiveness (PUE) values compared to other high-efficiency systems.

Polar Engineering, based in Victoria, British Columbia, was the Engineering Consultant category winner. Its low-GWP, high-temperature heat pump,

built by Fraser Valley Refrigeration using Danfoss solenoid, isolation, and electronic expansion valves, including the Colibri EEV, has helped reduce natural gas usage at the Juan de Fuca Recreation Center by 90 percent. As part of an energy recovery system, the heat pump recaptures waste heat from the ammonia refrigeration system on site and uses it to offset the boiler loop load of the facility, resulting in an annual savings 284 tons of carbon emissions and \$22,000 in fuel costs.

Pennsylvania-based Weis Markets, the End User category winner, installed a CO2 refrigeration system at its new store in Warmminster, Penn. The Danfoss AK-SM 880A controller, with its communications modules, sensors, cables

and valves, provides the brains behind the system, monitoring for leaks and ensuring that temperatures remain stable at desired levels. In the first four months of operation, refrigeration energy consumption was over 100,000 kWh less than at a comparable store with traditional refrigeration, saving an estimated \$11,000. And by using CO2, with a GWP of 1, as the refrigerant, the store’s impact on air pollution is estimated to be 1500-4000 times less per pound of refrigerant compared to HFC/HFO refrigerants.

Canal Marine and Industrial won in the System Integrator category. The St. Catharines, Ontario-based company built an electric power system for PortsToronto’s Marilyn Bell I, Canada’s first 100 percent electric lithium-ion powered ferry. Annually, this transition to renewable power is saving 530 tons of carbon emissions, reducing estimated energy and operating costs by \$150,000 on a yearly basis as well as eliminating the use of approximately 196,000 liters of diesel per year. The vessel’s propulsion system utilizes Danfoss’ air-cooled VACON® NX Series drive modules, grid converters and DC/DC converters plus filters. The components work together in common DC bus topologies to provide power conversion between the batteries and motors to power the vessel’s thrusters and other electrical systems. The batteries are charged through the common DC bus distribution system via an Automatic Shore Connection System which delivers and controls DC power via a VACON® Active Front End from the grid.

Launched in 2010, the annual EnVisioneer of the Year award competition recognizes North American original equipment manufacturers, building owners, municipalities, contractors and end users that have introduced a new product, opened a new facility or invested in a building or system upgrade in the past 18 months using Danfoss products or solutions to realize significant energy and environmental savings. Entries are judged by an independent panel of distinguished experts representing various disciplines.

“We are thrilled to recognize our EnVisioneers of the Year for their innovative work,” said Rick Sporrer, president of Danfoss North America. “Each of our winners has used Danfoss solutions to build a cleaner, more sustainable future. We applaud them for their ingenuity and their commitment to lowering carbon emissions and increasing energy efficiency.”

Continued on Page 8

Find the GOLD KEY and UNLOCK a PRIZE

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

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Johnson Controls Launches New Training Programs

Milwaukee, Wisc. – Johnson Controls has launched its new 2024 Ducted Systems Academy training opportunities and industry resources. The programs feature a combination of hands-on experiences, virtual resources, on-demand courses, and in-person courses at the state-of-the-art Ducted Systems Academy in Oklahoma City, Oklahoma.

All resources are developed by experienced industry experts and designed to help residential and commercial contractors build knowledge on topics that include new residential and commercial heat pump equipment, electrification, and low-GWP refrigerants.

“Our industry is in a state of rapid transformation, with several major regulations going into effect, and contractors need up-to-date information to meet these evolving demands,” said Christyn Mueller, manager of commercial learning at Johnson Controls. “Our goal has always been to serve the industry as a resource. We’ve designed our newest training programs for the year ahead to focus on accessibility and affordability so more contractors can get the information they need to be successful and better serve their customers.”

Fast advancements in technology and evolving regulations have created a need for contractors to build on their existing knowledge, a press release from the company said. The Ducted Systems Academy provides an opportunity for contractors to gain hands-on experience with new

equipment, including the latest commercial and residential heat pumps and low-GWP refrigerant systems. The 2024 program offers 40 courses that range from commercial startup and commissioning to product essentials and customer-service training.

Johnson Controls has reduced course fees and is offering train-the-trainer options for some residential technical courses to enable a single contractor to complete the in-person training and recreate the experience at his or her own location. Additionally, tuition offset programs are available based on partnership program levels.

“We have a trade that demands correct answers the first time,” said Stephen Love, technical service manager, Johnstone Supply. “The partnership between Johnson Controls and Johnstone Supply allows us the ability to have great technical training resources. In turn, it allows our participants to learn, practice, and perfect their trade at the Johnson Controls Ducted Systems Academy.”

Available within the Ducted Systems Solutions App, One-Minute Expert is a group of tools that provides instant access to quick reference guides, approximately 100 videos and customer-facing resources on one easy-to-use platform. The program is free and designed to provide valuable insights on important topics such as low-GWP refrigerants, new equipment installation, electrification, and heat pump knowledge – all within a new, time-saving format, the company said. New resources are being added monthly.

In response to the industry’s workforce development needs, Johnson Controls has relaunched its proven Tech Foundry, an im-

mersive residential and commercial contractor training program in a hybrid format designed to fit with busy schedules. The 10-week course integrates remote and live learning with mentor support and peer interaction to review topics such as refrigeration systems and compressors, tubing and piping, ventilation systems, and heating and cooling loads. A network of local labs is utilized throughout the online session to provide weekly hands-on experiences, and the program culminates with a three-day, hands-on program at the Ducted Systems Academy.

For contractors unable to attend in-person trainings, a series of webinars will be introduced in 2024 that cover new product introductions, competitive differentiation, sales skills, and low-GWP refrigerants. Additionally, virtual recertification options are available to individuals who have previously received in-person startup and commissioning certification.

For more information about the Johnson Controls Ducted Systems Academy and to preview the 2024 course catalog, please visit DuctedSystemsAcademy.com.

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\$10M Contest Aims to Cut Emissions from N.Y. Buildings

Albany, N.Y. – The state of New York has launched the \$10 million Empire Technology Prize (ETP), a competitive opportunity for companies and innovators around the world to focus on advancing building technologies for low-carbon heating system retrofits in tall buildings.

The ETP is a New York State Energy Research and Development Authority (NYSERDA) initiative, administered by The Clean Fight and with technical support from The Rocky Mountain Institute. It includes a \$3 million sponsorship from financial advisor Wells Fargo. The program supports the state’s climate agenda, including its goal of achieving an 85% reduction in greenhouse gas emissions by 2050, according to a press release from the state.

“Investing in new clean, resilient technologies is just one way that New York is advancing progress toward our ambitious Climate Act goals, and the Empire Technology Prize is the newest tool as we move forward,” said Gov. Kathy Hochul. “This program will help us develop solutions that lower harmful emissions from buildings, creating healthier spaces for all New Yorkers to live and work, as

we come together to fight climate change.”

The ETP is an opportunity for equipment manufacturers and entrepreneurs to develop low-carbon solutions, in discussion with leading real estate partners, while exploring opportunities for heating system retrofit demonstration projects in tall commercial and multi-family buildings, the press release said. Applicants will be challenged to develop a tested and fully functional prototype of a heating or distribution system that can be installed in a manner that does not displace occupants and works with existing infrastructure in buildings seven stories and taller.

“NYSERDA is excited to partner with The Clean Fight and Wells Fargo to launch the Empire Technology Prize and usher in the next era of innovative, low-carbon retrofit solutions for one of our hardest sectors to decarbonize – tall buildings,” said Doreen M. Harris, NYSERDA president and CEO. “By casting a global net, we are seeking the world’s best and brightest to advance new technologies that minimize occupant disruptions and show how they could be applied in the buildings that make up the New York City skyline.”

Interested parties are encouraged to submit proposals that will be reviewed and judged by industry experts, in conjunction with participating real estate companies partnering with The Clean Fight. The Clean Fight will bring together finalists and leading New York real estate portfolio owners interested in giving feedback on the finalists’ proposed solutions and discussing pilot and demonstration opportunities in New York.

Applicants will be eligible to receive up to \$1 million each: \$250,000 upon acceptance as a finalist, and up to \$750,000 in total milestone payments by progressing their solution. In addition, a total of \$2 million will be available to help finalists offset the costs of installing solutions, such as pilot programs or demonstration projects in eligible tall buildings.

At the end of the one-year prize program, beginning July 2024 and ending June 2025, one winner will be awarded an additional \$1 million grand prize, based on the solution with the greatest potential for reducing cumulative carbon emissions in the New York market by 2040, and with a goal of facilitating the further development of the solution and its deployment in New York’s tall buildings.

With approximately 1.5 billion square feet of existing buildings that use steam to provide heating to New York families and workers, proposals are sought for two focus areas: 1) Centralized building heat pumps that generate steam or high-temperature hot water; and 2) Solutions that make it easier to adopt readily available centralized low-temperature heat pumps into existing building distribution systems.

Applications will be accepted through 3 p.m. on Friday, March 22, 2024.

The Clean Fight was selected as the program administrator for the ETP in September 2022 and has operated an accelerator program for the past 2.5 years. The Rocky Mountain Institute (RMI), an independent nonprofit dedicated to transforming global energy systems, is providing technical, prize design, and program support. Wells Fargo’s sponsorship aligns with the company’s ongoing work in affordability in New York and its commitment to support its business, customers, and communities transitioning to a resilient, equitable, and sustainable future, the state’s press release said.

The ETP was first announced in April 2021 as part of the \$50 million Empire Building Challenge (EBC), which included partnerships with 10 leading real estate groups with the goal of transforming existing multifamily and commercial tall buildings to substantially reduce the carbon footprint of these structures. The EBC cohort has since expanded to include partnerships with 16 real estate owners who collectively operate over 220 million square feet of New York real estate.

Buildings are one of the leading generators of greenhouse gas emissions in the state, and 70% of the state’s buildings were constructed before the energy code and will need to be upgraded in order to achieve the state’s climate goals.

