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MARCH 2023

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NEWS

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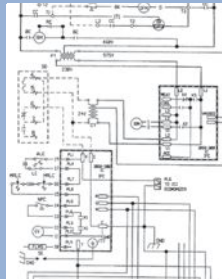
THE WEST'S LEADING MONTHLY NEWSMAGAZINE FOR THE AIR CONDITIONING, HEATING, REFRIGERATION, SHEET METAL AND VENTILATING INDUSTRIES



Editorial Focus

What's new? What's improved? Find out here as ICN takes a look at the latest offerings in Tools and Test Instruments.

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Troubleshooting

In this month's column, you are responding to a customer's early morning call for service on a rooftop unit.

Page 23



Case Studies

Ontario, Canada office building achieves optimal heating with upgraded boiler system.

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Federal Heat Pump Rebate Funds Likely Available in 2024 for Consumers

By Ted Rieger
Northern Calif. Correspondent

The U.S. Department of Energy (DOE) has begun the process of establishing guidelines for providing funding for incentives that will include rebates for

consumers to install heat pumps and other home energy efficiency measures, but these funds are not expected to be available to consumers until 2024. Heat pump rebates and incentives will also be available in California through the state's Equitable Building

Decarbonization Program that the California Energy Commission expects will begin this year.

On August 16, 2022, President Biden signed the Inflation Reduction Act (IRA) that includes \$391 billion to support clean energy and address climate change, in-

cluding \$8.8 billion in rebates for home energy efficiency and electrification projects. DOE's Office of State and Community Energy Programs (SCEP) is working to develop guidelines for distributing these funds nationwide that will be passed through state energy

offices and Indian tribes. The \$8.8 billion in home energy rebates will be available through September 30, 2031. Each state has been allocated funds, with California allocated \$582 million.

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Industry Events

AHR Names Cielo Product of the Year

Breez Max smart thermostat for mini-split, window, and portable air conditioners takes the top prize at this year's AHR Expo.



New innovations are the cornerstone of the HVACR industry, which is why the AHR Expo's Innovation Awards are quite the honor. Highlighting products across 10 different categories, the annual competition showcases inventive and original products that have been selected by a panel of third-party ASHRAE member judges. The products were evaluated based on aspects such as creativity, market impact, and overall design.

The winners of the Innovation Awards were initially announced in October 2022 and were later showcased at the AHR Expo, held at the Georgia World Congress Center in Atlanta, Georgia on February 6-8, 2023.

On Monday, the first day of

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Features

Chilled Brews: AC Condensate Crafted into Beer

San Diego airport teams up with local brewery to create beers with purified condensate collected through the airport's water stewardship program.

San Diego International Airport (SAN) and The East Village Brewing Company celebrate the release of two beers made with purified condensate collected through the airport's water stewardship program.

Hoppy Travels IPA is a West Coast IPA with flavors of grapefruit and guava and Pre-Flight Pils is a German-style pilsner with bready and lemon zest flavors. The beers are currently on tap at The East Village Brewing Company and are available at San Diego International Airport's Terminal 2.

The water used in the beers is condensate that dripped from the bottom of air conditioning units attached to jet bridges at SAN. The captured condensate was then purified using reverse osmosis and



The East Village Brewing Co. has released two beers made with purified condensate collected from air conditioners at the San Diego Airport.

ozone disinfection and transported to The East Village Brewing Company for its use. The condensate water has a pure water profile with little mineral

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CALIFORNIA



HERS Rated Homes in U.S. Tops 330K

Oceanside, Calif. – Good news for the HERS® industry, the number of homes that were HERS rated and received a HERS Index Score in 2022 continued to break historical records. In 2022, there were 337,962 homes HERS Rated in the country. This pushed the total number of homes HERS Rated in the U.S. to date to over 3.6 million. The previous record from 2021 was 313,153 homes HERS rated. The average HERS Index Score in 2022 was 58. This is 42% more efficient than a home built as recently as 2006.

The ten leading states in terms of homes receiving a HERS Index Score were:

- Texas: 81,674
- Arizona: 26,828
- North Carolina: 22,068
- Florida: 20,407
- Colorado: 19,157
- South Carolina: 13,920
- Indiana: 13,815
- Virginia: 11,462
- Massachusetts: 10,189
- Minnesota: 10,189

The top five states with the lowest average HERS Index Scores were:

- California: 18
- Vermont: 40
- Mississippi: 45
- Hawaii: 47
- South Dakota: 47

Of greater significance is the energy bill savings that the families who purchased these HERS-rated homes are receiving. It is calculated that the 2022 HERS-rated homes will net over \$253 million in annual energy bill savings, as compared to the HERS reference home.

In addition, it is calculated that the homes that were HERS rated in 2022 will reduce carbon dioxide emissions by over 1.5 million tons annually. These savings will, according to the EPA calculator, equate to over 3.1 million passenger vehicles being taken off the road for one year.

“Homebuilders are increasingly seeing energy efficiency as a major

selling point for buying a new home. To take advantage of this opportunity, builders across the nation are presenting their homes’ energy performance in a way that every home buyer can understand, the home’s HERS Index Score,” commented RESNET Executive Director Steve Baden on the 337,962 homes HERS rated in 2022. “I expect that this trend will continue. It is particularly encouraging that the average HERS Index Score of homes HERS rated was 58. This is 42% more efficient than homes built as recently as 2006 and 72% more efficient than a typical home built in the 1970s. I congratulate the builders, HERS Raters, and RESNET strategic allies that are leading the trend to mainstream high-performance homes in the marketplace.”

“RESNET, however, is not content with the current market share of HERS-rated homes. In 2023, RESNET is launching its initiatives that will include increasing the demand for HERS Raters services through new opportunities in energy code compliance, water efficiency rating, rating the installation of HVAC systems, the new RESNET Carbon Index and the emergence of ESG reporting and green bond mortgages based on HERS Ratings,” he added.



NASRC Releases Report on Technician Shortage for Refrigeration

Mill Valley, Calif. – The North American Sustainable Refrigeration Council (NASRC), a 501(c)(3) environmental nonprofit working to advance climate-friendly natural refrigerants in supermarkets, has released a report summarizing the commercial refrigeration industry’s increasingly critical technician shortage. The report proposes data-driven solutions to improve technician recruitment, training, and retention to grow the workforce.

“Anecdotal evidence from NASRC member contractors has long pointed to a shortage of commercial refrigeration technicians,” said Danielle Wright, executive director of NASRC. “We conducted this assessment to find concrete evidence and identify strategies to address this industry challenge.

The assessment substantiated

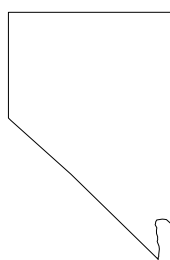
that the nationwide technician shortage is disrupting essential operations and threatening U.S. supermarkets’ ability to transition from HFC refrigerants. Supermarket refrigeration is one of the leading sources of high-GWP HFC emissions. NASRC estimates the annual climate impact from U.S. supermarket refrigerant leaks to be 55 million MTCO_{2e}.

NASRC gathered assessment information through interviews and written surveys from training, service, and human resource stakeholders. Though some national data was collected, the initial assessment primarily focused on California due to stringent regulations that have stimulated the transition from HFCs in the state.

“Our research found that the refrigeration technician workforce is caught in a negative feedback loop,” said Wright. “The shortage leads to demanding schedules, causing technicians to leave the field, further exacerbating the labor market supply issues.”

NASRC will coordinate an industry-wide implementation of the report recommendations, starting with a Natural Refrigerant Training Summit for technicians April 4-6, 2023, in Irwindale, California. Co-hosted with Southern California Edison, the event is free to attend and will feature training by leading manufacturers and experts.

NEVADA



Goettl Acquires Nevada Heating

Las Vegas, Nev. – Goettl Air Conditioning & Plumbing (“Goettl”), a leading provider of residential HVAC and plumbing services across the Southwest, announced that it has acquired Nevada Heating, Cooling, Plumbing, Fireplace Inc. in Reno, Nevada as part of its ongoing acquisitional growth strategy.

In addition to its latest acquisition, Goettl announces year-over-year growth of over 30 percent and plans for continued expansion throughout the Southwest in 2023. The company’s strategic

plans include entering three to four new markets with 10 or more acquisitions and job growth in each market. Goettl also adds a new fireplace service to its existing line of heating, plumbing and cooling services with its latest acquisition of Nevada Heating, Cooling, Plumbing, Fireplace Inc.

Nevada Heating has been a family owned and operated business serving the Reno Sparks area since 1973 and became known locally as the “Do It Right Guys.” The company’s facility includes a 7,000 square foot shop, 4,000 square foot fireplace and stove showroom, along with 4,500 square feet of office, training and conference area.

“We are excited to welcome Nevada Heating to the Goettl family as we expand our presence in our home state and throughout the southwestern U.S.,” says Ken Godrich, CEO, Goettl. “The Robnett family has built a tremendous business with the same principles we stand for at Goettl and that reflects our motto, ‘We do things the right way, not the easy way.’ We look forward to increasing our presence in the Reno area with an established, trusted partner.”

This acquisition is the latest in a series of partnerships made by Goettl with HVAC and plumbing companies to expand its reach and bring its services to new markets. In 2022, Goettl extended its footprint to Texas and California and continues to look at additional markets for expansion with industry leading HVAC and plumbing companies.

TEXAS



Interplay Learning Partners with Dominion

Austin, Texas – Interplay Learning, the scalable, effective training solution for engaging the new generation of maintenance technicians, has partnered with Dominion Management Services to offer highly effective, engaging, and scalable training solutions. Dominion is one of the nation’s leading affordable housing developers, owners, and managers, and is offering

Interplay’s training solutions to its technicians of all experience levels.

With Interplay Learning’s immersive, on-demand training courses and skills assessments, Dominion is engaging its maintenance associates with life-like 3D simulations and training content designed to update and grow their technical skills in-house. With a diverse catalog of technical courses and custom learning paths assigned to each associate’s skill level and property needs, Dominion delivers a robust, just-in-time training curriculum to 350+ associates across their 230 communities. Since implementing Interplay, Dominion is experiencing faster ramp times, increased internal promotions, and is developing more confident technicians. Additionally, cutting-edge training supports Dominion’s ability to create a competitive advantage.

“We’re seeing a transformation of our hiring and retention process through Interplay Learning’s powerful, ever-evolving training curriculum and learning paths,” said Eric Pogue, Dominion’s Vice President of Maintenance and Capital Improvements. “The foundational courses and up-to-date content empower our teams to self-direct their learning and grow in their careers with us, which translates to not only higher retention but also high-quality resident experiences. Interplay’s offerings play a critical role in supporting our mission to provide communities across the country with successful long-term housing outcomes.”

Dominion helps tackle the affordable housing crisis by developing and operating high-quality, stable, affordable homes that serve as the foundation for healthier lives and more vibrant communities. Nearly 90% of U.S. adults say the availability of affordable housing in their local community is a problem. A recent survey indicates the country faces a shortage of 6.8 million affordable rental housing units.

“Interplay is uniquely suited to helping companies like Dominion meet the evolving demands of their residents,” said Doug Donovan, founder and CEO of Interplay Learning. “We’re dedicated to giving organizations tools that drive the business forward and build better lives for their teams. By supporting Dominion’s efforts to recruit, train and retain the talent they need, we’re supporting their growth and their mission to provide outstanding affordable hous-

Industry News

ing opportunities that benefit communities all around us.”