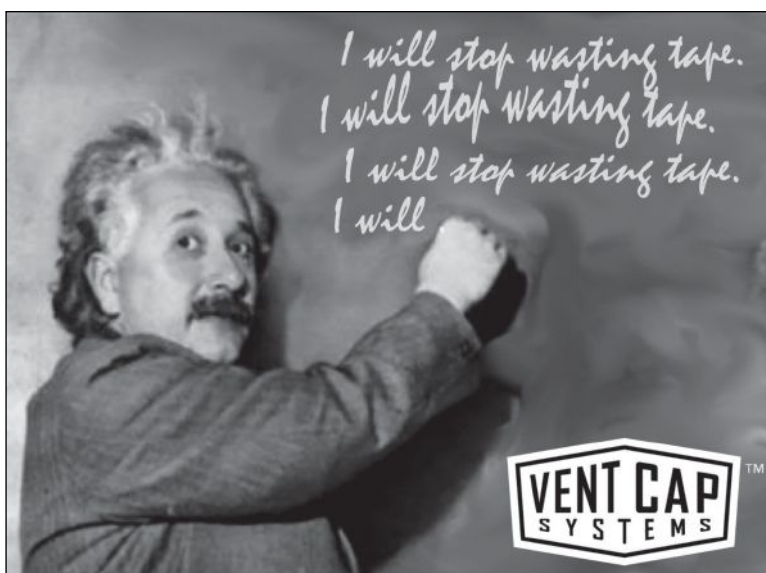
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Online HVACR Training Now Offered in Spanish

Weldon Spring, Mo. – HVACRedu.net, an online training and certification program for the HVACR industry, has introduced a Spanish-language curriculum to its virtual education platform.

Providing accessible and effective virtual HVACR education in Spanish is a significant step toward meeting the growing demand for

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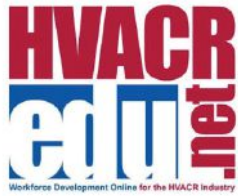
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skilled technicians, HVACRedu.net said.

“As the premier HVACR online training program globally, we are thrilled to partner with Finnovant to expand our advanced immersive training for the Spanish language in a 3D environment,” said Chris Compton, founder and CEO of HVACRedu.net. “This engaging and innovative training will make it much easier for Spanish students to learn how to diagnose and repair HVAC systems. ... The Spanish population will be better educated, more productive, and produce cost-effective results as a result of training in an immersive virtual environment.”

According to HVACRedu.net, highlights of its Spanish-language curriculum include:

- Accessibility: HVACRedu.net has made high-quality HVACR



training accessible to Spanish-speaking individuals across the world, with a focus on South America.

- Immersive learning: The curriculum offers an immersive training experience in Spanish, ensuring that students can effectively diagnose and repair HVAC systems in real-world scenarios, all within a virtual environment.
- Effective training: By mastering HVACR skills in a three-dimensional environment, students will be better prepared for fieldwork. This approach enhances productivity and cost-effectiveness, benefiting both students and the industry.
- Innovative approach: HVA-

CRedu.net’s approach is driven by the potential of technology to revolutionize the HVACR sector. Students will be encouraged to participate in the BioFi interactive ecosystem, which provides access to decentralized financial services and the management of personal information through blockchain technology.

- Biometric security: HVACRedu.net will leverage Finnovant’s biometric enrollment during the student registration process and HVACR module testing. This enhances the security and reliability of the certification process. BioFi biometrics also secure products such as the Krptic digital wallet, a decentralized financial services app, and the UniSafeBox password manager, which manages sensitive personal information.

“We are very excited to work with HVACRedu.net to revolutionize HVACR training with Spanish-

language modules in their virtual education platform,” said Brian Maw, CEO of Finnovant. “By leveraging our expertise in biometric authentication and hyper-realistic 3D technology, we believe the Spanish population will benefit greatly from this very effective training experience.”

HVACRedu.net’s approach aligns with the growing interest among the younger generation of HVACR technicians in immersive learning and emerging technologies, the company said.

For more information on HVACRedu.net’s immersive training and curriculum, visit: <https://www.hvacredu.net/>. The Spanish-language curriculum is at <https://main.hvacstore.net/catalog?pagename=1520608377d7HEj>.

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EPA Names Indoor airPLUS Leader Winners

Washington, D.C. – The U.S. Environmental Protection Agency is recognizing 10 home builders and four home raters with the 2023 Indoor airPLUS Leader Awards.

These annual awards celebrate organizations that champion safer, healthier, and more comfortable indoor environments through participation in and promotion of the Indoor airPLUS program, which offers enhanced IAQ protections to the buyers of new homes.

“Congratulations to all 14 of the 2023 Indoor airPLUS Leader Award winners,” said Joseph Goffman, principal deputy assistant administrator of the EPA’s Office of Air and Radiation. “Thanks to their hard work and dedication, every Indoor airPLUS home built and certified delivers a healthier living environment and fosters healthier communities from the inside out. Because of their achievements, more Americans can look forward to breathing easier in healthy, energy-efficient, and comfortable homes.”

The 2023 Indoor airPLUS Leader Award winners are:

Builders

- TC Legend Homes, Bellingham, Washington
- Beazer Homes, Atlanta, Georgia
- C&B Custom Homes Inc., Cottonwood, Arizona
- Charis Homes LLC, North Canton, Ohio
- Fulton Homes, Tempe,

Arizona

- Mandalay Homes, Prescott, Arizona
- Markel Homes, Boulder, Colorado
- Meritage Homes, Scottsdale, Arizona
- Providence Homes, Jacksonville, Florida
- Thrive Home Builders, Denver, Colorado
- RATERS
- EnergyLogic Inc., Berthoud, Colorado
- Integral Building + Design, New Paltz, New York
- JKP Energy Inspections, Gilbert, Arizona
- Steven Winter Associates Inc., Norwalk, Connecticut

Indoor airPLUS is a voluntary EPA partnership and labeling program that helps the builders of new homes improve the quality of indoor air and meet the growing consumer preference for homes with improved IAQ.

According to the EPA, Indoor airPLUS homes are healthier because they incorporate features such as mold and moisture control, radon resistance, pest management, improved HVAC systems, proper combustion venting, and healthier building materials. Indoor airPLUS-labeled homes can reduce the likelihood of health problems like disease transmission, heart disease, cancer, asthma, allergies, respiratory issues, headaches, and more, the EPA press release said.

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Baltimore Aircoil Acquires Coil Design LLC

Jessup, Md. – Baltimore Aircoil Co. (BAC) has acquired Coil Design LLC, a manufacturer of cooling and heating coils located in Dayton, Tennessee.

Over the last four years as Baltimore Aircoil’s joint venture partner, Coil Design has achieved impressive growth with its direct customers, and has also supported BAC’s TrilliumSeries adiabatic products, a press release from BAC said.

Dave Klee, general manager of BAC Dayton and Coil Design, will lead the integration of Coil Design into BAC during the coming months while expanding BAC’s manufacturing capacity.

“The full acquisition of Coil Design, and our previous acquisition of Eurocoil in Italy in 2021, positions BAC to accelerate the development of industry-leading

Continued on Page 12

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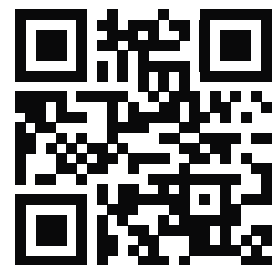
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evaporative hybrid and adiabatic technologies, furthering our vision to reinvent cooling to sustain the world,” said Don Fetzer, president of BAC, in the press release.

“Coil Design has proven they truly understand customer needs and innovate to meet those needs, which matches BAC’s culture and values,” said Klee. “We welcome Coil Design’s employees, including Coil Design’s founders, Paul Guariglia, Aron Harrington, and Rick Larson, to the BAC family and look forward to having a successful future together.”

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Hudson Tech Joins Cool Coalition

Woodcliff Lake, N.J. – Hudson Technologies, Inc. (NASDAQ: HDSN), a leading provider of innovative and sustainable refrigerant products and services to the Heating, Ventilation, Air Conditioning, and Refrigeration industry – and one of the nation’s largest refrigerant reclaimers – announced that the Company has joined the Cool Coalition, a global multi-stakeholder network that connects a wide range of key participants from government, cities, international organizations, businesses, finance, academia, and civil society groups to facilitate knowledge exchange, advocacy and joint action towards a rapid global transition to efficient and climate-friendly cooling.

The Cool Coalition was assembled by the United Nations Environment Programme (UNEP) with the belief that a unified effort of governments, cities, businesses, and civil society that share the objective of advancing efficient, climate-friendly cooling will be more effective in bringing about change than any of us acting alone. The organization has over 100 partners including 23 countries, and works around three key pillars of advocacy, action and knowledge exchange under the recognition that ensuring the transition to efficient, climate-friendly cooling for all is fundamental for climate action and sustainable development. The Cool Coalition promotes a cross-sectoral approach to meet the cooling needs of both industrialized and developing countries through urban form, better building design, energy efficiency, renewables, and thermal storage as well as phasing down HFCs.

According to the Cool Coalition, “Around 30 percent of the world’s population is exposed to

life-threatening temperatures for at least 20 days a year, and heat waves already lead to 12,000 deaths worldwide. These numbers will increase as the planet warms. Lack of cooling kills, but so does providing inefficient cooling and cooling that heightens global warming. Cool Coalition members are collaborating on science, policy, finance, and technology to meet growing demands for cooling comprehensively, all aimed at raising climate ambition in the context of the Sustainable Development Goals while complementing the global goals of the Kigali Amendment to the Montreal Protocol and the Paris Climate Agreement.” The organization’s mission also aligns to promote the HFC reduction goals set by the United States via the passage of the American Innovation and Manufacturing Act.

Brian F. Coleman, President and Chief Executive Officer of Hudson Technologies, commented, “Hudson’s commitment to supporting the circular economy for refrigerants and environmental stewardship is a fundamental element of our operations. Joining the Cool Coalition is a natural fit, complementing our goal to accelerate the global transition to efficient and climate-friendly cooling alternatives. Hudson has proven success providing environmentally sustainable solutions for all cooling needs -- from the initial sale of refrigerant through recovery, reclamation, and reuse as well as through our portfolio of servicing options which help promote peak operating performance of equipment through energy efficiency and emergency HVAC system repair, as well as refrigerant end-of-life management and carbon credit development. We look forward to working with the members of the Cool Coalition to advance efficient, effective and sustainable cooling practices and products to ease and accelerate the transition to greener cooling systems and refrigerants.”

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Dakota Supply Breaks Ground for New Facility

Plymouth, Minn. – Dakota Supply Group (DSG), a distributor of HVACR, electrical, plumbing, utility, communications, automation, and waterworks products, broke ground for a new facility in Fargo, North Dakota. The planned 126,000-square-foot facility is scheduled to open in 2025.

Guests at the groundbreak-



DAKOTA SUPPLY RECENTLY BROKE GROUND ON ITS NEW FACILITY IN FARGO, NORTH DAKOTA.

ing ceremony included Arlette Preston, Fargo’s deputy mayor; Cody Furstenu, Jeff Furstenu, and Trent Ochsner from Olaf-Anderson General Contractors; developer Levi Arneson with Dell Arneson Inc.; Stacia Sytsma from the Fargo Moorhead West Fargo Chamber of Commerce; and many chamber ambassadors. Also present were members of DSG’s executive, regional, and branch leadership teams.

“We are thrilled to break ground on our new facility in Fargo, North Dakota. DSG was founded in Fargo 125 years ago, and this expansion reinforces our dedication to providing exceptional service to our customers in this region for the next 125 years and beyond. Our strategic location and expanded services will enable us to meet the growing needs of the electrical, plumbing, HVAC, utility, and communications industries, ensuring we remain a trusted partner in their success,” said Paul Kennedy, president and CEO of DSG, in a press release.

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Republic Opens New Distribution, Training Complex

Grimes, Iowa – Republic Companies, a mechanical and electrical distributor in the Midwest with over a century of experience, recently hosted the grand opening of its new distribution center and training facility in Grimes, Iowa, near Des Moines.

The event attracted nearly 100 mechanical and electrical contractors from the surrounding area, opening the door for new business avenues both for Republic and its manufacturer partners, including Johnson Controls, Mitsubishi, Nu-Calgon, Aspen Manufacturing, Rapid Locking Systems, Leviton, and Acuity Lighting, according to a press release from Republic.

Throughout the day, contractors, technicians, and business owners from the HVAC and elec-

trical industries had the opportunity to tour the 22,500-square-foot facility and meet with the Republic team as well as with representatives of Republic’s manufacturing partners.

The Grimes location is Republic’s fifth distribution center; the others are in Cedar Rapids, Dubuque, and Davenport, Iowa, and Peoria, Illinois.

The building’s 2,500-square-foot training laboratory features 18 stations and is designed to help HVAC and electrical contractors learn the skills they need to thrive in today’s industry, the company said.

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Winsupply Buys Iconic Landmark in Dayton, Ohio

Dayton, Ohio – Winsupply Inc., one of the largest distributors in the nation, has completed the purchase of the property at 2932 S. Dixie Drive, Dayton, Ohio 45409, previously known as the Golden Nugget Pancake House.

The Golden Nugget was founded in 1962 by Steve and Bessie Thomas. “It’s an emotional goodbye. As we welcome new ownership to a location that means more than words can describe to our family, we are comforted knowing we are passing the building over to people who were part of our journey,” said a representative of the Thomas and Frangomichalos families. “We hear so many touching stories of our customers and their life experiences that made the Golden Nugget what it was. Though to some it is just a landmark, to us, it is the resting place of our blood, sweat and tears. Decades and generations of our family’s best and worst times are within those walls. Our incredible parents, Steve and Bessie Thomas, created an everlasting monument in the Dayton area. Goodbyes are never easy. We wish many years of fortune and health to the new ownership, and clientele, and will be forever grateful and indebted

to the countless people who took part in our journey on Dixie and Dorothy. Thank you will never be enough.”

Winsupply expresses gratitude for the Thomas family’s graciousness during the transition, and the countless lives they have impacted through the food they’ve served over the years.

“We believe that this purchase holds significant potential not only for our organization but also for our community,” said Bill Tolliver, Real Estate Services and In-House Counsel, Winsupply Inc. “We remain committed to seeking ways to enrich and invest in our neighborhood.”

Winsupply Inc. has identified a trusted, experienced entrepreneur who is excited and planning to once again have the iconic landmark serving customers for both breakfast and lunch. The Winsupply Family of Companies has no plans to operate the restaurant internally and instead intends to lease the building to a restaurateur who is committed to serving the community.

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Malco Names First Counterperson of the Year Winner

Annandale, Minn. – Zach Fellows of Ace Supply Co. in Eden Prairie, Minnesota, won the first-ever Malco Counterperson of the Year Contest, sponsored by Malco Products, a manufacturer of a variety of tools for the HVAC and building construction trades.

As Counterperson of the Year, Fellows exemplifies the same values that make Malco great: dedication to superior customer service and going above and beyond to ensure contractors have the Malco tools they need to get the job done, a press release from Malco said.

Fellows was awarded prizes of \$500 cash, a Malco golf shirt, and a cap. “In the realm of customer service, few shine as brightly as Zach Fellows,” said Michael Dungan of Sales Engineers Inc. in Eden Prairie, who nominated Fellows. “His dedication, passion, and commitment to excellence are clear indicators that he is destined for a bright future.” “We are proud to recognize Zach for providing excellent customer service and setting the bar high for our industry,” said Rebecca Talbot, vice president of marketing at Malco Products. “Zach’s proactive approach to serving contractors and promoting Malco’s high-quality products is well-deserving of our inaugural Counterperson of the Year title.”



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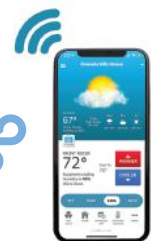
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New California Laws May Affect Both Contractors and Employers

By Ted Rieger
Northern Calif. Correspondent

Oct. 14 was the last day for Gov. Gavin Newsom to sign or veto bills passed by the California Legislature during its 2023 regular session. A total of more than 2,600 bills were introduced in 2023, the most introduced in one year in more than a decade, with 1,046 bills passed and sent to the Governor's desk for consideration. The Governor signed 890 bills into law and vetoed 156 bills. Among the new laws affecting contractors are new requirements for licensed contractors to provide an email address at the time of license renewal, and for contractors with workers' compensation insurance to provide workers' compensation classification codes at the time of license renewal. Among new laws affecting California employers are new requirements to provide more days of annual sick leave for employees and to establish workplace violence prevention programs.

Indoor Comfort News presents the following annual review of new laws enacted that could potentially affect contractors and their operations, and new labor-related laws affecting businesses with employees.

Laws Affecting Contractors and CSLB Operations

The following bills affecting California contractors and the Contractors State License Board's (CSLB) operations were signed into law.

AB 336 Cervantes (D-Riverside) – *Workers' Comp Classification Codes*. Requires all active contractor licens-

ees at the time of license renewal with workers' compensation (WC) insurance to certify on the license renewal form the WC classification codes for their employees for the top three codes for which the highest estimated payroll is reported on the WC policy. This becomes effective July 1, 2024. The WC codes will also begin being included under licensee information on the CSLB website. The CSLB will not be required to verify or investigate the accuracy of the licensee's classification codes provided and will not be held liable for any codes misreported. Contractor organizations supporting this legislation say that some unscrupulous contractors do not purchase the appropriate WC policies for the work they do, in order to avoid higher costs, which can create unfair competition for legitimate contractors when bidding for work.

AB 968 Grayson (D-Concord) – *Single-Family Residential Property Disclosures*. A seller of a single-family residential property who accepts an offer for sale of the property within 18 months from the date that title for the property was transferred to the seller, shall disclose, in addition to other home sale disclosure requirements, the following: any room additions, structural modifications, alterations or repairs made to the property performed by a contractor since the seller held title; the name of each contractor who performed work under contract; and copies of any building permits for work obtained by the seller. Applies to sales of single-family residential properties on or after July 1, 2024. This legislation addresses the practice of "house

flipping," in instances where a person buys a home and performs improvement work for a quick turnaround sale for profit, in order to increase compliance with building codes and permit requirements. CSLB supported.

AB 1204 Holden (D-Pasadena) – *Contractors, Restrictions on Sub-contracting to Other Sub-contractors in Same License Class*. Prohibits a specialty contractor from entering into a contract for work on the same single project or undertaking with more than one subcontractor in the same license classification as the specialty contractor offering the contract, unless either of the following apply: a) The subcontractor employs persons who are classified as employees to perform the work in that license classification on the project, or b) The specialty contractor is a signatory to a bona fide collective bargaining agreement that covers the type of work being performed on the project and addresses the issue of subcontracting. According to the bill's sponsor, the State Building and Construction Trades Council of California, the issue of employees being misclassified as independent contractors is an ongoing problem in the construction industry, with independent contractors used because they can underbid the work at the expense of law-abiding contractors. The intent is to reduce the problem of misclassification of employees and improve compliance with workers' compensation requirements. Supported by the Air Conditioning Sheet Metal Association of California, and the Legislative Conference of the Plumbing, Heating and Piping Industry.

SB 544 Laird (D-Santa Cruz) – *Bagley-Keene Open Meeting Act: Teleconference Board Meetings*. Enacts additional and alternative provisions under which state bodies (government boards and commissions including the CSLB) may hold and conduct meetings by teleconferencing, with proper public access, noticing and posting of agendas. The use of teleconference meetings in recent years and during COVID has shown benefits in increased participation, reduced state operating costs, and could potentially help attract and retain appointees to boards and commissions. CSLB supported.



THE CALIFORNIA STATE CAPITOL BUILDING IN SACRAMENTO, CALIF.

SB 601 McGuire (D-Santa Rosa) – *HIC Contract Violations*. Specifies that a licensee or a person subject to licensure who violates certain requirements under a home improvement contract (HIC) in a location damaged by a natural disaster will have the maximum fine imposed for such violations as required by court action under this law. This law also increases the statute of limitations authorizing the CSLB to prosecute licensees for certain misdemeanor violations involving the use of a license to a period of 3 years after the discovery of the commission of the offense. CSLB supported.

SB 630 Dodd (D-Napa) – *Collection of Licensee and Applicant Emails*. Gives the CSLB authority to require a license applicant, registrant, or licensee with an email address to provide the email address at the time of license application or renewal for the purpose of receiving communications from the CSLB. The email addresses would be protected from public disclosure. The CSLB believes this is a more efficient and cost-effective method of communicating with applicants and licensees. CSLB sponsored and supported.

New Requirements for California Employers

Many California employers face new requirements to provide more paid sick leave days for employees, provide leave for reproductive loss events, and to establish workplace violence prevention plans, as a result of the following bills signed into law.

SB 553 Cortese (D-San Jose) – *Occupational Safety: Workplace Violence, Restraining Orders and Workplace Violence Prevention Plans*. Requires specified employers to establish, implement, and

maintain at all times in all work areas, an effective workplace violence prevention plan containing specified information and provide training to employees on the plan, in addition to their workplace injury and illness prevention plan (IIPP) currently required under Cal/OSHA regulations. This requirement would not apply to places of employment of less than 10 people working at any given time that are not accessible to the public. The requirements of this law become operative on and after July 1, 2024. This legislation was supported by labor and union organizations, but was opposed by a number of contractor, employer and business organizations.