Interplay Learning builds better training, better careers, and better lives for its customers and their employees. Its award-winning online and virtual reality training for the essential skilled trades, including HVAC, plumbing, electrical, solar, multifamily maintenance, and facilities maintenance workforces, is scalable and more effective than traditional training methods. By leveraging immersive learning technology, Interplay’s customers can train and practice hands-on learning from a desktop, phone, tablet, or in virtual reality, resulting in a highly trained employee who is job-ready in weeks, not years.

For more information, visit www.interplaylearning.com.

Lennox Wins GOOD DESIGN Award for 2022

Richardson, Texas – Lennox Industries has been recognized with a 2022 GOOD DESIGN Award in the Building Materials category for its Dave Lennox Signature Collection SL25XPV heat pump. Presented by The Chicago Athenaeum: Museum of Architecture and Design and Metropolitan Arts Press Ltd., the annual awards program highlights design excellence worldwide.

The GOOD DESIGN program received a record-breaking number of submissions from manufacturers and industrial and graphic design firms from over 55 countries, all representing designs ranging from sustainability, superior design, and unparalleled function. Submissions to the program are judged by a jury of design professionals and industry specialists on criteria for the highest aesthetic in terms of design, new technologies, function, energy efficiency, and sensitivity to the environment, among others.

“On behalf of Lennox Industries and our world-class engineering and product teams, we are honored to be part of this year’s distinguished GOOD DESIGN Awards program,” said John Whinery, VP of product management, Lennox Industries. “The SL25XPV is the most precise and efficient heat pump on the market, representing Lennox’ dedication to sustainability-driven innovation and unwavering focus on

quality.”

The variable-capacity SL25XPV heat pump is an ENERGY STAR certified product, reducing greenhouse gas emissions and meeting rigorous energy efficiency levels set by the U.S. Environmental Protection Agency. The technology allows homeowners from even the coldest climates in the U.S. to take advantage of up to 58% in cost savings per year.

LP First Capital, Trive Capital Form Partnership

Austin, Texas – LP First Capital (Austin) and Trive Capital (Dallas) announced the formation of Cascade Services, a family of leading

brands within the home services industry. The announcement comes in combination with the acquisitions of four established residential HVAC and electrical contractors in Florida, including Mid-Florida Heating and Air, Aztel Air Conditioning, Extreme Air and Electric, and Air Boca.

Cascade Services strives to be the preferred acquirer for family-owned HVAC, plumbing, and electrical business operators.

Cascade strives to be the preferred acquirer for family-owned business operators, the ideal employer to its team members, and to provide world-class service to its residential customers.

“Cascade Services is quickly becoming the acquirer of choice for residential HVAC, plumbing, and electrical contractors seeking a transition of ownership. We are

well positioned to support business owners who desire a capital partner to accelerate growth, as well as those owners who desire a full exit,” said Thomas Ince, Managing Director of LP First Capital.

“Cascade Services is fully committed to achieving growth at our underlying family of residential services brands,” added Ty Johnson, CEO of Cascade Services. “Accordingly, we are equipped to support contractors with operations, recruiting, marketing, accounting, and procurement, among other mission critical operational tasks.”

Cascade is actively seeking add-on opportunities in the residential HVAC, plumbing and electrical space. If you are interested in learning more or joining the Cascade family of brands, reach out at info@cascadeservices.com or visit

www.cascadeservices.com.

NATIONAL



Thermostat Recycling Corp. Collections Decrease

New York, N.Y. – Thermostat Recycling Corp. (TRC) collected 28% fewer pounds of mercury from thermostats in 2022 when compared with 2021. As a result,

Continued on Page 6

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Continued from Page 5

it collected 673.83 pounds of mercury in 2022, compared with 936.59 pounds in 2021.

There were 73,152 mercury-containing thermostat units collected and recycled in 2022 compared with 93,045 in 2021, a decrease of about 21%.

“We should not be alarmed by the decrease in the collection of pounds or units,” said Danielle Myers, operations and compliance manager, TRC. “This overall decrease is a sign that we are fulfilling our mandate and mission of being effective in retrieving and recycling mercury-containing thermostats. For every unit we collect, there is one less mercury thermostat in the nation since they are no longer produced.”

“Also, we had a moderate increase in 2021, an acknowledgment of the pent-up opportunity for collection during the coronavirus pandemic, when the collection efforts lessened. This was a unique circumstance that slightly raised collections for one year, but we anticipated a return to declining collections, just as we have seen in 2022.”

TRC’s top 10 recycling partners by pounds of mercury in 2022 are:

- Johnstone Supply
- R. E. Michel Co.
- Home Works Energy Inc.
- United Refrigeration
- Refrigeration Supplies Distributor (RSD)
- Ferguson
- F.W. Webb
- Gustave A Larson
- Lennox
- US Air Conditioning Distributors (USACD)

This past year, the top three states in the United States for re-

cycling thermostats were California with 70.25 pounds, Minnesota with 60.1 pounds, and Massachusetts with 57.14 pounds. The mercury-containing thermostat collections peaked in 2014 with 203,346 units.

“Whatever the external circumstances, the commitment never falters on the part of TRC’s partners,” Myers said. “While the number of units that we recycle might diminish over time, the enthusiasm and consistency of our partners remain strong because they understand that their efforts help to keep our environment both cleaner and safer.”

ASHRAE Releases Building Performance Standards Guide

Atlanta, Ga. – ASHRAE announced its commitment to reducing greenhouse gas (GHG) emissions with the launch of its redesigned building decarbonization webpage and the release of a new Building Performance Standards Technical Resource Guide.

The ASHRAE Task Force For Building Decarbonization (TFBD) webpage includes technical resources, information, videos, and publications to expedite the adoption of climate change mitigation policies and reaffirms the Society’s goals stated in the ASHRAE Vision 2022 Report, approved by ASHRAE’s board of directors, as well as the ASHRAE Position Document on Building Decarbonization, to achieve net zero GHG emissions in operation for all new buildings by 2030.

“Over the years, ASHRAE has demonstrated its leadership in reducing GHG emissions by addressing energy efficiency and sustainability, as articulated in some of our

most notable technical guidance such as Standards 90.1 and 189.1,” said ASHRAE TFBD Chair Kent Peterson. “The TFBD is working to provide vital technical guidance in new guidebooks and the redesigned webpage. ASHRAE is helping accelerate the transition from commitment to action in reducing global built environment GHG emissions.”

Additional features of the redesigned Building Decarbonization webpage include:

- Descriptions of seven new guidebooks focused on building decarbonization.
- A list of related outside decarbonization resources.
- A list of key decarbonization terminology.

The newly released Building Performance Standards (BPS): A Technical Resource Guide was created to provide a technical basis for policymakers, building owners, practitioners, and other stakeholders interested in developing and implementing a BPS policy. The first in a series of seven guidebooks by ASHRAE on building decarbonization, this guide focuses on reducing building operating energy use and resulting emissions in existing commercial and multifamily buildings, as established by leading U.S. cities and states. Jointly developed by ASHRAE, the U.S. Department of Energy (DOE) and its national laboratories, the BPS guide is meant to provide the information needed to make informed policy design decisions that drive deeper existing building decarbonization and provide equitable outcomes for all involved.

Highlighted topics covered in the guide include:

- BPS Metrics and Terminology
- Performance Targets
- Major Policy Considerations
- Analysis Methods for BPS

Policy Design

“So much collaboration brought this guide to fruition, which we hope will establish some much-needed consistency across the buildings industry to set these types of goals and targets — and then work toward meeting them,” said DOE’s Harry Bergmann, who led DOE’s involvement in the collaborative effort. “These methodologies and approaches are a critical starting point for moving our building stock toward a high-performance, decarbonized future, and we’re intentionally doing everything we can to reduce the barriers stakeholders have to engage with this content wherever possible.”

“The BPS Guide provides policymakers with a technical foundation upon which to build better policies, which play a key role in decarboniz-

ing existing buildings,” said BPS Working Group Initiator and ASHRAE TFBD Member Bing Liu. “This guidebook is a testimony to the collaborations and commitments of 21 working group members who provided expertise and recommendations from a wide swath of stakeholders across the buildings sector, from policymakers and building industry experts, to utilities, researchers, and more. In less than 12 months, the working group completed this guide after countless hours of volunteered time under the stellar leadership of Adam Hinge and Andrea Mengual as chair and co-chair, for which I am so grateful.”

Members of the ASHRAE TFBD are as follows:

- Kent W. Peterson, P.E., presidential fellow ASHRAE, chair
- Donald G. Colliver, Ph.D., P.E., presidential fellow ASHRAE, vice chair
- Blake E. Ellis, P.E., fellow ASHRAE
- Luke Leung, P.E., P.Eng., BEMP, fellow ASHRAE
- Bing Liu, P.E., fellow ASHRAE
- Clay Nesler
- Stet A. Sanborn
- Ginger Scoggins, P.E., fellow ASHRAE, 2022-23 ASHRAE president-elect

ASHRAE is furthering its commitment to reducing GHG emissions by strengthening the building decarbonization components of ASHRAE standards, including in ANSI/ASHRAE/IES Standard 90.1-2022, Energy Efficiency Standard for Sites and Buildings Except Low-Rise Residential Buildings and to reach net-zero-energy by 2031.

D. Brian Baker Memorial Scholars Announced

Mount Prospect, Ill. – To honor the memory of D. Brian Baker, an advocate for continued learning and professional development, a Memorial Scholarship was established to aid new instructors in attending the National HVACR Education Conference.

The Council of Refrigeration Educators (CARE), ESCO Institute and HVAC Excellence announced the 2023 recipients:

- James Welch of Fortis Institute, Cookeville, Tenn.
- Kevin McKenzie of Coastal Pines Technical College, Bruns-

wick, Ga.

The 2023 National HVACR Education Conference will offer attendees the opportunity to select from over 70 in-person training sessions while meeting face-to-face with industry leading organizations. In addition, they will continue their training once they return home with sessions through the summer on the HVACR Learning Network.

The goal of the event is to help HVACR personnel, regardless of their role or where they are at in their career, be more effective. Our scholarship recipients will now have the opportunity to learn about new technologies, codes, content-delivery techniques, and interact with those who are changing the face of our industry.

Organizations interested in improving education in the HVACR industry can do so by donating to the scholarship fund or participating in the conference.

DSG Celebrates 125th Anniversary

Plymouth, Minn. – Dakota Supply Group (DSG) announced the launch of its year-long marketing campaign, 125 years young, celebrating its 125th year in business.

In 1898, opening as a small plumbing distributor in Fargo, North Dakota, DSG has since expanded into seven verticals, serving the industries of electrical, plumbing, heating and air, waterworks, communications, utilities, and on-site sewer, water, and well. DSG has grown to over 52 locations in seven states, with plans to open three more locations in 2023, adding an eighth state to their footprint by the end of the year.

“This year marks a historic milestone for all employee owners at DSG,” said Paul Kennedy, president and CEO of DSG. “Over DSG’s many years, we’ve seen a lot – from wars, depressions, recessions, and global pandemics, as well as rapid technological innovations across every industry we serve, and despite our age, we feel young, vibrant, and energized.”

DSG’s strength comes from within – a people-centric organization that is passionate about serving others, from their fellow employees to the thousands of customers, and the various communities they operate in, DSG’s foundation is built on respect, teamwork, and growth. Over the last several years, DSG has seen tremendous growth through a combination of

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Duct Leakage Testing?