SB 616 Gonzalez (D-Long Beach) – *Paid Sick Leave*. Increases the minimum number of paid sick leave days allowed a year for California workers from three days to five days, and also increases the number of sick leave days allowed for accrual or carryover to the following year by the same number. This legislation was supported by many labor and union organizations, but was opposed by many employer and business organizations.

SB 848 Rubio (D-Baldwin Park) – *Leave for Reproductive Loss*. Requires employers, defined as having five or more employees, to provide eligible employees upon request up to five days of leave following a reproductive loss event, defined as a miscarriage, a stillbirth, an unsuccessful assisted reproduction, a failed adoption or a failed surrogacy. The leave must be taken within three months of the reproductive loss.

For specific legislative language and more information, see: <https://leginfo.legislature.ca.gov>.

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NEW!

CARMEL™ TG2030TN

TOP VENT GAS WALL HEATER

The **Next Generation** of high performance vented wall furnaces is here! Natural gas powers the electrical components of the **CARMEL™ TG2030TN Top Vent Gas Wall Heater**. **Self-powered** - once the digital thermostat calls for heat, the electronic hot surface ignitor starts the furnace, then thermoelectric power takes over and converts the heat to electrical energy for continued operation.



FEATURES

- 82% AFUE reduces carbon footprint while providing superior comfort.
- Hydrogen-blend ready and designed to produce ultra-low NOx emissions.
- Dynamic Response - for energy savings and a constant and comfortable temperature - just enough heat for your desired environment.
- No standing pilot - eliminates seasonal relighting, saves energy and eliminates methane emissions.
- No AC power is required, no new wiring is needed during installation, and it continues to heat during a power outage.
- Quiet circulation fans blow heat off the unique twisted tube heat exchangers for improved comfort and air circulation.
- Easy to install - fits into the same opening and uses the same venting as the traditional Monterey wall furnace

For all the details go to www.wfc-fc.com/carmel

GS Series Premier Wall-Mounted Units

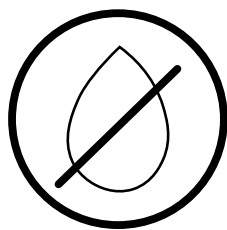
The MSY/Z-GS Wall-mounted Indoor Units provide a variety of application options as a single-zone heat pump, multi-zone heat pump, or H2i® Hyper-Heating INVERTER® heat pump. Its counterpart, the MSY-GS, is a single-zone air conditioner for climates where heating is unnecessary. Also, a newly designed text-based remote control is standard with the GS Series.

Contact your distributor sales representative or Mitsubishi Electric Area Sales Manager now for additional information and pricing.



DUAL BARRIER COATING

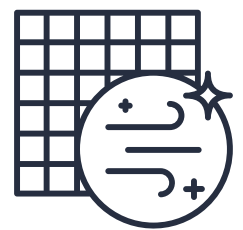
Our patented technology prevents build up of dust, fibers, oils and smoke on system components.



Improved dry mode logic to continuously remove moisture without over cooling the space



The first Premier wall-mounted Hyper-Heat M-Series with capacities including 9-24 kBTU/H



Optional PM2.5 filter brings better indoor air quality by removing particulate matter (PM) with a diameter of less than 2.5 micrometers

Quick Specs (Wall-Mount Units)

- Capacities: 6,000 to 36,000 BTU/H
- Sound: As low as 19 dB(A)
- SEER2: Up to 28.4
- HSPF2: Up to 10.9
- COP: Up to 4.44
- ENERGY STAR®: Most systems

Scan this QR code for additional technical data from LinkDrive on the GS Series



The GS Series have a wide variety of applications



Extensive Range Capacity

The MSY/Z-GS wall-mounted indoor units offer our highest design flexibility. Combinations include single-zone (cooling only or heat pump) and multi-zone (heat pump or hyper-heating heat pump) systems, a large selection of size ranges from 6,000 to 36,000 BTU/H.

Powerful Operation

Depending on the capacity, the unit will automatically adjust the fan speed and set temperature for 15 minutes. Rapid cooling and heating will make the room comfortable quickly.

GS24, GS30/36 Models Only

Heating Products and Tools & Test Instruments

Carrier Gas Furnaces



Carrier has begun shipping its recently redesigned gas furnaces with Near-Field Communication (NFC), a technology that supports the installation and servicing of the furnace. Carrier is part of Carrier Global Corp., an HVAC and fire and security equipment company.

With the tap of a phone, dealers can modify installation settings and pull diagnostic information, all without power or cell phone service. NFC functionality has been incorporated into the existing Carrier Service Tech App for dealers and technicians. It offers features such as:

- Built-in verifications for quality installations and fewer callbacks.
- Detailed diagnostic information and troubleshooting tips.
- A “save favorites” feature for repeat floorplans and multi-unit installations.
- Report exporting functionality.

“Best-in-class dealers and technicians deserve best-in-class systems and servicing technology,” said Heidi Gehring, director of residential product management at Carrier. “Our newly redesigned and relaunched gas furnaces fitted with Near-Field Communication capabilities will help ensure our customers receive quicker installation and servicing.”

NFC is not the only enhancement Carrier made to its gas furnace portfolio. Following the 2023 regulatory changes, Carrier relaunched its entry-tier line with competitive airflows and 18 speeds, maximizing cooling ratings. The mid-tier lineup, in addition to the entry-tier enhancements, now also features a seven-segment display for easier fault code readings.

Additionally, Carrier’s deluxe gas furnace includes updated blower doors and Bluetooth added for improved servicing.

More information:
www.carrier.com.



Daikin Charge Integrity

As government, manufacturers and contractors address the environmental impact of hydrofluorocarbons (HFCs), there’s another issue, often lurking unnoticed,

potentially raising both electric bills and greenhouse gas emissions: slow refrigerant leaks that may arise in HVAC units.

Often ignored until it becomes an expensive problem, non-catastrophic refrigerant leaks add up over a system’s lifetime. Slow leaks can diminish system performance, increasing homeowner costs to achieve satisfactory indoor comfort. Plus, refrigerant leaks from an R-410A system have a high global warming potential (GWP), according to the Environmental Protection Agency.

But Daikin Comfort Technologies North America, Inc. (Daikin) aims to help mitigate those leaks by launching Charge Integrity, a new feature designed for its cloud-based services that alerts HVAC contractors if refrigerant charge levels drop below optimal thresholds.

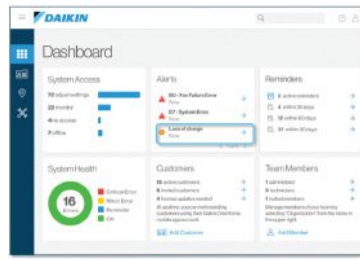
“Loss of refrigerant into the atmosphere from HVAC systems impacts performance, efficiency and operational cost, while contributing to greenhouse gas emissions,” explains Jim Cahill, IoT Solutions Business Leader for Daikin. “Traditionally, these loss-of-charge events often go unidentified until a homeowner complains about ineffective cooling or spiking electric bills.”

By identifying slow refrigerant leaks, Charge Integrity enables Daikin Comfort Pro contractors to potentially address issues before they become severe. The powerful feature, now part of Daikin One cloud services, uses smart sensing to identify a non-catastrophic loss of refrigerant charge on many Daikin systems connected to the Daikin cloud, explains Cahill.

Daikin Comfort Pros will now receive alerts, via email and/or push notification, if the refrigerant level in select Daikin unitary inverter systems connected to Daikin One cloud services drops below the Charge Integrity alerting threshold. Alerts also provide possible causes, along with corrective actions contractors can take.

“The American Innovation and Manufacturing (AIM) Act calls on manufacturers to reduce the environmental impact of HFCs,” says Lee Smith, Vice President – Strategic Marketing & Environmental Technology Solutions for Daikin. “We are leveraging Daikin One cloud services to help contractors address what is an under-the-radar, but solvable issue.”

Daikin Charge Integrity is the latest example of the brand’s resolve to pioneer sustainability initiatives by rethinking typical



heating and cooling systems and service – resulting in solutions such as Daikin ATMOSPHERA, the first low-GWP R-32 single-zone ductless system in North America, and Daikin FIT, a groundbreaking solution that enables a traditional ducted system to pair with a compact, high-efficiency, side discharge inverter heat pump and connected to the Daikin One ecosystem.

More information:
www.daikinone.com.



Laars FT Series 301, 399



Laars Heating Systems, a leading U.S. designer and manufacturer of boilers, water heaters, and pool heaters used in residential, commercial, and industrial applications, announces the release of the new FT Series light commercial boilers available in 301 and 399 MBH sizes.

These robust boilers have a stainless steel firetube heat exchanger, operate with up to 10:1 turndown, can be used with either natural gas or propane fuel, and run at an ultra-high 95%+ thermal efficiency.

“These versatile additions to the Laars® FT Series product line meet or exceed the high standards our customers have for heating equipment,” said Chuck O’Donnell, director of marketing for Laars® Heating Systems. “The FT Series 301 and 399 MBH units provide optimal performance and ultra-high efficiency while also responding to a wide range of operational demands. We’re always looking for ways to maximize value for our customers and end users by providing top-performing heating equipment that’s built to last.”

Each FT Series unit is equipped with onboard high- and low-temperature zone control, DHW

Smart Priority™ functionality that allows simultaneous space and domestic water heating, BMS compatibility, and can cascade up to four units. Additionally, a sensor actively monitors incoming air for cross-contamination from exhaust flue gases. This unique feature issues an alert when cross-contamination is present, indicating that the vent system should be evaluated to help keep the boiler running trouble-free.

The FT Series 301 and 399 MBH units can be wall-hung or floor-mounted with optional stand package. Top and bottom gas and water connections and venting up to 150 equivalent feet offer increased installation flexibility.

More information:
www.laars.com.



Modine Amp Dawg

Modine (NYSE: MOD), a leader in innovative heating solutions in the HVAC industry, today announced the introduction of a new electric heating line targeted at the residential market. The Amp Dawg™ broadens Modine’s portfolio of electric heating products featuring quiet performance and exceptional heat throw that rivals gas-fired units in a slim, low-profile design.

The Amp Dawg™ electric residential unit heater is designed to be a quiet, efficient solution for heating garages, workshops, and other similar spaces. The durable unit boasts commercial-grade heating elements and a space-saving design. The residentially certified 5.7kW unit allows application flexibility in spaces like basements, garages or storage areas, while the 9.0kW unit provides two stages of controlled heat perfect for larger workshops and garages.

“For years, the Hot Dawg® has been a reliable and trusted gas-fired solution for heating garages and workspaces in homes across the country,” said Jon Schlemmer, Vice President and General Manager of Modine’s Heating business. “Now, the Amp Dawg™ brings that same quality and performance to homeowners seeking an electric option. From the comfortably quiet operation to the space-saving design, the Amp Dawg™ showcases our continued dedication to meeting customer needs and living our



purpose of engineering a cleaner and healthier world.”

Notable features of the Amp Dawg™ electric unit heater include:

- Heating output similar or equal to an HD30-45 gas-fired unit
- 13-inch ceiling-to-base installed height (compared to 2 feet with competing units)
- Easy installation by using a unique ceiling mounting system and the lightweight design
- Durable, commercial-grade sheathed steel heating elements
- 24-volt circuit included for compatibility with popular low voltage smart thermostats
- Quiet operation: Sound levels as low as 46 dBA high stage, 41 dBA low stage at 15’.

More information:
www.modinehvac.com/.



Shurtape Duck Pro BR Code



Shurtape Technologies, LLC, an industry-leading manufacturer and marketer of adhesive tape and consumer home and office products, announces the release of Duck Pro® by Shurtape® BR Code™ Scannable Solutions, powered by the BitRip® app. Developed in partnership with Nastro Technologies, a tech startup specializing in asset tracking technology, the two companies began developing the product line together in August 2022 after merging their respective expertise in industrial adhesive applications and asset tracking technology. The new line features unique tapes and labels preprinted with dynamic scannable codes that can be used to organize and track critical jobsite information, connecting physical objects to critical digital information.

In conjunction with the free, easy-to-use BitRip mobile app, BR Code is a tool designed to help streamline workflow and communication in construction, remodeling, installation and repairs. Construction pros and project managers can use the scannable tapes or labels to pinpoint precise physical locations of building components and supplies, create installation and repair notes or

Continued on Page 21



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

NOVEMBER/DECEMBER 2023

NATE AC/HP Refrigeration & Air Distribution Training (Four-Night Class)

Instructor: Mitch Bailey
Mon., Nov. 20 – Part 1
Tues., Nov. 21 – Part 2
Wed., Nov. 29 – Part 3
Thurs., Nov. 30 – Part 4

NATE EXAM:
Saturday, Dec. 2 – 7:30 AM
In-Person/Onsite

All classes are currently held 6:00 pm to 9:00 pm.

Webinars are FREE of charge and online registration is required.

You can register online by visiting: pge.com/hvactraining. Attendees must register for each night separately and registration is on a first-come, first-served basis. "PG&E" refers to Pacific Gas and Electric Company, a subsidiary of PG&E Corporation. ©2022 Pacific Gas and Electric Company. All rights reserved. These offerings are funded by California utility customers and administered by PG&E under the auspices of the California Public Utilities Commission.





Get rewarded and recognized for championing best practices!

The Quality Residential HVAC Services (Quality HVAC) program helps contractors become champions of industry best practices and customer needs. By enrolling, contractors will earn incentives, get ahead of market changes through no-cost trainings, and stay ahead with comprehensive support and resources.

Benefits

- Quality services keep contractors competitive and up to speed in a changing market.
- No-cost sales trainings can help companies communicate the value of their services to customers.
- Receive up to an additional 30% to 70% of the TECH Clean California incentive amount for providing quality bids on projects.

Enrollment is easy!

Visit QualityHVAC.frontierenergy.com to get started.

Here's what you'll need:

- Company contact information
- CSLB license number and expiration date
- A copy of the company liability insurance
- List of industry and trade certifications
- Two customer references

Services	Tier I	Tier II	Quality Kicker
Quality Bid	\$350	\$700	TBD
Quality Installation	\$500	\$1000	TBD
Quality Maintenance	\$350	\$700	TBD
Quality Maintenance Call	\$150	\$300	TBD

The Quality Residential HVAC Services Program is funded by California utility customers under the auspices of the California Public Utilities Commission and implemented by Frontier Energy under a contract awarded by San Diego Gas & Electric Company (SDG&E®). Customers who choose to participate in this program are not obligated to purchase any additional services offered by the Implementer. The trademarks used herein are the property of their respective owners.

Editorial Focus

Continued from Page 18

voice memos, upload files relating to specific components or link the code to already existing job data.

Unlike other scannable codes, such as QR codes, the preprinted codes on BR Code scannable tapes and labels offer a straightforward approach to labeling and tracking. There is no need to spend time generating and printing custom codes for scanning. With BR Code, users can quickly grab a label or roll of preprinted tape, stick a piece to a physical object, then scan and connect the code to an unlimited amount of digital information. Photos, text files, maintenance documentation, PDFs, hyperlinks, video links, voice memos, instructions, GPS location data and more can all be linked to a single, scannable code. All linked content is then sharable and accessible via the free BitRip app.

More information:
www.Shurtape.com.

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Spectroline GLO-SEAL



Spectronics is proud to announce the launch of two new kits for the GLO Seal™ product family. These new UV dye and AC sealant kits will provide customers with additional choices when it comes to selecting complete leak detection solutions.

GLO-SEAL™ is fully compatible with all refrigerant types including new A2Ls, and is engineered with a non-polymer, oil-soluble formula that's safe for system components and recovery equipment. It meets ASHRAE 97 standards for chemical stability without any damage to the system.

With one quick installation, GLO Seal™ pinpoints the exact location of all leak and micro-leak areas and AC&R leaks from the inside will be sealed. GLO Seal™ is perfect for preventing further issues and ensuring all leaks will be found, making it a strong 2-in-1, find and fix solution for AC&R systems and preventative maintenance solutions.

The GLO Seal™ Stick Complete Fluorescent Leak

Detection Kit (SPE-MVLGSDS) and The GLO Seal™ EZ-Ject™ Complete Fluorescent Leak Detection Kit (SPE-MVLEZDS) are composed of everything needed to find and fix a leak. They come with (4) GLO Seal cartridges, injector and hose assembly, UV LED leak detection lamp, Glo-Away Plus dye cleaner, and R-410a adapter. Each cartridge treats up to 3.5 tons (12.3kW) of cooling, for a kit total of 14 tons (49.2kW) of cooling.

More information:
www.spectroline.com.

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U.S. Boiler Company Ambient Electric Boiler

U.S. Boiler Company introduces the Ambient Electric Boiler for residential customers looking



to modernize and electrify their hydronic heating systems.

The single-phase Ambient Electric Boiler is an ultra-compact, wall-hung boiler designed and supported by industry-leading hydronic experts. The boiler is available in three capacities: 16, 20 and 24 kW, or 54,600, 68,200, and 82,000 BTU/h, respectively. Supply water temperatures between 90°F and 180°F can be provided, using field-proven electric elements.

Built for long-term consumer reliability, the boiler's ASME Section IV stamped heat exchanger is assembled and welded in the US. The cabinet is constructed of robust coated galvanized steel, and the system automatically cycles element usage.

The boiler features a proven control that provides dual setpoint operation, load management control, operation monitoring, with fault and dry-fire protection.

The new electric boiler can be installed quickly and inexpensively because venting, fuel supply and provision of combustion air are not required. The unit weighs 54 pounds, and connections to the heat exchanger are on top, meaning that the system does not need to be drained in order to service the element.

To further simplify installation, an integral anti-short cycle-timer and two 60 AMP circuit breakers are included. A flow switch, ASME 30 PSI pressure relief valve, pump switching relay and secondary manual reset hi-limit are also included. The electric boiler is compatible with copper and aluminum wire (aluminum prohibited in Canada). The new boiler is CSA C22.2 listed/UL 834 listed and features enhanced, individual element relays.

The Ambient Electric Boiler comes with a two-year parts and labor warranty and a 20-year heat exchanger warranty. Regional electrification incentives may apply.

More information:
www.usboiler.net.



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UP TO 20 SEER Inverter Heat Pump

Inverter Compressor

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

High Efficiency

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

Quiet Operation

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

Comfort In Any Environment

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

Installation Flexibility

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

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Industry Events

AHR Expo Names Innovation Award Winners

The AHR Expo (International Air-Conditioning, Heating, Refrigerating Exposition) announced the winners of the 2024 AHR Expo Innovation Awards. Winners are chosen annually in ten industry categories, representing the most innovative products and technologies in the market.

“There’s no shortage of innovation in HVACR right now,” said Show Manager, Mark Stevens. “To be recognized as an award winner is a true honor and an indication that we as an industry are responding to real problems with creative solutions. The Innovation Awards aim to highlight this innovation trajectory and celebrate those that are pushing the bar.”

The Innovation Awards draw hundreds of manufacturers to enter breakthrough designs for new and never before seen solutions or improvements upon existing products and technologies. All entries are reviewed and selected by a panel of third-party judges made up of distinguished ASHRAE members. Evaluations are based on overall innovative design, creativity of the product or service offered, product or technology real-world application, as well as overall potential market impact.

“It’s encouraging to see so many entries and the growth the awards program brings year to year,” continued Stevens. “Manufacturers across the industry are responding with solutions for cost savings, energy savings, production efficiency and are filling performance gaps in product and technology. Congratulations to our 2024 winners, we look forward to supporting your journey of innovation in Chicago and beyond!”

In addition to celebrating innovation in HVACR, the Innovation Awards provide a means to strengthen the industry by allowing for the AHR Expo Workforce Development program, which aims to grow the industry through programming geared to inspire future members of the HVACR community. Funds collected from the entry fees are donated to programming at the student level, including show field trips, curated introductions to professionals and manufacturers, laboratory equipment and monetary donation to student programs in the hosting city. Learn more about workforce development on ahrexpo.com.

Winners for the 2024 AHR Expo Innovations Awards include:

BUILDING AUTOMATION

Winner: 75F

Innovation: 75F HyperStat Split
The 75F HyperStat Split enables

contractors to upgrade RTUs with advanced rooftop control with unprecedented ease. Using only two existing wires from the RTU to the thermostat, HyperStat Split provides dual enthalpy economizer, demand-control ventilation, and VFD control. What’s more, an onboard PIR occupancy sensor enhances energy savings with auto away. Devices like the HyperStat Split encourage the building controls industry to make two design considerations the norm. First, HyperStat Split’s ability to work with the existing two wires provided for a standard temperature sensor while still delivering advanced control sequences demonstrates that hardware can work with existing infrastructure without excessive complexity. Second, the device’s eight onboard sensors and native cloud connectivity for real-time analytics prove that rising demand for excellent indoor air quality management can be met in a straightforward, modern, and user-centric manner.