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This program is funded by California utility customers and administered by Southern California Gas Company (SoCalGas) under the auspices of the California Public Utilities Commission. Program funds, including any funds utilized for rebates or incentives, will be allocated on a first-come, first-served basis until December 31, 2023 or until such funds are no longer available. This program may be modified or terminated without prior notice. The selection, purchase, and ownership of goods are the sole responsibility of customer. SoCalGas makes no warranty, whether express or implied, including the warranty of merchantability or fitness for a particular purpose, of goods selected by customer. Customers who choose to participate in this program not obligated to purchase any additional goods offered by manufacturer, vendor, service provider, or any other third party. Eligibility requirements apply; see the program conditions for details.

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strategic acquisitions, opening new locations, and organic growth in all seven industry verticals they serve.

“Our success over the last 125 years would not be possible without our amazing team of employee-owners, our loyal customer base, and the partnerships from our vendor community. I am beyond proud of what we have accomplished and where we are going, and looking forward to using the momentum of our history to propel us forward – We’re 125 years young and I feel we are just getting started,” said Kennedy.

Headquartered in Plymouth, Minn., DSG is a wholesale distributor of products and solutions for the following industries: electrical; plumbing; HVACR; utility; communications; automation; waterworks; and on-site sewer, water, and well. DSG is a 100% employee-owned company with more than 970 employee-owners in more than 52 locations across seven states; Iowa, Michigan, Minnesota, Montana, North Dakota, South Dakota, and Wisconsin.

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Hoffman Bros. Partners with MLS Team

St. Louis, Mo. – Hoffmann Brothers announced the beginning of their Official Corporate Partnership with St. Louis CITY SC,

the newest Major League Soccer (MLS) expansion franchise. Hoffmann Brothers is a local home-service provider offering expertise in HVAC, drains, sewers, water heaters, electrical, and appliance services for residential and commercial properties.

“We are grateful for the one-of-a-kind opportunity,” says Chris Hoffmann, President at Hoffmann Brothers, “to be partnered with St. Louis CITY SC – an organization that shares our commitment to strengthening the St. Louis community.”

Family-owned Hoffmann Brothers employs more than 400 team members throughout the St. Louis Metropolitan Area. The company has served as a homegrown household name for more than 40 years, providing licensed professionals and customer-focused solutions for homes and local businesses.

“Hoffmann Brothers is a trusted STL Made brand that has held a special place in our community for decades, always putting customers, team members, and St. Louis first,” said Dennis Moore, St. Louis CITY SC’s Chief Revenue Officer. “We are honored to partner with Hoffmann Brothers and look forward to fostering this newfound collaboration with the company as we embark on our 2023 season.”

“As our business has expanded over the last 40 years,” Chris Hoffmann added, “so too has our ability to fulfill our purpose of Improving Lives in Every Home – to include the homes of our

team members, our customers, and the homes of the families that reside within the communities that we serve. Our partnership with St. Louis CITY SC is going to strengthen our ability to deliver on our purpose. We are proud to be the official heating, air conditioning, plumbing, electrical & appliance partner of St. Louis CITY SC!

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Hudson Tech Recognized by BuildingGreen

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 its R-Side Recovery Services and Reclamation Technology have been named to BuildingGreen’s list of Top 10 Products for 2023. BuildingGreen is a highly regarded publication that supports, facilitates, and champions changemakers in sustainable design and building. Additionally, the list is featured on the U.S. Green Building Council (“USGBC”) website, which serves as an informational resource for companies and entities committed to creating environmentally and socially responsible buildings and

environments. The full list may be accessed at:

<https://www.usgbc.org/articles/top-10-green-building-products-2023>

BuildingGreen’s annual Top 10 green building products award selects products that significantly improve upon standard “business-as-usual” practices. For this year’s list, the publication’s editors focused on products that increase material reuse and circularity, improve communities’ resilience, reduce carbon emissions and their impacts, reduce water consumption and more. With Hudson’s selection, BuildingGreen highlighted the Company’s commitment and capabilities around the recovery of refrigerant during repairs, end of life service when upgrading systems and improving equipment efficiency by cleaning refrigerant onsite. Additionally, BuildingGreen cited Hudson’s certified reclaimed refrigerants, sold under the Emerald Refrigerants™ brand, as an important element in effective refrigerant use and management.

Brian F. Coleman, President and Chief Executive Officer of Hudson Technologies commented, “Since our Company’s founding, Hudson has been committed to fostering the circular economy of refrigerants, through the promotion of responsible refrigerant management and sustainable practices. We’re gratified to receive this recognition from BuildingGreen, which highlights our efforts and

successes in developing unique and environmentally friendly products and services that can help prevent the venting of gases into the atmosphere while also easing the transition to increasingly greener cooling systems and refrigerants. We look forward to continuing to drive the progress of innovative technology and solutions for our industry.”

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Malco Seeks Entries for HVAC Trade-Pro of the Year Award

Annandale, Minn. – Are you an HVAC trade professional who excels in their field and gives back to the local community? Do you know someone who does? Then nominate them for Malco’s HVAC Trade-Pro of the Year Award.

Malco Products, SBC, one of the nation’s leading solution developers and manufacturers of a variety of high-quality tools for the HVAC trade, is now accepting nominations for its 7th annual national HVAC Trade-Pro of the Year Award program.

The HVAC Trade-Pro of the Year Award recognizes and celebrates outstanding, experienced HVAC technicians and installers who are dedicated to the industry and on-the-job safety, as well as giving back to their communities. Winners will be selected based on professional achievement, commitment to safety and contributions to their community.

The five winners will receive \$1,000 worth of Malco tools of their choosing, and all qualifying trade professionals who are nominated will receive a Malco cap and pair of gloves.

“These awards give Malco a chance to recognize and highlight skilled HVAC technicians across the country who are providing exceptional service to their customers and communities,” said Rich Benninghoff, president and CEO of Malco. “The HVAC Trade-Pro of the Year Award is part of our long-standing commitment to supporting those working and training in HVAC trades, and we look forward to celebrating the winners this fall.”

To nominate yourself, or another technician who has made a difference in your community, visit: www.malcoproducts.com/hvac-trade-pro-contest-2023-entry-form. Entries will be accepted until June 30, 2023, and winners will be announced in September 2023.

As a strong supporter and advocate of careers in the trades,

Continued on Page 10

Find the GOLD KEY and UNLOCK a PRIZE

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

Email your response to:
advertising@indoorcomfortnews.com

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



The creation of comfort.

See how VRF systems helped these residential and hotel spaces provide modern comfort for today's needs.



Hotel Saint Louis, Saint Louis, Missouri

Challenge: This historical landmark building wanted to modernize its space without losing the history of the original design.

Solution: By using a design that featured Samsung's DVM S Heat Recovery system and its zoning capabilities, the design team was able to free up new space to be used for a rooftop restaurant, bar and swimming pool.



The Divine Lorraine Apartments, Philadelphia, Pennsylvania

Challenge: When this historical building was restored, the design team wanted to retain its original beauty and charm, but with limited space to locate and conceal indoor and outdoor equipment, modern HVAC equipment didn't fit into the building's footprint or original design.

Solution: By utilizing the zoning capabilities of Samsung's DVM S system, residents are now able to adjust individual climate settings, while the system's smaller footprint and extended piping length provided the installation flexibility needed to accommodate the building's unique design requirements.



The Kapiolani Residence, Honolulu, Hawaii

Challenge: The owner of this new residential building set out to provide housing to lower income residents with affordable utility costs, while keeping independent zone control for other units and common areas.

Solution: Using Samsung's DVM S system, the design team was able to provide independent zone control to the building's common areas, while single and multi-zone systems were installed in apartments to allow residents to control individual rooms/zones without turning the system on and off, adding efficiency and cost savings.



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Malco donates significant quantities of in-kind products and apparel annually to a variety of skilled trade education programs, competitions and events across the country, including high school, post-secondary technical and apprenticeship programs, regional apprenticeship contests and SkillsUSA state and national conferences. Malco also coordinates the "Head of the Class" Student Recognition Program that partners with education programs across the country to recognize high-achieving students and entire graduating classes in the HVAC/sheet metal, building construction and autobody repair fields.

For more information about

Malco Products, SBC, visit www.malcoproducts.com.

NADCA Publishes Paper on Cleaning Open Air Plenums

Mt. Laurel, N.J. – The National Air Duct Cleaners Association (NADCA), also known as the HVAC Inspection, Cleaning, and Restoration Association, announces the publication of a white paper on methods of inspecting and cleaning open air plenums.

The paper addresses common contaminants found in open air plenums that can adversely impact the conditioned space, and provides guidance for the inspection and cleaning of those areas.

Open air plenums are found in both commercial and residential settings and consist of intended non-ducted air pathways formed in building cavities, voids, and spaces outside of the occupied zone of buildings. By design, they facilitate airflow between HVAC equipment and the occupied space of a building, and often contain building elements such as mechanical (HVAC), electrical, plumbing, gas piping, fire protection, sewer, and telecommunications systems that are essential to the operation of the building or residence.

Open air plenums are typically unfiltered spaces, and can contain dust, dirt, debris, asbestos, lead, animal and insect by-products, microbial contamination, and a broad range of hazardous chemicals and materials. The accumulation of

contaminants in an air plenum can cause indoor air quality issues that potentially pose health risks to the occupants of the building.

"As the authority in the industry, NADCA has developed this white paper to provide recommended approaches to inspecting and cleaning open air plenums. These spaces are often overlooked when cleaning HVAC systems because typical duct materials like ductboard and flex duct may not be present. Unlike sealed ductwork, open air plenums can be used for purposes other than to facilitate a pathway for air circulation, and often contain items unrelated to the HVAC system," said Paul Keller, Jr., ASCS, NADCA Board member.

Open air plenums should be inspected and cleaned periodically since airflow throughout these

spaces can create an increased risk of contamination, odors, condensation, microbial growth, and other conditions that may require attention and cleaning.

NADCA's Open Air Plenums white paper is available for download at <https://www.nadca.com/resources/nadca-white-papers>.

Redwood Services Investment in Best Care Home Services

Memphis, Tenn. – Redwood Services ("Redwood"), a home services firm focused on investing in leading residential HVAC, plumbing and electrical services companies in growing U.S. markets, announced it has invested in Best Care Home Services ("Best Care").

Best Care was founded in 2009 by Brian Reed. The business has nearly 90 full-time employees serving the metro areas of both Memphis, Tenn., and Huntsville, Ala., with a customer base that has grown to over 40,000 homeowners.

"Best Care has quickly established a powerful presence in the Memphis and Huntsville markets, with a strong, experienced team that supports the company's rapidly expanding customer base," said Richard Lewis, CEO of Redwood Services. "Demonstrating an uncompromising commitment to finding top talent and providing superior service, Brian and his team have shown themselves to be fully aligned with the high standards that distinguish all Redwood Partners. We are pleased to welcome Best Care to the Redwood family and look forward to supporting the company's continued high-growth trajectory."

Brian Reed will retain a significant minority ownership stake as part of the investment. Redwood will offer operational, strategic and financial support to enhance the company's growth, while the Best Care team will continue to operate and manage the business under the Best Care banner and name.

"From my earliest conversations with the Redwood team, it was clear that they recognized and appreciated the business values we've established at Best

Continued on Page 12

NEXYA



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MODEL #	DESCRIPTION	NET PRICE
C/SENIH09EI	Nexya 9000 BTU R410 115V	\$ 544.00
SENIH09EI	Indoor Unit Nexia 9000 BTU R410 115V	
CENIH09EI	Outdoor Unit Nexia 9000 BTU R410 115V	\$ 583.00
C/SENIH12EI	Nexya 12000 BTU R410 115V	
SENIH12EI	Indoor Unit Nexia 12000 BTU R410 115V	\$ 767.00
CENIH12EI	Outdoor Unit Nexia 12000 BTU R410 115V	
C/SENIH18EI	Nexya 18000 BTU R410 220V	\$ 912.00
SENIH18EI	Indoor Unit Nexia 18000 BTU R410 220V	
CENIH18EI	Outdoor Unit Nexia 18000 BTU R410 220V	\$ 1,115.00
C/SENIH24EI	Nexya 24000 BTU R410 220V	
SENIH24EI	Indoor Unit Nexia 24000 BTU R410 220V	\$ 1,201.00
CENIH24EI	Outdoor Unit Nexia 24000 BTU R410 220V	
C/SENIH30EI	Nexya 30000 BTU R410 220V	\$ 1,201.00
SENIH30EI	Indoor Unit Nexia 30000 BTU R410 220V	
CENIH30EI	Outdoor Unit Nexia 30000 BTU R410 220V	\$ 1,201.00
C/SENIH36EI	Nexya 36000 BTU R410 220V	
SENIH36EI	Indoor Unit Nexia 36000 BTU R410 220V	\$ 1,201.00
CENIH36EI	Outdoor Unit Nexia 36000 BTU R410 220V	

Pricing does not include line sets, disconnect switch, or other parts/accessories
Pricing does not include shipping from our warehouse



The Nexya line of Inverter drive heating and cooling mini split systems come in a variety of capacities (9K-36K), available in 115V and 230V with efficiencies up to 24 SEER.



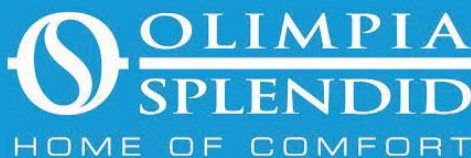
Specifications		9,000	12,000	18,000	24,000	30,000	36,000
Cooling capacity ⁽¹⁾	BTU/H	9,000	12,000	18,000	24,000	30,000	36,000
Heating capacity ⁽¹⁾	BTU/H	9,000	12,000	18,000	26,000	30,000	36,000
Energy Efficiency Ratio	EER	13.8	12.5	13.5	13	10.5	13.5
Sound power ⁽²⁾	dB(A)	54	54	60	62	60	60
Voltage	V	115	115	208/230	208/230	208/230	208/230
Seasonal Energy Efficiency Ratio	SEER	23	22	24	21	18.6	17.5
Indoor Dimensions	W/H/D	31.57" x 7.87" x 11.61"	31.57" x 7.87" x 11.61"	42.64" x 9.61" x 13.23"	42.6" x 9.21" x 13.27"	49.57" x 11.1" x 14.25"	49.57" x 11.1" x 14.25"
Outdoor Dimensions	W/H/D	30.12" x 11.93" x 21.85"	30.12" x 11.93" x 21.85"	35.04" x 13.46" x 26.5"	37.24" x 16.14" x 31.89"	37.24" x 16.14" x 31.89"	37.24" x 16.14" x 31.89"

(1) Test condition: Data refers to conditions and parameters as required by DOE requirements governing this product type. HEATING MODE: Outdoor Ambient Temperature DB 45°F/7°C WB 43°F/6°C; Indoor Ambient DB 68°F/20°C - WB 59°F/15°C. COOLING MODE: Outdoor Ambient Temperature DB 95°F/35°C WB 75°F/24°C; Indoor Ambient DB 81°F/27°C - WB 66°F/19°C

(2) Test conditions for sound ratings are conducted as per DOA rating conditions, conducted in a soundchamber performed at a distance of 3.3 feet (1 meter). Minimum sound pressure values are rated in ventilation mode only.



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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.

MARCH 2023

NATE HVAC/R Support Training (Four-Night Class)

Instructor: Mitch Bailey
Wed., March 1 – Part 1
Thurs., March 2 – Part 2
Wed., March 8 – Part 3
Thurs., March 9 – Part 4

Air Distribution Module (Four-Night Class)

Instructor: Mitch Bailey
Wed., March 22 – Part 1
Thurs., March 23 – Part 2
Wed., March 29 – Part 3
Thurs., March 30 – Part 4

APRIL-MAY 2023

AC/HP Refrigeration Module (Four-Night Class)

Instructor: Mitch Bailey
Wed., April 26 – Part 1
Thurs., April 27 – Part 2
Wed., May 3 – Part 3
Thurs., May 4 – Part 4

MAY 2023

Electrical Module (Four-Night Class)

Instructor: Mitch Bailey
Wed., May 24 – Part 1
Thurs., May 25 – Part 2
Wed., May 31 – Part 3
Thurs., June 1 – Part 4

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

You can register online by visiting: pge.com/hvactraining. Attendees must register for each night separately and registration is on a first-come, first-served basis.
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Federal Heat Pump Rebate Funds Likely Available in 2024 for Consumers

Continued from Page 1

The IRA has two provisions authorizing the \$8.8 billion in rebates:

- Section 50121: Home Energy Performance-Based, Whole House Rebates (referred to as Home Efficiency Rebates), and
- Section 50122: High-Efficiency Electric Home Rebate Program (referred to as Home Electrification Rebates.) This provision is also called the High Efficiency Electric Home Rebate Act (HEEHRA).

Information on the status of funding for California was provided by Elaine Kahan of the California Energy Commission's (CEC) Media and Public

Communication Office: "The process of distributing IRA and HEEHRA rebates in California has not yet been determined. The programs are in the early stages of development at the Federal DOE, which posted a Request for Information (RFI) January 18 to inform DOE's guideline process."

Responses to the RFI from interested parties are due no later than March 3, 2023. The DOE guidelines are expected to be available over the summer of 2023, at which time, Kahan said, "Concurrently, the CEC will host public workshops to provide additional information and solicit feedback from interested parties (e.g. local governments, utilities, sister state agencies, manufacturers and

retailers, environmental justice and community based organizations) throughout this upcoming year. Rebates are anticipated to be available to consumers in 2024."

More information from DOE is available at: <https://www.energy.gov/scep/slsc/home-energy-rebate-programs>

CEC to Administer State Decarbonization Program Funds

Kahan also provided information on another incentive program opportunity, the state-funded California Equitable Building Decarbonization Program. The CEC is currently seeking input through a Request for Information (RFI) process for this program that is

expected to begin in 2023.

State legislation signed in September 2022, AB 209 and AB 179, directs the CEC to develop and implement an Equitable Building Decarbonization Program that includes two primary components: a direct install program focused on low-to-moderate income residents, and a statewide incentive program to accelerate deployment of low-carbon building technologies.

The 2022-23 California Budget Act provided the CEC with \$112 million for the Equitable Building Decarbonization Program for its first year. Additional funds are expected from the state budget for this program over the next four fiscal years that could total up to

\$835 million. Funding will be available for low-carbon building technologies such as heat pumps to replace older space conditioning and water heating equipment.

HVAC industry representatives are participating in the CEC's RFI process and comments have been provided from the Air-Conditioning, Heating, and Refrigeration Institute (AHRI); the Heating, Air-conditioning & Refrigeration Distributors International (HARDI); and Daikin US Corporation.

More information on this program can be found through the CEC website at: <https://www.energy.ca.gov/programs-and-topics/programs/equitable-building-decarbonization-program>

Condensate Beer

Continued from Page 1

content, making the reclaimed water an ideal base for brewers. In addition to making beer, the water is used to clean equipment and vehicles at SAN as well as in the cooling towers that control the temperature in the terminals.

"We first partnered with the brewers of The East Village Brewing Company in 2019 when they brewed a beer called SAN Test

Pilot using the condensate while working at another local brewery," said Kimberly Becker, San Diego County Regional Airport Authority President & CEO. "The beer was very successful, selling out almost immediately, and since then we've been interested in collaborating again. The East Village Brewing Company's focus on sustainability aligns with our efforts at the airport and we are happy to have the opportunity to showcase this reclaimed water innovatively with their help. Cheers to another suc-

cessful collaboration."

"Wholesome ingredients, sustainability, and community are the core tenets of our brewery," said Aaron Justus, The East Village Brewing Company Owner and Brewer. "This collaboration checks all three boxes. It's great to partner again with the airport, a pillar within our community filled with passionate and fun people. The condensate water is superbly pure and ideal for brewing. Plus, it's no secret that California is in the midst of a long-term drought, so

water reclamation is a creative way to reduce our water footprint here in San Diego."

The East Village Brewing Company has an emphasis on sustainability, ensuring its operations, brewing practices, and final products limit the impact on the environment. Some examples include sourcing hops and malt ingredients from certified Global GAP and Salmon Safe farms, providing their spent grain to a local farm for cow and pig feed, and sourcing all raw materials from

companies located on the West Coast of the U.S. In addition, all water that runs through the heat exchanger is reclaimed and used for cleaning and brewing, lights are low energy LED and have either timers or motion sensors, cleaners and hand soap for tasting room and bathrooms are earth friendly. The brewery is paperless and does not use shrink wrap or other single-use plastics.

To learn more about The East Village Brewing Company, please visit eastvillagebrew.com.

Industry News

Continued from Page 10

Care," said Brian Reed, founder and CEO of Best Care. "Our drive to support and coach team members has been a significant factor in our success. With Redwood, we have a Partner that will put our people first and invest to accelerate our growth as we meet the high expectations of our colleagues and communities."

Best Care is Redwood's ninth platform investment, following investments in Kent, Ohio-based Apollo, Jackson, MS-based Environment Masters, Phoenix-based Plumbing Medic, Indianapolis-based Service Plus, Cincinnati-based Arlinghaus, Fresno-based Allbritten, D.C.-based John C. Flood, and Tucson-based Rite Way.

Founded in 2020, Memphis-based Redwood Services is building a family of people-focused essential home service companies, actively investing in the HVAC, plumbing and electrical trades throughout the United States. Redwood operates brands in the Arizona, D.C., Maryland, Virgin-

ia, California, Kentucky, Indiana, Mississippi, Ohio, Tennessee and Alabama markets as it continues to build out a national home services platform.

For more information, visit RedwoodServices.com.

BDR Named One of Washington's Best Companies to Work For

Seattle, Wash. – Business Development Resources (BDR), a provider of training and business coaching services for home services industry professionals, was recently named one of Seattle Business Magazine's Washington's Best Companies to Work For.

This annual program, created by Seattle Business Magazine and Best Companies Group, is to identify, recognize, and honor the best employers in Washington who benefit the area's economy, workforce, and businesses.

"At BDR, our mission is to empower businesses, and we're equally committed to empowering our team members," said Bruce Wiseman, co-founder and CEO

of BDR. "We're proud to be part of Washington's inspiring business community, and we'll continue to be a great place to work in 2023."

To be considered for participation, companies had to have a facility in Washington state, have at least 15 employees working in eligible counties, and be in business for a minimum of one year.

Companies across the state entered the two-part survey process to determine Washington's Companies to Work For. The first part evaluated each nominated company's workplace policies, practices, philosophy, systems, and demographics.

The second part consisted of an employee survey to measure the employee experience. Best Companies Group managed Washington's overall registration and survey process, analyzed the data, and determined the final rankings. This process was worth approximately 75% of the total evaluation and the combined scores determined the top companies and the final rankings.