Finalists: Carrier, i-Vu Express Connected Building Automation Appliance; Copeland, Copeland CC200 case controller

COOLING

Winner: Danfoss

Innovation: DSG Compressor

The DSG compressor has been specifically designed for low pressure refrigerants such as R1234ze with low global warming potential. Applications include chiller systems, with a wide range of compressor capacities available to support unit design requirements. The DSG has been specifically designed for low pressure low global warming potential refrigerants such as R1234ze. These refrigerants would usually require a much larger compressor size to have the same capacity as high pressure (R410A, etc.) refrigerants. As chiller manufacturers will need to transition to lower global warming potential refrigerants <700 GWP they will need to move to medium and low-density refrigerants. The DSG with its same size will enable a smooth transition without a significant increase in physical compressor size. It is qualified for R1234ze which is an excellent replacement for the market that has been dominated by R134a for many years, but will be phased down due to its impact on the environment.

The DSG can also be used with other refrigerants with similar properties, so it offers a great deal of flexibility for manufacturers to choose without requiring a new

compressor design. This will also support future refrigerant changes and regulations without requiring significant modifications.

Finalists: Daikin Applied Americas Inc., WMT; Innovair, DuoTec

HEATING

Winner: Ephoca

Innovation: Nextac –

The next generation of PTAC Nextac transforms the PTAC into a tour-de-force of total comfort control. R32, twin rotary inverter compressor, heat pump performance to -10°F, integrated ERV, MERV13, zero air leakage, self-cleaning coils, 27 dB(A) operations, STC of 40, sleek, all-metal, paintable cabinet. No drain is required for cooling or heating. For many years, PTACs have seen minimal advancement. Often considered a “cheap, low-end” product, installers have favored them for their affordability and ease of installation. However, those living with PTACs in their homes have endured poor performance with no better options to fit existing sleeves. Nextac aims to disrupt this status quo with this new high-efficiency and quality PTAC by compelling manufacturers to enhance their PTAC lineup, making them more efficient, aesthetically pleasing and adding more insulation for quieter operation and a better seal.

Finalists: Caleffi Hydronic Solutions, Caleffi XF; Intellihot Inc., Electron iE1

INDOOR AIR QUALITY

Winner: WellStat Innovation:

WellStat

WellStat® is an Indoor Air Quality + Energy Management Software platform used by property and facility management teams to responsibly assure healthy air quality conditions, lower operating costs, and increase operating revenue. It is our goal to optimize an asset’s performance while promoting a safer and healthier work environment. WellStat is FCC tested and UL listed. It provides data beneficial for achieving various sustainability certifications (LEED, WELL, RESET certified, US Energy Policy Acts).

WellStat is completely integrated, customizable and provides a single, unified enterprise hardware, software, and mobile platform experience. With WellStat, customers can optimize their asset’s performance while promoting a safer and healthier



THE DANFOSS DSG COMPRESSOR, WINNER OF THE AHR EXPO INNOVATION AWARD IN THE COOLING CATEGORY.

work environment. Additionally, WellStat uses the highest caliber sensors available and maintains systemic accuracy through persistent, over-the-air calibration that never requires maintenance. Monitoring systems are tested, calibrated and always accurate, all the time including 14+ IAQ sensors monitoring: temperature, relative humidity, particulate matter, carbon dioxide, ozone, total volatile organic compounds, formaldehyde, reset TVOC, dew point, wet bulb, light level, carbon monoxide, occupancy, pressure, sound DB, duct flow.

Finalists: ECM PCB Stator Technology, Ultra-light, Premium Efficiency 6hp PCB Stator Air Blower Motor; Sensirion, Inc., SEN6x

PLUMBING

Winner: Rheem Water Heating
Innovation: Triton® Light Duty (50- and 75-gallon)

A smart, robust solution for small businesses, Triton Light Duty is the most intelligent high efficiency commercial gas water heater on the market. Boasting built-in smart monitoring and precise leak detection, the unit prevents downtime, manages water heater issues, and keeps businesses running smoothly. Perfect for retrofit or new construction. With changing regulations, Rheem designs with sustainability in mind. Triton Light Duty (LD) is designed to promote energy efficiency and environmental responsibility and holds the potential to drive transformative changes in the way water heaters are concep-

tualized and manufactured.

With a capacity ranging from 50 to 75 gallons, Triton Light Duty’s patented combustion system and helical coil heat exchanger provide maximum thermal efficiency and durability. The latest Triton offers up to 97% thermal efficiency and eliminates downtime with the ability to detect and prevent water heater problems before they occur thanks to LeakGuard™ – an all-inclusive leak detection and prevention system capable of limiting water leakage outside the tank. The helical coil heat exchanger offers maximum thermal efficiency and energy savings. With porcelain/glass-coated steel, corrosion is minimized, extending the life of the tank while the unique minimum weld joint construction increases durability. Most importantly, the unit features a built-in condensate neutralizer, which eliminates the need for a separate device to raise the pH of the condensate for safe draining.

Triton LD is part of a decarbonization portfolio to transition away from less efficient water heaters, thereby reducing carbon emissions and environmental impacts. This signals a strong direction for the future, where new product development is likely to be influenced by an increasing emphasis on sustainability. Energy efficiency will take center stage as manufacturers strive to align with evolving regulations and meet strict carbon emissions reduction targets set by state and local governments.

Finalists: Bonomi North America, Inc., LOCPOWER Energy Harvesting Control Valves; ECM

Industry Events

PCB Stator Technology, Ultra-light, Premium Efficiency 3HP PCB Stator Pump Solutions

REFRIGERATION

Winner: AirGreen

Innovation: AirGreen-BMIL Brine-based DX Cold Room Heat Pump

The innovative AirGreen-BMIL brine-based DX refrigerant system essentially creates a low dewpoint “heat pump” for cold room applications – providing <26F dewpoint supply air in a single process step. Because of its simplicity and efficiency, this packaged unit design provides up to 50% energy savings while also significantly reducing capital costs. Solid desiccant products can only achieve supply air at 55F with a 40-45F dew point, and to lower the dry bulb temperature to as low as 33F it requires three or more pieces of equipment at considerable capital and energy penalty. The unique low temperature brine solution achieves this performance because it simultaneously cools and dehumidifies. For customers, it also eliminates the downtime related to multiple defrost cycles, or worse, downtime for cleaning if condensation forms. Further, the AirGreen product only needs low regeneration temperatures (~110F), compared to solid desiccants requiring 180F or more. This low temperature hybrid brine system is uniquely suited for cold storage applications and addresses a \$5.1B market.

Customers will benefit both from precise supply air temperatures and the demonstrated energy savings of this design approach.

Finalists: Honeywell, Honeywell Solstice N71 (R-471A); Mitsubishi Electric Trane HVAC US, Mitsubishi Electric Variable-Speed Scroll Compressors

SOFTWARE

Winner: Interplay Learning

Innovation: SAM (Skill Advisor and Mentor)

SAM (Skill Advisor and Mentor) is the first AI-powered advisor for the skilled trades. SAM gives teams instant and personalized guidance so they can gain skills faster and more efficiently.

Technicians can ask SAM questions and get immediate assistance while they're learning, helping enhance comprehension and sharpen critical thinking. SAM is the first of its kind. Interplay's unique approach to on-demand mentorship and training provides considerable value, such as:

- Fast Tracks Learning: SAM meets technicians where they are, providing assistance to suit

their specific needs. It's like an approachable study buddy who understands them perfectly and helps them learn faster.

- Sharpens Critical Thinking: SAM doesn't shortchange learning with easy answers. It guides them towards “aha” moments and helps develop problem-solving skills.

- Saves Time and Boosts Productivity: When newer techs ask SAM for help first, it can free senior techs and managers from answering basic questions and give them more time to grow the business.

- Taps Into Expert Knowledge: SAM uses data from SkillMill, which has been carefully crafted by seasoned subject matter experts, to ensure techs learn skills right the first time.

Finalists: Conduit Tech, Conduit Tech Software; IES Ltd., IESVE Software

SUSTAINABLE SOLUTIONS

Winner: Midea Residential Air Conditioning

Innovation: Midea PWHP

Midea's Packaged Window Heat Pump is a window-mounted cold climate air source heat pump, designed for DIY installation and high-performing, energy-efficient heating and cooling. Developed to support multi-family buildings' transition towards electrification, the Midea PWHP provides a cost-effective solution for buildings looking to quickly meet future sustainability requirements.

Midea's PWHP stands out in innovation and uniqueness as a window-mounted unit. Unit performance is 9,000 BTU/hr heating and cooling, with the category's highest CEER of 16.0, as of the application date, a 2.35 COP @ 17F, up to SEER2 21.8 and HSPF2 11.6. This is done without the use of auxiliary heat.

While high-efficiency heat-pumps typically require professional installation including new electrical circuits, the Midea PWHP operates on a 120V/15A circuit mounting to hung-type windows, allowing for DIY installation. The innovative saddle design allows window view and functionality while simultaneously reducing indoor noise levels. A distinguishing feature of the Midea PWHP is a telescoping center section that adjusts to various wall depths and a hinged outdoor section allowing for rotation during installation. This along with ~50% footprint reduction from the industry first integrated

inverter compressor offers the ability to quickly install into windows while maintaining optimal performance.

Finalists: Blue Frontier, Blue Frontier, Liquid Desiccant DOAS; Mitsubishi Electric Trane HVAC US, Mitsubishi Electric, Hybrid VRF®

TOOLS & INSTRUMENTS

Winner: INFICON

Innovation: FLUE-Mate

Combustion Analyzer

FLUE-Mate Combustion Analyzer is designed to improve combustion efficiency and safety. This tool is equipped with an integrated manometer, thermometer, CO test, cracked heat exchanger test and provides draft analysis. FLUE-Mate can even generate a QR code that can be scanned with your smart device for a quick analysis report. FLUE-Mate provides a host of useful features for user convenience and safety, like the easily visible water trap and filter, easy operation, cracked heat exchanger

test, automatic pump shut-off, and ambient CO monitoring. The free FLUE-Mate mobile app is a major advantage that allows the user to do even more with their combustion analyzer.