Companies are recognized in the January/February issue of Seattle Business Magazine.

ACCA Past Chairman James Isaac Passes Away

Alexandria, Va. – The Air Conditioning Contractors of America (ACCA) is sad to announce the passing of ACCA Past Chairman, James (Jim) Isaac, former president of Isaac Heating and Air Conditioning Inc. on January 27, 2023.

Jim was an HVACR industry hero. He was the president and CEO of Isaac Heating and Air Conditioning Inc. in Rochester, N.Y., a position he assumed after the untimely death of his father in 1967. During his tenure, Jim helped grow the business with his brothers Ed, Tom, and Bill, to a large and strong HVAC services firms. Jim was known for his innovation in marketing, customer service, and the customization of the products sold by the Isaac team. During his time leading the Isaac team, Jim gave back to the industry through service on ACCA's Board of Directors, ultimately serving as chairman of the Board of Directors in 1990. He also served on several boards within the industry at the local,

state, and national levels. Jim's service to the industry was often highlighted through the many awards he received, which include the Rochester Small Business Council's Business Person of The Year and the Rochester Business Ethics Award. He also was inducted into the Contracting Business Magazine's Contractor Hall of Fame and the Rochester Business Hall of Fame.

Jim's service to the HVACR industry was only rivaled by his humanitarian efforts. He was passionate about giving back to his community, as seen by his work with the Rochester Rotary, Flower City Habitat for Humanity, Otetiana Seneca Waterways Council of the Boy Scouts of America, Heritage Christian Services, Eastern Service Workers, United Way of Greater Rochester, and many more. He was honored by ACCA for his humanitarian efforts in 2014 as the inaugural recipient of ACCA's Community Leadership Award, which was developed in honor of Skip Snyder, another past ACCA Chairman of the Board.

"ACCA is saddened by the loss

Continued on Page 21



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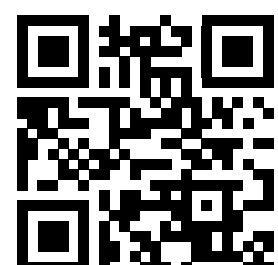
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Tools & Test Instruments

Fieldpiece Instruments Combustion Analyzers



Fieldpiece Instruments, the leading manufacturer of professional-grade tools for HVACR pros by HVACR pros, announced the launch of two new combustion analyzer models, with compatible printers sold separately or bundled together. The new Fieldpiece Combustion Analyzers, CAT85 and CAT45, enable HVACR professionals to assess heating system emissions, draft pressure, and temperatures to support the overall fuel-efficiency and safety of furnaces. These new combustion analyzer models make analysis easier and more effective with a large touchscreen display interface delivering effortless readings, new sensor technology that maximizes uptime on the jobsite, a convenient rechargeable battery, and industry-leading wireless range when used with the Job Link® System App.

“Optimizing combustion can lower energy consumption and costs and is critical to preventing pollution risks to humans and the environment,” said Jeb Ball, Vice President of Sales and Marketing at Fieldpiece Instruments. “We developed the CAT85 and CAT45 to improve combustion analysis through optimized thermal processes in order to elevate the technician experience and reduce emissions. We are proud to add these new combustion analyzers to our full range of professional-grade HVACR tools to improve how technicians assess and monitor combustion data during installation, maintenance and repairs.”

Starting with a convenient one-touch On-button with immediate analysis readily available from the onset, these tools are intuitive, user-friendly and make data simple to scan quickly. Techs appreciate the clear view of all information on a single screen, the easy-to-navigate touchscreen display design and simple user-interface.

The CAT85 and CAT45 both feature Fieldpiece patent pending SensorVault™ technology that offers lower cost of ownership. This patent pending feature extends sensor life by sealing the sensors from oxygen in the air during storage. These sensors are warranted

for four years and are field replaceable – meaning maximum uptime on the jobsite.

Featuring a thick over-molded construction, a long flexible hose/cord and a padded carrying case, the combustion analyzers are designed to handle the rigors of any job site. They measure O₂, CO, CO₂, flue temperature, air temperature and draft/gas pressure, to ensure combustion safety and efficiency. Plus, the CAT85 and CAT45 come with a rechargeable battery that lasts for up to seven hours and enable charges in trucks between jobs and overnight. Compatibility with the Fieldpiece Job Link® System App featuring its industry leading 1000-foot wireless range, means techs can view trends, draft pressure, and customer details seamlessly and conveniently.

On the commercial and residential side, the CAT85 features a built-in manometer, meaning one less tool to carry to the job; and live draft pressure that lets technicians troubleshoot while running system analysis.

The CAT85 automatically separates and returns accumulated water to the flue using the patent pending HydroCycle™ Pump technology that saves time.

In addition to the two new combustion analyzer models, CAT85 and CAT45, Fieldpiece has also launched compatible printer model options including the Combustion Analyzer HC with Wireless Printer, CAT85K2; Combustion Analyzer with Wireless Printer, CAT45K2; and the stand-alone Wireless Printer, CATPR.

More information: www.fieldpiece.com/combustionanalyzer.



Malco Andy Snips



Malco, one of the nation’s leading solution developers and manufacturers of a variety of high-quality tools for the HVAC trade, has launched a new product within its popular Andy™ snips line, the lightweight and ergonomic Andy Aluminum Handled Offset Left Snips 12” (MC12L).

Verified by internal testing, the MC12L Andy snips offer the following advantages over competing

products:

- Superior material flow for up to 60% faster cutting speeds
- Up to 45% longer cuts when operating one-handed
- The highest maneuverability for continuous cut radii half the size of leading competition, with better cut quality
- Lower jaw made of investment-cast tool steel allows for starter holes as small as 1/2”

With this versatile tool, HVAC trade pros can make longer, tighter, higher-quality straight and left curve cuts in many types of materials, including sheet metal, metal roofing, aluminum, stainless steel, steel siding, and vinyl.

The MC12L Andy snips are built with incredibly strong, lightweight aluminum for ease of use and durability, and the ergonomic offset handle provides a safer and more comfortable angle for cutting to reduce hand fatigue.

A full 3-inch cutting length reduces the total number of cuts and repetitive motions, saving the user time and effort. The sharp bottom cutting jaw is constructed of tough tool steel, while the upper cutting blade can be easily replaced every 20,000 cycles to extend its overall life.

More information: www.malco-products.com.



NAVAC Power Tubing Bender

NAVAC, the world’s largest supplier of HVAC vacuum pumps in addition to a wide array of tools, gauges, charging machines, recovery units and industry-specific items, has introduced the HVAC/R industry’s first power tubing bender. The newest addition to the company’s BreakFree® series of conveniently cordless tools, NAVAC’s NTB7L Power Tubing Bender is designed to make a typically time-intensive chore far simpler, quicker, and more precise. The NTB7L joins the NTE11L Power Tubing Expander and award-winning NEF6LM Power Flaring Tool in NAVAC’s family of battery-operated tubing tools.

For HVAC service technicians, bending large-diameter tubing is often a difficult, time-consuming task requiring high levels of attention and precision. Often, part of the frustration is removing the bent tube from a conventional bender mandrel. NAVAC’s power tubing bender represents an exacting, time-saving solution to this often laborious process.

Suitable for seven distinct tubing



sizes with outside diameters (OD) ranging from 1/4” to 7/8”, the NTB7L Power Tubing Bender allows soft ACR copper to be bent to any desired angle up to 90 degree via a single press/release control switch, and offers simple OD size changes in just seconds. Upon a completed bend, the unit’s baffle automatically ejects the tubing while the tool resets – eliminating the end-of-bend struggles common with manual applications.

Despite its light weight – the unit weighs just 6.2 pounds, including battery – the NTB7L Power Tubing Bender’s large capacity lithium battery can power more than 100 bends per charge, and can be fully recharged in 30 minutes. NAVAC also offers a separately sold NTBRK Reverse Bending Kit.

More information: www.navac-global.com.



Nu-Calgon Gallo Gun



Nu-Calgon has launched the Gallo Gun® Cannon, an inflatable drain opening accessory engineered to quickly and easily clear clogged 3/4” PVC condensate drain lines through the existing 3/4” tee. Designed to be used exclusively with Nu-Calgon’s Gallo Gun, the Cannon works with vent opening, access fittings, or tees installed on the HVAC drain line and ensures clogged drain lines get cleaned the right way every time.

The Gallo Gun Cannon inflatable drain opening accessory is ideal for 3/4” PVC condensate drain lines. Simply drop the Cannon into the cleanout/vent tee on a drain line, push the trigger, and the Cannon will inflate, creating an airtight seal while the Gallo Gun instantly clears the clog in the drain line.

The patent-pending Gallo Gun Cannon works with the Gallo Gun

CO₂ drain opener, along with Mag 20, 20-gram cartridges or Mag 16, 16-gram cartridges.

More information: www.nucalgon.com.



Hercules Megabubble Leak Detector



Hercules Megabubble Leak Detector uses a high-viscosity formula that produces large, long-lasting blue bubbles for easier detection of leaks on pipes, fittings, tanks, coils, cylinders, pressure vessels and valves.

The formula is nontoxic, non-corrosive and will not freeze. The product is available with a dauber or spray bottle. Megabubble is especially useful when you’re testing a gas pipe. Since threading oil is used during the threading process, there’s usually a little residue left on the joints.

In addition, dish soap is formulated to repel grease, so if you use it on a gas pipe joint, it will most likely flow right off before the bubbles can actually form. Megabubble is specially formulated to cling to pipe better than a regular soap-and-water mixture. It can be used to detect leaks of gas, air, compressed air, nitrogen, natural gas, refrigerants, CO₂, and almost all other known gases. It also won’t harm or stain metal, rubber or plastic surfaces.

More information: www.Oatey.com.



RIDGID SeeSnake microReel APX

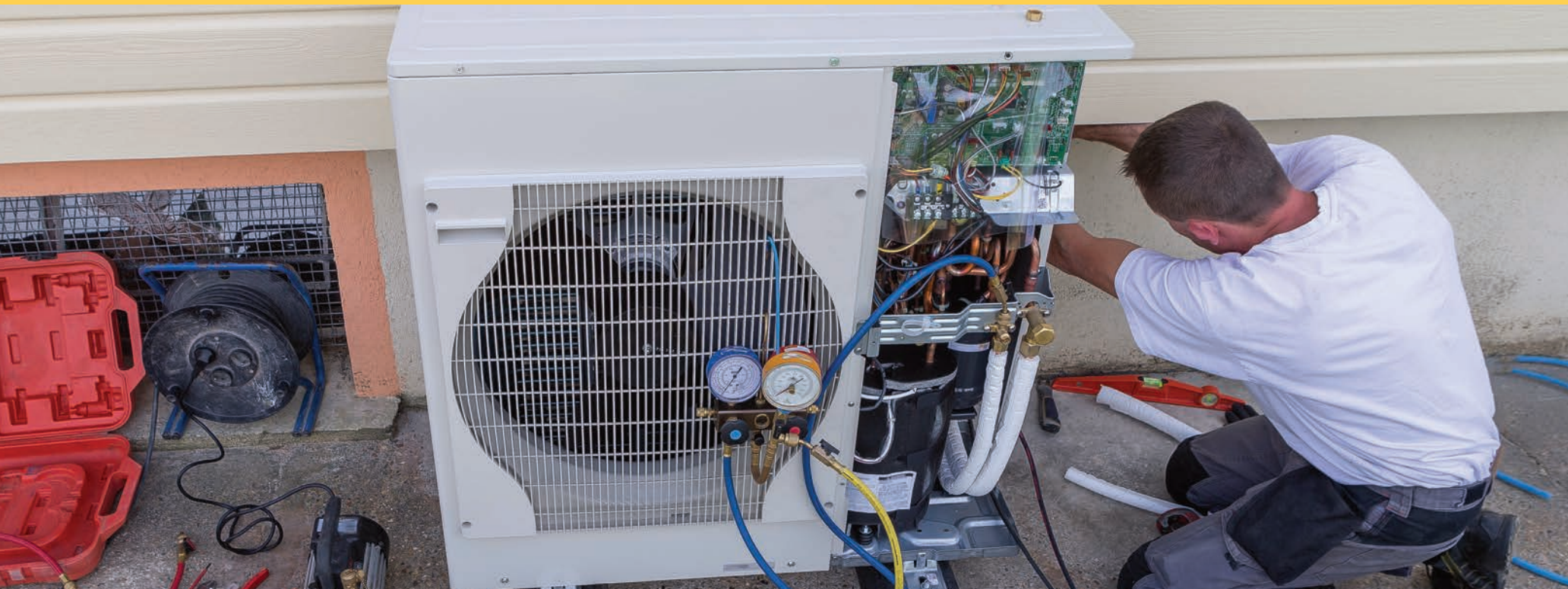
RIDGID, part of Emerson’s professional tools portfolio, introduces the SeeSnake® microReel™ APX™ to optimize inspections. Engineered with a lightweight, compact profile for easy portability, the microReel APX features bright LED lights with high color accuracy and auto-flip imagery delivering crisp, detailed images and ensuring upright viewing angles in a variety of pipe conditions. Paired with TruSense® technology, this tool delivers the industry’s best in-pipe image.

The microReel APX is the most

Continued on Page 18

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

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Variable Refrigerant Flow Commercial HVAC/R Systems - Design and Application

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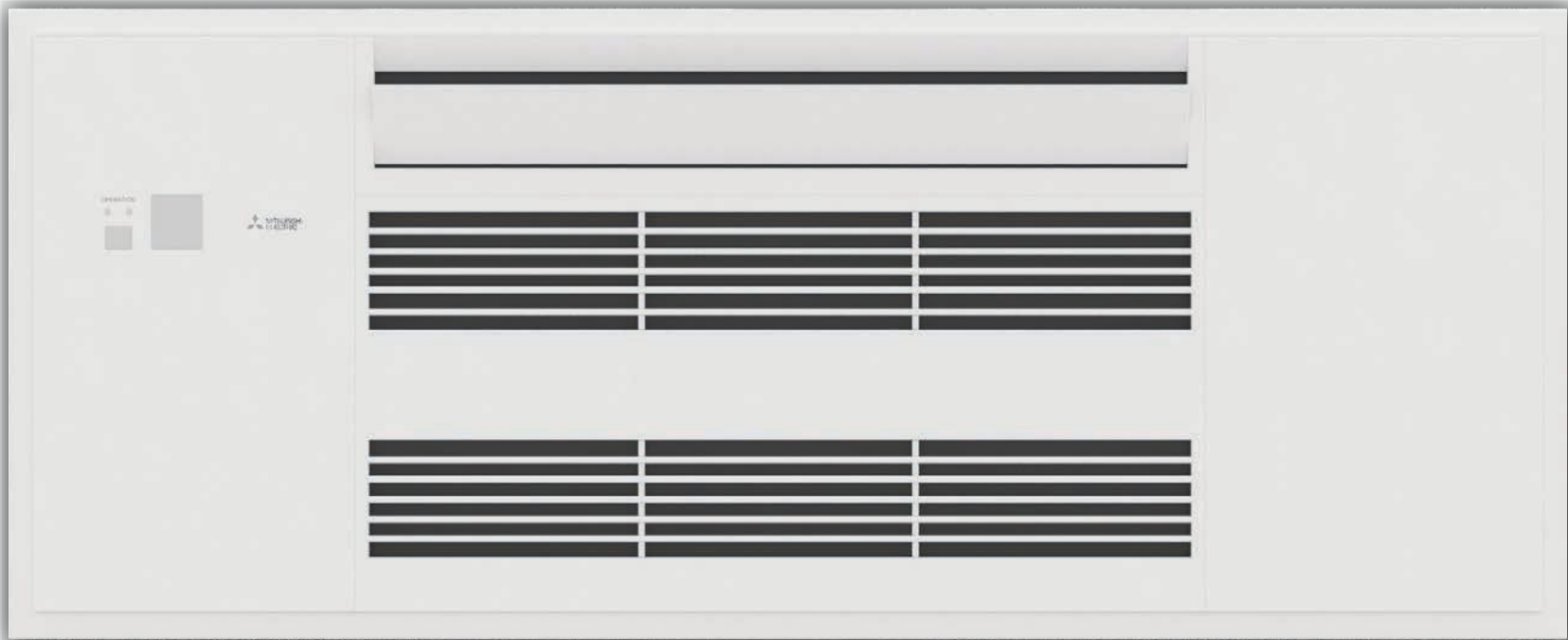
*Fee-based training

Programs are funded by California utility customers and administered by Southern California Edison under the auspices of the California Public Utilities Commission.

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Introducing the New EZ FIT® 6K BTU Ceiling Cassette

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



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

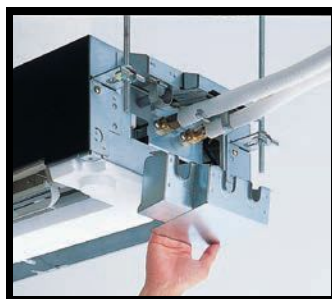
Compact Design

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



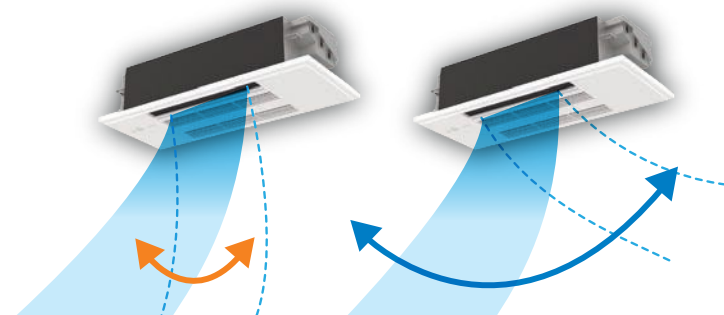
Serviceable from the Bottom

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



Auto Vane Controller

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

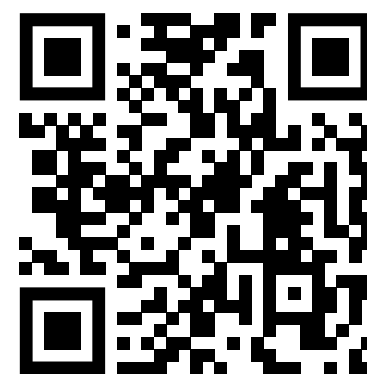




Key Features of the MLZ-KY06NA

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

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



Recruiting and Employee Retention

Residential HVAC growth comes through a systematic recruiting plan and effort.

By Lawrence Castillo
IHACI Board Member

One of the gripes that I hear most often from my contractor friends is that they “can’t find people.” Naturally, I want to let them know that their results are directly proportional to their recruiting efforts, which are typically the minimum.

Success in recruiting doesn’t happen accidentally. It has been achieved by many well-structured residential HVAC companies all over the nation because they have put importance upon it. As a contractor, you will succeed if you have a written plan in place, clear expectations of those involved, and accountability standards which are visited regularly.

The first place to start is to answer the question “who is in charge of recruiting for our company?”

I can tell you that this is a lesson that I learned the hard way over the course of my career. Early on, when I managed a smaller HVAC business, I thought that nobody in the building could do anything as well as I could. As a result, I took on every aspect of the operation, including recruiting. With everything on my plate, the reality was that recruiting never was going to get the attention that it deserved, and sourcing talent or interviewing candidates always took a back seat and were pushed off until tomorrow.

The moral to that story is that recruiting is a full-time job whether your HVAC business does \$1m or \$50m in annual revenue. If you don’t have someone in your building who is spending 40 hours a week sourcing talent, then you can expect to lose market share, and to always be in a position of

weakness when the unexpected happens to your staff.

So what should you do? You should develop a process and follow it daily. Follow these simple steps to change your fortunes, and to grow your business starting today:

1. Hire an In-House Recruiter

- This is the one position that any contractor serious about growth must make room for on their staff. It will cost you \$60,000, but that investment pays huge dividends.

- Your recruiter will source talent, communicate with potential candidates, conduct initial phone screenings, schedule interviews, follow up with candidates, and be the professional point of contact for all potential new hires.

- Your recruiter will host and attend job fairs, establish relationships with schools and professional organizations, and organize all efforts to fill open positions within the company.

- Your recruiter will work according to your written recruiting plan to meet all monthly and quarterly hiring goals.

2. Establish a Written Recruiting Plan

- Review your financials and determine your departmental hiring needs for 2023 to achieve your revenue goal.

- Establish a hiring plan and timeline on how to achieve your annual manpower budget.

- Calculate the number of interviews you need to hold each week to meet your new-hire targets.

- Set deadlines to ensure accountability for achieving goals.

- Choose which mediums you will use to source people.

- Determine a monthly recruiting budget.

- Calendar regular meetings to review staffing needs and changes.

3. Make Sure Your Online Presence is Attractive to Candidates

• If you are a 2-star or 3-star rated company, don’t expect top notch candidates to want to join you. If you aren’t treating your own customers well, why would a potential employee believe you would treat them well?

- You are competing against every other HVAC company for top talent. What makes your company different or special? What do you have to offer that will set you apart?

- Your website, online pictures, truck wrap, and social media channels are the story of your business. What kind of story are you telling your customers and potential new hires?

4. Have a Training Plan In Place for All New Employees

- Prior to any new employee starting, develop a written training plan for them. Organized, successful companies are well prepared to set a new hire up for success.

- Share the training plan with all who will participate in the training PRIOR to any new employees starting.

5. Develop an Employee Retention Program

- You have gone to so much expense and hard work to add a new employee. The next step is to make sure that you live up to your promises to them.

- Don’t allow your new hires to get lost in the shuffle. Have a schedule for regular check-ins to make sure that they don’t feel forgotten about.

- Calendar meetings with them at 30/60/90 days to stay in touch



Contractors often overlook the importance of proper recruiting of employees. Follow these tips and your business may change for the better.

with them.

- Their opinion of the business will be shaped by those around them. Make sure the people and influences around them are positive ones.

- Establish a plan to acknowledge and celebrate their early success.

6. Ask Your Own Employees for Referrals

- Each of our technicians have five to ten friends that work for other HVAC companies. Start there. They compare notes. They complain about the calls and their pay to each other. Leverage those relationships to quickly be able to reach experienced talent.

- Incentivize your employees. Provide a generous referral program which will make them want to pick up the phone and recruit.

7. Stay Ahead of Your Hiring Demand

- Always be recruiting. Just when you have reached your optimum staffing level, you will lose a critical employee to injury, illness, family trouble, relocation, or any number of reasons. That loss puts the business at a manpower deficit, so you must have meaningful backups within reach.

- Don’t just recruit to fill new positions, but inspect your current roster, and identify the bottom

10%. Actively look to exchange and upgrade talent throughout the operation.

- Do not recruit for an immediate need. Instead, recruit for future needs. If you are recruiting for immediate needs, your recruiting/hiring plan has not been well thought out.