FLUE-Mate generates a QR code that can be scanned using the app for a quick analysis report without the need for a Bluetooth® connection. All important readings and information are on your smart device with just a quick scan of the code. The app also allows the user to save and share reports.

Unlike many other combustion analyzers, FLUE-Mate displays efficiency, O2, CO2, CO and flue gas temperature readings all on one screen. This makes FLUE-Mate more user-friendly and helps techs get the job done quicker.

FLUE-Mate's water trap and filter assembly is designed to always be upright and easy to see, so you always know when to change the

filter or empty the trap and keep your FLUE-Mate protected.

The automatic pump shut-off feature stops flow when a high level of CO is detected, saving the CO sensor from being poisoned and saving customers an expensive repair bill.

Finalists: MSA Safety, Legend Series HFC; Snap Drill AS, Snapdrill

VENTILATION

Winner: HVAC Manufacturing and Technology Inc.

Innovation: SAV® – Smart Air Valve

The SAV-Smart Air Valve is an economical self-commissioning air control solution. Featuring a 100-1 turndown and precision airflow accuracy to within a few CFM operating as low .03”W.G. It matches the ventilation rate to the

Continued on Page 30

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· H A P P Y ·

Holidays

from the Institute of Heating and
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and Indoor Comfort News.

We want to take this opportunity to express our thanks and appreciation to our dedicated members, advertisers, exhibitors, and ICN readership who continue to support IHACI and the trades, and give selflessly with their time and effort.
May your holiday season be filled with joy!



Technical Training

Growing Green Technicians Part 170: Temperature Rise, Calculating CFM in a Furnace

$$\text{CFM} = (\text{BTU Output}) / (\Delta T \times 1.08)$$

FIGURE TWO

By Jim Johnson
Contributing Editor

Green technicians are aware of the importance of conducting a temperature rise test in a gas furnace, the simple process of measuring the return air and supply air temperatures, then applying simple arithmetic to determine if the calculated temperature rise is within manufacturer's specifications.

Then, there is taking temperature rise testing to another level, calculating the volume of air required in a given system.

This process involves a table that determines what the air flow in CFM should be in a given piece of equipment. Shown in **Figure One** (courtesy of ESCO Group) the three segments of our table are BTU Output (blue), Delta T (yellow), and CFM (green).

For a quick example of how the table is used, we'll decide on two factors:

1. Our BTU Output is 80,000.
2. Our Delta T is 70-Degrees F.

When applying these factors to the table, we can see that locating the BTU Output in the blue segment, then reading to the right into the green segment until we note the column shown under the number 70 in the yellow segment, we can see that the CFM listing is 1058.

When technicians employ resources such as this table to determine what a system should be doing, they understand why the resource provides them with information. In this case, the why of the table we're using is illustrated by the formula shown in **Figure Two**.

To explain our formula in simple terms, we'll discuss it part by part:

....CFM = Cubic Feet per Minute

.... BTU Output = The net output of a combustion system (not the input, which is the number that is commonly used to identify the capacity of a furnace from a general perspective).

.... Delta T = Shown as a triangle and T in our example = temperature difference.

....1.08 = Sensible Heat

Equation constant.

Regarding BTU Output, you'll recall that we used the number 80,000 in our table example. In order to get there, we'll assume that the input of our furnace is actually 100,000 BTUs, but since it is an 80% efficient unit, the number we plug into the formula will be 80,000. On the Delta T, the number we used in the table was 70-degrees F.

Continued on Page 31

		Delta T										
		40	45	50	55	60	65	70	75	80	85	90
BTU Output	100000	2315	2058	1852	1684	1543	1425	1323	1235	1157	1089	1029
	95000	2199	1955	1759	1599	1466	1353	1257	1173	1100	1035	977
	90000	2083	1852	1667	1515	1389	1282	1190	1111	1042	980	926
	85000	1968	1749	1574	1431	1312	1211	1124	1049	984	926	874
	80000	1852	1646	1481	1347	1235	1140	1058	988	926	871	823
	75000	1736	1543	1389	1263	1157	1068	992	926	868	817	772
	70000	1620	1440	1296	1178	1080	997	926	864	810	763	720
	65000	1505	1337	1204	1094	1003	926	860	802	752	708	669
	60000	1389	1235	1111	1010	926	855	794	741	694	654	617
	55000	1273	1132	1019	926	849	783	728	679	637	599	566
	50000	1157	1029	926	842	772	712	661	617	579	545	514
	45000	1042	926	833	758	694	641	595	556	521	490	463
40000	926	823	741	673	617	570	529	494	463	436	412	
35000	810	720	648	589	540	499	463	432	405	381	360	
		CFM										

FIGURE ONE

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Troubleshooting

A Furnace That's Not Heating

By Jim Johnson
Contributing Editor

Your troubleshooting situation this time around involves an 80% single stage gas furnace that the customer estimates has been in service "at least 12 years". When you respond to the customer's complaint of "no heat" you find that the thermostat is set correctly, and the fault code signal from this unit's control system (see the pictorial diagram in **Figure One**) is showing "7 Red" flashes.

After disconnecting the power supply, checking all connections you determine that they are OK. Consulting the manufacturer's service information and determining a "Failed to light burners" condition, you decide to begin your troubleshooting procedure by attaching your voltmeter at connections 2 and 4 of the HSI circuit on the S2 segment of the control. When you restore power and initiate a call for heat, you note the following:

1. The IDM starts and operates

normally.

2. Your voltmeter reads 0-Volts.

3. The fault signal repeats.

Your troubleshooting question: *What is the next step you need to take to get this furnace back on line?*

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 or by U.S. Mail to: Technical Training Associates, PO Box 2259, Green Valley, AZ 85622-2259.

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

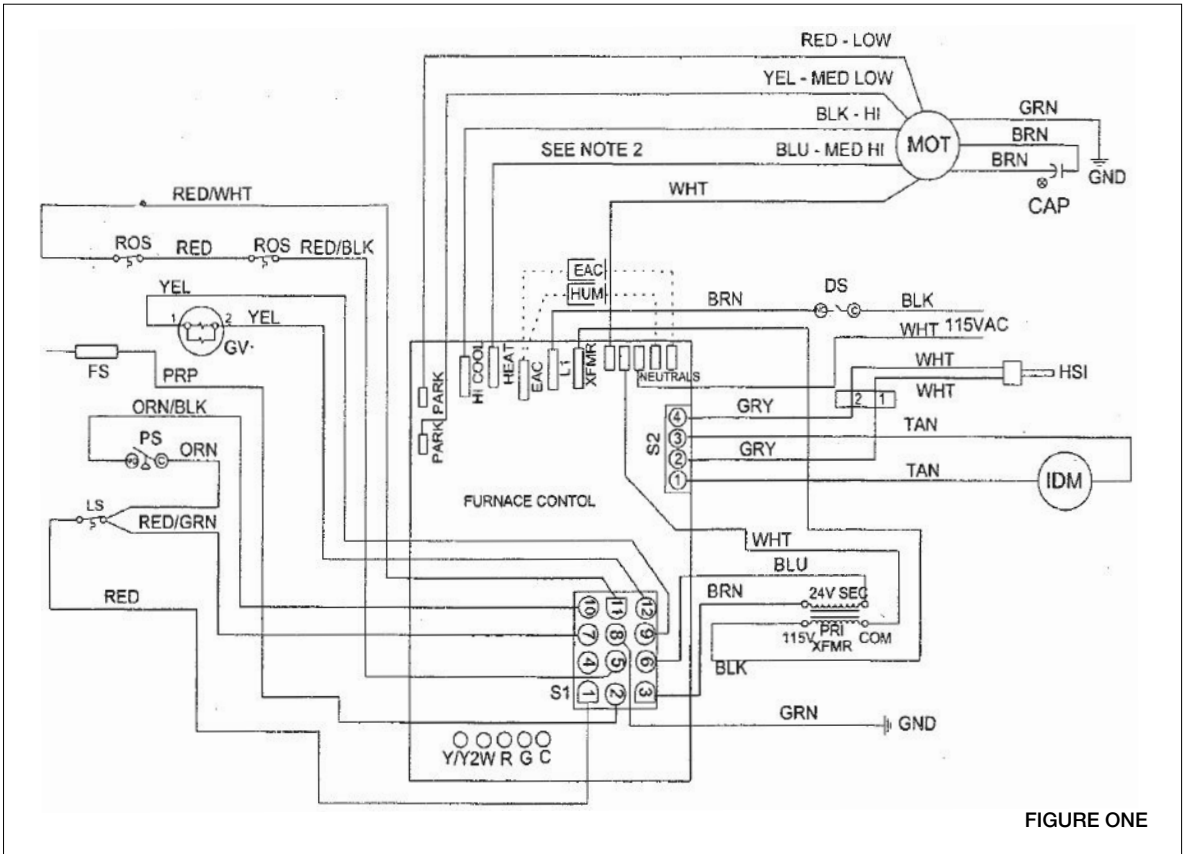
Correct answers will be entered into a drawing and will be eligible to receive a copy of Jim Johnson's video "Evaluating Refrigeration Systems: Troubleshooting & Identifying Problems."

Answer to Last Month's Troubleshooting

In order to get this unit back to full operating capacity, the first issue is that the indoor coil needs to be cleaned. Our illustration shows that the air handler discharge is directly into the supply duct, which means that the squirrel cage fan draws air through the indoor coil. When we removed the access panel to the air handler, we provided an alternate air supply other than the path of airflow that was through the dirty indoor coil and measured an increased air flow with our second test.

The second issue is the overcharged sealed system. To be certain that the system will be correctly charged and that there will be no contaminants, the best course of action is to recover the refrigerant, install a new filter-drier, evacuate to a level of 500 microns, and charge the system by weight according to the manufacturer's specifications.

The winner of last month's Troubleshooting is:
Michael Mauricio, Twin Falls, Idaho



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Look for more trade show photos in upcoming issues!