Final Word:

The steps above are your key to generating the kind of growth that can double the size of your business. If you take this planning seriously, and maintain accountability for your plan, you will look back and laugh at the days when you would place a same day ad to fill a position which had just been vacated. It is time to act like a bigger business, if you want to be a bigger business.

Happy hunting!

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

Editorial Focus

Continued from Page 14

recent camera reel from RIDGID to offer TruSense technology to help plumbers better pinpoint problem areas in-pipe. It also comes with a built-in kickstand for in-field versatility with multiple configurations for optimal operation.

TruSense establishes a two-way datalink between the camera head and a connected RIDGID SeeSnake Wi-Fi-enabled monitor. With TruSense, advanced sensors on the camera head convey



information about the in-pipe environment, while the HDR image sensor expands the camera’s dynamic range, allowing a greater ratio of bright and dark areas to be displayed at the same time without reducing visibility. This delivers superior clarity and detail with fewer blown-out areas and sections of the

pipe that are too dark to see.

TiltSense™ measures the camera’s angle and, when connected to a SeeSnake series monitor, the camera can convey the camera’s degree of tilt on the monitor – giving professionals a useful indicator of the pitch of the camera in-pipe.

“The RIDGID SeeSnake micro-Reel APX is our latest and most portable camera reel to offer TruSense technology, giving plumbers the enhanced data capabilities they need to diagnose issues,” said Laura Wolverton, marketing director, underground technologies, RIDGID for Emerson. “RIDGID

has been a leader in diagnostics for over 25 years, making camera reels built to last no matter how harsh the jobsite environment.”

All RIDGID SeeSnake reels come with the RIDGID Full Life-time Warranty.

More information: www.RIDGID.com.

• • • • •

Rotobrush Air Duct Cleaner

Rotobrush International LLC, a global market leader in providing indoor air quality solutions, announces the launch of a completely new air duct cleaning machine. The



all new BrushBeast™ DR features next generation smart technology, more vacuum power, and more control while maintaining the same portability and ease of use that is known with the Rotobrush brand.

Continued on Page 19

Technical Training

Growing Green Technicians Part 161: Static Pressure, Blower Performance Data Charts

By Jim Johnson
Contributing Editor

In last month's segment of this series our discussion centered around the fundamental concept of TESP (Total External Static Pressure) in an air handling system, and the procedures technicians can follow to check overall pressure in the duct system, as well as isolate whether or not there may be an issue with specific components in the air flow system such as a filter or an evaporator coil that could be restricting air flow.

In this issue, we'll explore how one of the fundamental aspects of being a green technician relates to proper air flow in an HVACR system in regard to static pressure and, how a manufacturer's information in the form of a performance data chart such as the one shown in **Figure One** can be interpreted to understand the required CFM in a given system.

Reviewing the information shown here, you'll note that the air flow in CFM is shown on the left side of the chart. And, across the top, note that this chart can be used to show the external static pressure in a system in water column inches (in. w.g.) with either a vertical or horizontal unit. Other factors that are taken into consideration when evaluating the air flow in a system and comparing it with the manufacturer's data are the speed of the motor, and the operating voltage. For our example, we'll consider a high-speed operation, an operating voltage of 230 V of a vertical system and apply the generally accepted factor of 400 CFM per ton of refrigeration capacity.

Of course, not all systems will achieve optimum performance at that volume of air movement. In some cases where the humidity is low, the amount of air moving through the indoor coil can be increased to the neighborhood of 425 CFM, or, in a very high humidity situation, an air flow

of 375 CFM may be applicable. However, for our example, we'll stay with the 400 CFM standard, and our specific equipment will be a 2 ½ ton system, which means we will be listing the air flow at 1,000 CFM.

To begin, we'll consider the factors we'll plug in for our particular equipment.....2 ½ ton vertical system, 1,000 CFM, high speed, 230 V....and the first step is to locate the CFM in the left column. Reading to the right in the HI column, we find that the TESP in this situation should be 0.33.

Using the chart with the information plugged in tells us that this is the manufacturer's requirement and recommendation for this particular system, and with that information at hand, we can now consider that if we accomplished a test of the system for its TESP and found that it was 0.52. in. w.g., we would know that we have a problem that needs to be addressed.

With the test accomplished, we'll go back to the chart, and this time beginning with the 230 V HI column, and then reading left from the 0.52 reading, we find the listing in the CFM column to be 800, which would work out to 320 CFM per ton, a factor we arrive at through simple math:

$$800 \text{ CFM} \div 2.5 \text{ Tons} = 320 \text{ CFM}$$

What we've proven here is that the air flow in this system is 80 CFM per ton off the mark according to the manufacturer's performance data, and an evaluation of the system needs to be accomplished, so that the problem (or problems... perhaps an evaporator coil needs to be cleaned, or the filter being used is not the proper one for the equipment, or there are other factors to consider) can be corrected in order to ensure efficient operation of the air flow system.

our products. We want to design equipment that not only is portable and powerful, but also is easier to operate. We have accomplished that with the BrushBeast DR."

The BrushBeast DR (Drive) is equipped with smart, patent-pending technology. Featuring a newly designed direct drive

Editorial Focus

Continued from Page 18

"The revolutionary new technology that the BrushBeast DR features is taking air duct cleaning to the next level," said Bob Elledge, President and CEO of Rotobrush International. "Rotobrush is always looking to improve

Continued on Page 20

Air flow, cfm	External static pressure (in. w.g.)											
	Vertical*						Horizontal**					
	230 V			208 V			230 V			208 V		
	HI	MED	LO	HI	MED	LO	HI	MED	LO	HI	MED	LO
500						0.55						
550						0.51						0.60
600					0.67	0.41						0.58
650			0.54		0.60	0.23			0.60			0.51
700			0.53		0.52	0.00			0.57		0.51	0.47
750		0.48	0.44	0.65	0.41			0.54	0.53		0.48	0.35
800	0.52	0.47	0.27	0.59	0.30		0.60	0.52	0.46	0.59	0.41	0.05
850	0.50	0.41	0.00	0.52	0.10		0.57	0.47	0.32	0.55	0.32	
900	0.47	0.30		0.42	0.01		0.54	0.40	0.03	0.52	0.21	
950	0.41	0.15		0.29			0.49	0.31		0.45	0.02	
1000	0.33	0.00		0.14			0.41	0.19		0.33		
1050	0.22			0.00			0.32	0.04		0.19		
1100	0.10						0.23			0.00		
1150	0.00						0.12					
1200							0.02					

FIGURE 1



Now Available

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Low GWP Refrigerants
The Industry's Refrigerant Certification



Study Guide Available in the NATE Online Store

WWW.NATEX.ORG

Inaba Denko Expansion Reaches America

Inaba Denko, a trusted manufacturer of HVAC and refrigeration installation accessories formed in Japan over 85 years ago, has recently expanded its global reach by establishing Inaba Denko America Inc. based in Torrance, Calif. This accomplishment was celebrated with a grand opening ceremony held on January 18, with the presence of master distributors, employees, vendors and the team from Japan.

The new company focuses on marketing and sales operations to the North American markets with an aim to better serve their customers around the region.

Toshiaki Ishii, Executive Vice President of Inaba Denko America Inc., is enthusiastic about this expansion as it marks another milestone for the company's growth: "We are confident that our newest addition will play a pivotal role towards achieving continued success."

Drawing on over eight decades of experience, Inaba Denko has

steadily grown to become a world-class leader in the HVAC industry.

Established in Japan back 1938, the company now boasts operations spanning from Asia and Oceania through Europe and Africa all the way to North America. Committed to bringing its renowned quality products stateside, Inaba Denko is proudly leading innovation across multiple industries worldwide.

Highly respected in the HVAC Accessories industry, Inaba Denko provides premium products to their customers worldwide, with an impressive selection ranging from Lineset Covers to condensate drain systems and Linesets, setting itself apart as an innovator in air conditioning solutions.

Its brands below are recognized for delivering quality, precision and lasting durability:

- Slimduct SD is a mini-split industry pioneer and trusted by contractors for over 45 years to conceal, protect, and beautify exposed linesets.

- Slimduct RD lineset cover for VRV/VRF systems, provides an aesthetic and professional finish to any exposed rooftop line set layout. Fabricated from steel which is treated with a Zinc/Aluminum/Magnesium coating, it offers superior resistance over stainless steel even in highly corrosive atmospheres such as sea air.

- Slimduct PD commercial, PVC AC line set cover protects any surface mounted line set installation, and can also be used as a line set cover between the condenser and Slimduct RD system as a cover for VRV/VRF line sets and mini split line sets.

- DSH-UP drain-up hose kit makes it easy to install drain-up piping on indoor commercial air conditioner systems. It eliminates piecing together PVC with multiple adhesive connections, and the risk of water leakage from cement failure.

- PAIRCOIL is an all-in-one lineset with pre-paired and pre-insulated copper tubes. Offering



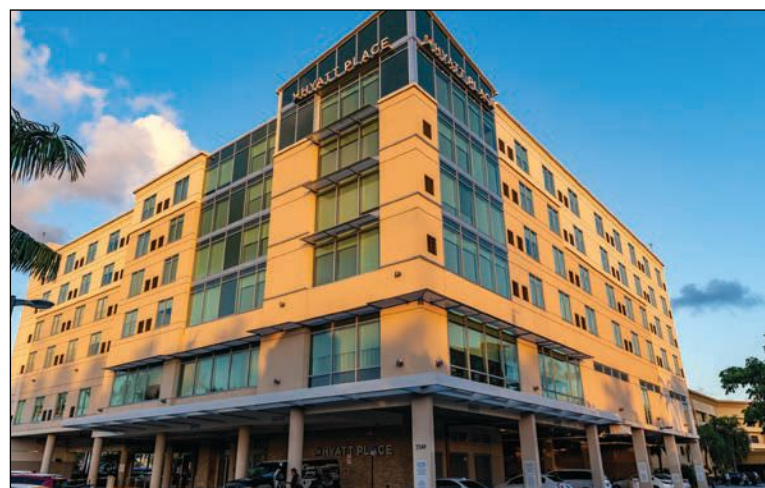
Inaba Denko executives and distributors (from left): Inaba Denki Sangyo Co., Ltd. President Seiichi Kita; COSCO INC. President Matthew Cosco; MarketAir, Inc. President/CEO Gerry Spanger; CSW Industrials, Inc. Chairman, CEO and President Joseph B. Armes; RectorSeal, LLC Senior Vice President of Sales and Marketing Jeff Underwood; and Inaba Denko America Inc. Executive Officer, and President and CEO Yutaka Katsurayama.

unmatched benefits for installers and homeowners.

With this expansion, Inaba Denko America Inc. will ensure hands-on local assistance and business continuity on a long-term basis. Moving forward with

our expertise, we strive for further achievements on product development, distribution and customer relations.

For more information about the latest news, visit www.inabadenko-america.com.



Exterior view of the Hyatt Place Miami.

Smoking Sensors Dramatically Upgrades Hotel's IAQ

Hyatt Place Miami Airport's management struggled to identify unauthorized smoking and enforce the hotel's no-smoking policies when guests complained of nearby smoking. The hotel's General Manager, Craig Haas, tapped FreshAir Sensor as a solution to these challenges. FreshAir's immediate detection and smoking alerts have resulted in enhanced no-smoking enforcement processes, reduced smoking violations, and streamlined smoking fee collection. Achieving these improvements, Haas notes that FreshAir's dedicated Client Experience team helped the hotel leverage the sensor technology to meet property's smoking detection goals.