2024 TRAINING CLASS SCHEDULE

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

**SOUTHERN CALIFORNIA
EDISON, TULARE**

JANUARY

Electrical Module

(Four-Night Class) Instructors: Mitch Bailey / TBA
Wed., Jan. 17 – Part 1
Thurs., Jan. 18 – Part 2
Wed., Jan. 24 – Part 3
Thurs., Jan. 25 – Part 4

FEBRUARY

Gas Heating Module

(Two-Night Class) Instructors: Mitch Bailey / TBA
Tues., Feb. 6 – Part 1
Wed., Feb. 7 – Part 2

Title 24

(Two-Night Class) Instructors: Mitch Bailey / Jayme Carden
Wed., Feb. 21 – Part 1
Thurs., Feb. 22 – Part 2

MARCH

Chiller Module

(Two-Night Class) Instructor: John Dalton
Wed., Mar. 6 – Part 1
Thurs., Mar. 7 – Part 2

Cooling Tower Module

(Two-Night Class) Instructor: John Dalton
Wed., Mar. 20 – Part 1
Thurs., Mar. 21 – Part 2

APRIL

Air Distribution

(Four-Night Class) Instructors: Mike Griffin/Mitch Bailey
Wed., Apr. 10 – Part 1
Thurs., Apr. 11 – Part 2
Wed., Apr. 17 – Part 3
Thurs., Apr. 18 – Part 4

**SOUTHERN CALIFORNIA
EDISON, IRWINDALE**

JANUARY

Gas Heating Module

(Two-Night Class) Instructors: Mitch Bailey / TBA
Wed., Jan. 17 – Part 1
Thurs., Jan. 18 – Part 2

Title 24

(Two-Night Class) Instructors: Mitch Bailey / Jayme Carden
Wed., Jan. 24 – Part 1
Thurs., Jan. 25 – Part 2

FEBRUARY

Electrical Module

(Four-Night Class) Instructors: Mitch Bailey / TBA
Wed., Feb. 14 – Part 1
Thurs., Feb. 15 – Part 2
Wed., Feb. 21 – Part 3
Thurs., Feb. 22 – Part 4

MARCH

Air Distribution Module

(Four-Night Class) Instructors: Mitch Bailey / TBA
Wed., Mar. 13 – Part 1
Thurs., Mar. 14 – Part 2
Wed., Mar. 20 – Part 3
Thurs., Mar. 21 – Part 4

APRIL

AC/HP Refrigeration

(Four-Night Class) Instructors: Mike Griffin/Mitch Bailey
Wed., Apr. 10 – Part 1
Thurs., Apr. 11 – Part 2
Wed., Apr. 17 – Part 3
Thurs., Apr. 18 – Part 4

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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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Classes 6:00 PM • 2023 Training Class Schedule (Subject to Change).

Indoor People



KEITH COURSIN

Keith Coursin, the president of Desert Aire, a manufacturer of commercial and industrial humidity- and climate-control systems, will retire this month after 33 years as president.

"I've sincerely enjoyed my time in the HVAC industry and at Desert Aire, where the people have been my extended family, and I'm looking forward to spending more time with my immediate family, including two grandchildren in Phoenix," Coursin said in a press release.

Craig Burg, the current vice president of engineering, will succeed Coursin as president beginning Jan. 1, 2024. Burg has worked at Desert Aire for 25 years, during which his responsibilities have continually increased.

"Knowing Craig shares my vision of maintaining Desert Aire's traditions, but expanding on them, I'm very confident he will continue Desert Aire's growth in product innovation," said Coursin.

.....

Malco Products, one of the nation's leading solution developers and manufacturers of a variety of high-quality tools for the HVAC and building construction trades, today announced that **Rebecca Talbot** has joined the company as

its new vice president of marketing.

As leader of Malco's marketing team, Talbot will oversee, develop, and implement Malco's marketing strategy and efforts to increase brand and market position in order to achieve short-and long-term organizational goals. Talbot comes to Malco with a broad base of marketing accomplishments and professional experience, including positions at DeepRoot Green Infrastructure, Resideo (Honeywell) and Lakeland Companies. She holds a bachelor's degree from Metro State University and a Master of Business Administration degree from Georgia Southwestern State University.

Talbot will succeed Nancy Gunnerson, Malco's director of marketing, who recently retired after a 34-year career with Malco. During Gunnerson's time at Malco, she oversaw several innovative programs, including a new e-commerce tool, customer loyalty program and influencer relations campaigns, that contributed to the company's current record-breaking growth. She was also recognized by Twin Cities Business Magazine as a Notable Woman in Manufacturing in 2021.



REBECCA TALBOT

"We are very excited to welcome Rebecca to our team, and also wish Nancy a wonderful retirement after an incredible 30+ year career at Malco," said Rich Benninghoff, president and CEO of Malco Products. "With Rebecca's strong leadership and B2B marketing expertise, Malco will continue to expand its marketing strategies and capabilities to evolve with the changing wants and needs of the marketplace while staying true to our values and history."

.....



JON SILLERUD

Uponor North America (Uponor) recently announced **Jon Sillerud**, Vice President, Operations, has agreed to accept the additional responsibilities of leading the Supply Chain function for the company, effective immediately. He has been filling the Supply Chain leadership role on an interim basis for several months, proving his experience and extensive knowledge make him the ideal person to lead both functions. His new title is Vice President, Integrated Supply Chain, Uponor North America.

Since 2017, Sillerud has led North American Operations, a critical function that includes manufacturing, maintenance, quality, process engineering, real estate, security, and safety. In his newly expanded role, he will also guide the Supply Chain strategy and team, building partnerships with suppliers and leading continuous improvement initiatives that cover supply planning, production scheduling, distribution, transportation, and inventory.

.....

"Under Jon's leadership, our business will accelerate its lean manufacturing journey and ensure we continue to drive our growth trajectory under the priorities of safety, quality, delivery, productivity, and continuous improvement," says Andres Caballero, President, Uponor North America. "I am thrilled to have Jon expand his leadership role and look forward to the success he will bring for the Integrated Supply Chain functions in North America."

Oatey Co., a leading manufacturer in the plumbing industry since 1916, has promoted **Patrick Aquino** to Senior Vice President, Wholesale.

With nearly 20 years of experience in sales and business development, Aquino is a seasoned executive with deep knowledge of the plumbing industry. He joined Oatey nearly eight years ago as Northeast Regional Sales Manager and has since gained progressive responsibility as National Sales Manager; Director of Rough Plumbing and Commercial Sales; and most recently, Vice President, Wholesale. In his new position, Aquino will take on an enhanced leadership role, assuming responsibility for customer service and technical support in addition to U.S. wholesale and commercial sales.

"Patrick is a talented and experienced leader with a proven ability for driving sales, fostering customer relationships and devel-



PATRICK AQUINO

oping successful teams," said Neal Restivo, Chief Executive Officer at Oatey. "I am looking forward to his expanded leadership as we continue to grow our business and support our customers."

.....



TODD WADE

The board of directors at Republic, a distributor of HVAC and electrical products, has named **Todd Wade** to the board and has chosen him to succeed Mark Kilmer as CEO beginning in October.

Wade has been with Republic since 2012, has served as the president of the mechanical division since February 2022, and will be only the fourth CEO in Republic's 107-year history.

"Todd's record of success, integrity and proven leadership skills and experience in sales, vendor relationships, marketing, and technology make him highly qualified to lead Republic in driving the company's growth strategies," said Mark Kilmer, the current CEO, in a press release.

Kilmer will continue to serve as a member of the board and will retain substantial ownership. In addition, he will assist Republic in consulting and business development capacities as the company continues to grow and expand its footprint throughout the Midwest.

Republic was founded in 1916 by J.S. Kimmel, and later led by Joe Kimmel Jr. until he turned the reins over to his son-in-law, Kilmer, in 1998.

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AHR Expo Awards

Continued from Page 23

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current fixed orifice single venae contracta fluid measurement/ fluid control air terminals. Offers a variable dimensional aspect ratio footprint. It solves current issues for end users, Architects/engineers, contractors, and TAB entities. This innovation allows the controls companies/system integrators to supply and warranty the zone level devices as part of their scope of work, optimize their software/network architecture with self-balancing flexibility, Eliminate GIGO (garbage in garbage out) data and mitigate risk for the life cycle of

the building. SAV-Smart Air Valve transforms an infrastructure into a user centric healthy flexible space without mechanical infrastructure upgrades.

Finalists: ECM PCB Stator Technology, High-Performance, Lightweight 12hp PCB Stator Blower Motor; LG Electronics U.S.A. Inc., LG Split Compact M3 DOAS with Multi V S®

For more information about the 2024 AHR Expo or the Innovation Awards Competition, please visit ahrexpo.com.

Classifieds

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HVAC Business for Sale

22 year old HVAC company for sale in Santa Barbara, CA. Factory dealer for York and Samsung. Aerobrush, Rotobrush and sheet metal shop. Owner needs to retire due to medical reasons. 1 million in sales per year. Great internet and customer reviews. Comes with all trucks, service van and install equipment. Call 805-705-0377 if interested.

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- **ClearSky Payments**
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Technical Training

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Which brings us to the 1.08 in our formula. There's no mystery as to where this number comes from. Technicians understand a concept referred to as Properties of Air. And, while we understand that the properties of air are always changing when affected by temperature,

humidity, and altitude, we also understand what is known as the Common Properties of air, which are listed at sea level conditions and are as follows:

Density = 0.075 lbs. per cubic foot
Specific Heat = 0.24 BTU
And when the two factors above are combined into a simple formula....
 $0.24 \times 0.075 \times 60 \text{ minutes} = 1.08$
.... We can see where the Sensible Heat Equation constant comes from.

And, using the formula shown in **Figure Two** in steps, brings us to the same conclusion that our table showed.

Step One: CFM = BTU Output divided by (Delta T x 108)
Step Two: CFM = 80,000 / (Delta T x 108)
Step Three: CFM = 80,000 / (70 x 108)
Step Four: CFM = 80,000 / 75.6
Step Five: $80,000 / 75.6 = 1058 \text{ CFM}$

The process of calculating what the CFM in a given system should be, whether accomplished via a table or formula, is the first step in a system evaluation. The next step would be to conduct tests to determine the actual system performance and, if necessary, make the appropriate adjustments and/or modifications to ensure proper equipment operation.

GOLD KEY Contest Winner

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



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

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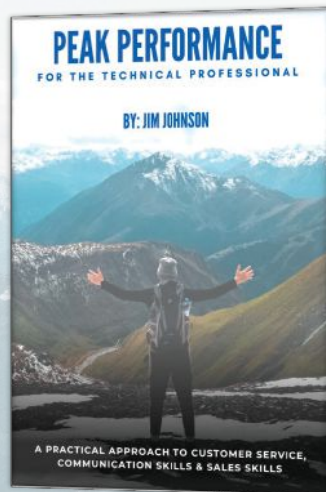


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