Before installing FreshAir devices, hotel managers and housekeepers spent too much time trying to find the room where a guest was smoking. Learning of violations from guest complaints was ineffective. Now, hotel staff are able to pinpoint exactly where and when smoking

takes place thanks to FreshAir's 24x7 monitoring, immediate detection, and discreet alerts. Haas is pleased that improved enforcement has caused smoking rates to go down: "There is not as much smoking in the rooms. It is much more organized. It is a process, and managers are able to respond right away."

Because smoking is immediately detected with FreshAir's patented sensors, the hotel is able to prevent room damages from tobacco and marijuana smoke. Quickly stopping smoking means avoiding costly cleaning and remediation procedures. Hotel staff no longer have to take the room out of order for 24 hours and lose room revenue every time unauthorized smoking takes place. The Hyatt Place Miami Airport saves money that would have been spent on smoke-related damages and can now successfully charge the smoking fee for violations.

FreshAir's smoking reports and scientific proof of smoking have made charging smoking fees easy. Haas highlights, "The backup provided by FreshAir is able to settle any disputes." Each smoking alert comes with a timestamped chart of the incident, documenting and proving when smoking occurs. These reports can be downloaded, printed, and shared with guests during check-out and with credit card companies to successfully win chargebacks in the event of fee disputes.

As Hyatt Place Miami Airport's General Manager, Haas emphasizes how FreshAir smoking sensor technology and support staff dramatically upgraded their smoking prevention and policy enforcement. Since implementation, the hotel has been able to successfully charge smoking fees, safeguard against smoking-related cleaning costs, and ultimately meet the hotel's no-smoking goals.

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Editorial Focus

Continued from Page 19

system which has eliminated the need for pulleys. The brushless motor provides significantly higher efficiency, which also reduces costs and necessary labor for maintenance. It also helps to extend the life of the equipment and produces less heat

and noise. The DR features four speed rotation settings ranging from 250 RPM to 500 RPM as well as an auto stop feature. The auto-stop feature will reduce tension and extra wear on drive cables. The speed settings allow the user to have more control over the machine and the cleaning applications.

With the upgrade to a direct

drive motor, we were able to decrease the power used by the drive motor in exchange for a 20% increase in vacuum power. When compared to the original BrushBeast, the BrushBeast DR produces 20% more vacuum power and 105% increase compared to the Rotobrush aiR+.

More information: www.rotobrush.com.

Green Technologies

U.S. Green Building Council Announces Top 10 States for Green Building

Annual ranking recognizes commitment to LEED certification, sustainable communities.

The U.S. Green Building Council (USGBC) released its annual ranking of U.S. states leading the way on green building, with Massachusetts topping the list. The USGBC ranking is based on LEED-certified gross square footage per capita over the past year. The LEED rating system is a widely used green building program and was created by USGBC as a leadership standard defining best practices for healthy, high-performing green buildings.

“It was a strong year for

LEED certifications across the U.S. as companies and governments embrace LEED as a tool for meeting ESG goals and organizational commitments to climate action, occupant wellbeing and resource efficiency,” said Peter Templeton, USGBC president and CEO. “LEED buildings are environmentally friendly, cutting their emissions and waste, and use less energy and water. At the same time, they also help reduce operational and maintenance costs, contributing to the bottom line.”

The states following Massachusetts – where 96 buildings encompassing over 26 million square feet were LEED-certified in 2022, equating to nearly 3.7 LEED-certified square feet per resident

– were Illinois (3.47 square feet per capita), New York (3.17 square feet per capita), California (2.43 square feet per capita), and Maryland (2.39 square feet per capita).

As a federal territory, Washington D.C., does not appear in the official top 10 list of states, but it consistently leads the nation in LEED-certified square footage per capita, in part because of the federal government and District’s ongoing commitments to green building. In 2022, the nation’s capital certified over 46 square feet of space per resident across 115 green building projects.

In 2022, the top 10 states certified 1,225 projects and nearly 353 million gross square feet under LEED.



1222 22nd Street building in Washington, D.C. is certified LEED Gold.

Since it was first established in 2000, LEED’s metrics-based system has set the standard for healthy, resilient, green buildings. In 2022, USGBC surpassed 100,000 LEED-certified projects

globally, totaling more than 11 billion certified gross square feet.

Additional information on the 2022 rankings, along with a listing of notable projects, can be found at www.usgbc.org.

Industry News

Continued from Page 12

of Jim Isaac, who was such a strong champion of ACCA and the HVACR industry,” said Barton James, ACCA president and CEO. “Jim’s dedication to the industry and his community are unmatched. He was a leader, who used innovation and compassion to grow Isaac Heating and Air Conditioning to the strong company it is today. His presence continues to be seen in the business that he passed on to his children, who continue to grow his legacy today.”



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Troubleshooting

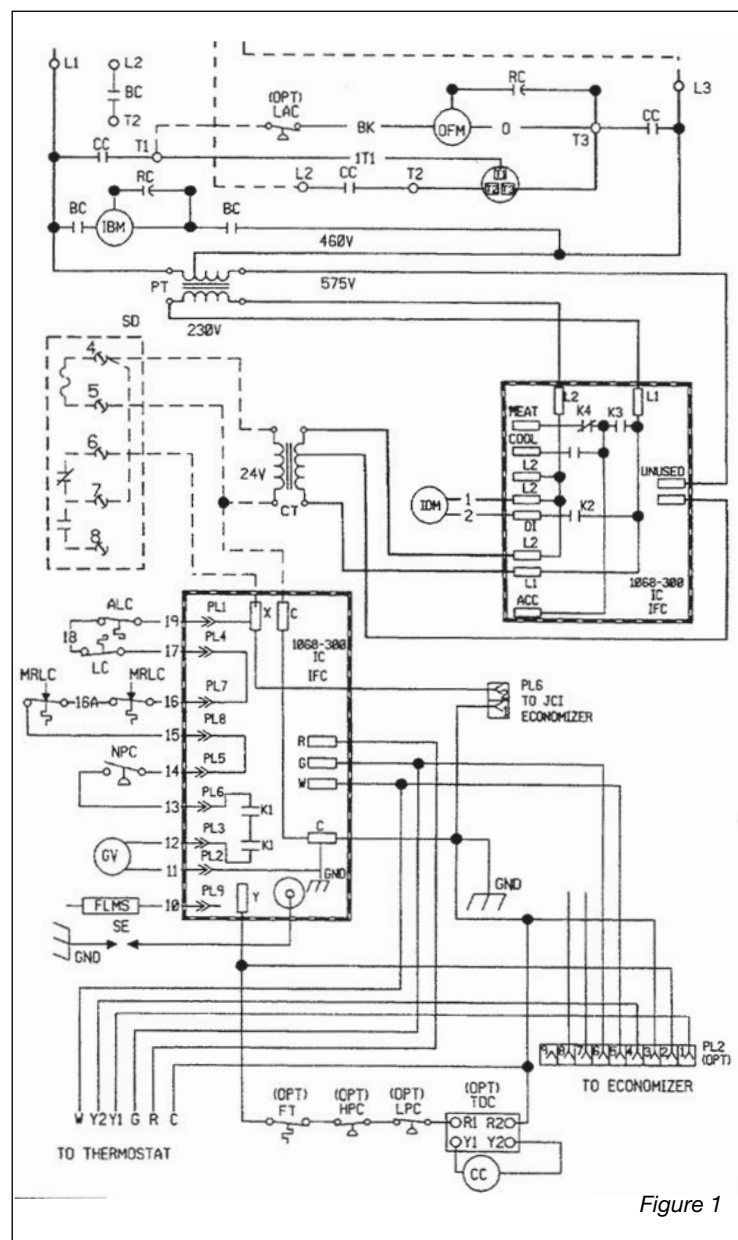


Figure 1

A Commercial Heating System That's Blowing Cold Air

By Jim Johnson
Contributing Editor

In this month's troubleshooting problem, you are responding to a customer's early morning call for service on a rooftop unit with a 100,000 BTU gas heating input, and their complaint is that they "have no heat at all." Upon your arrival, you begin your evaluation by determining two factors:

1. The control system is properly set to call for heat.
2. The three-phase power supply to the equipment (see **Figure One**) is OK.

In your next step, tracing the circuits on the diagram related to the heating mode of this equipment, you note that it is equipped with a smoke detector (SD), Auxiliary Limit Control (ALC), two Manual Reset Limit Controls (MRLC), and a Negative Pressure Control (NPC) in relation

to the operation of the Gas Valve (GV), which you note is a covered and sealed component with an accompanying wire harness.

After taking the appropriate steps to ensure that the IFC (Integrated Furnace Control) system will initiate a heating cycle with the IBM (Inducer Blower Motor), you perform a voltage check at wires #11 and #12 at the PL2 and PL3 connections on the IFC, and your reading is 24-volts.

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

If you believe you have the correct answer to one of Jim Johnson's Troubleshooting Problems, please submit it by email to Jim Johnson at icntroubleshooting@techtrain-assoc.com 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."

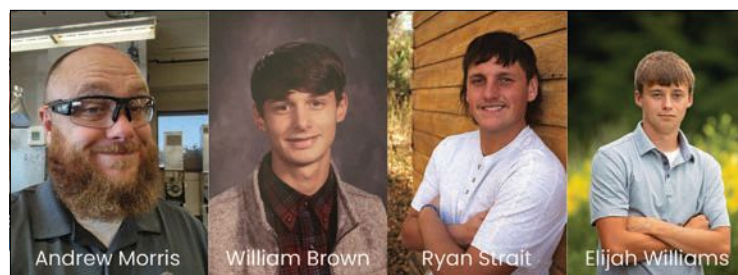
Answer to Last Month's Troubleshooting

We need to correct the wiring on the single pole contactor. When it was replaced, the L1 and L2 connections were reversed, resulting in the improper operation of the outdoor fan motor.

The winner of last month's Troubleshooting is:

David Newcomb

Trinity Warranty Solutions Announces 2023 Annual Scholarship Awards



Andrew Morris William Brown Ryan Strait Elijah Williams

TRINITY Warranty Solutions 2023 Scholarship Recipients

Trinity Warranty Solutions is pleased to announce the names of the four students who were awarded scholarships totaling \$8,000 as part of the company's annual scholarship program.

The following students each were awarded a \$2,000 scholarship: Elijah Williams, Ryan Strait, William Brown, and Andrew Morris.

"We are proud to present these talented individuals with a scholarship," said Trinity Warranty Solutions President Peter Dikeos, "The applications reviewed by our scholarship committee were outstanding and demonstrated each student's academic and community achievements. We are com-

mitted to supporting the HVAC and Refrigeration industries by helping students with part of their tuition costs."

Trinity Warranty is a recognized leader in Extended Service Agreement (ESA) products and services. The company provides risk management solutions to manufacturers, distributors, dealers and consumers in several industries, including HVAC/R/Plumbing, Solar-Assisted AC and LED Lighting. Trinity products lengthen the term of protection on a major purchase and have a significant positive impact on the sales process from Distributor, to Dealer, to the Consumer. To learn more, visit www.trinitywarranty.com.

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Researchers at Berkeley Lab Develop Cool New Method of Refrigeration

Researchers hope that ionocaloric cooling may someday replace high-GWP refrigerants.

Adding salt to a road before a winter storm changes when ice will form. Researchers at the Department of Energy's Lawrence Berkeley National Laboratory (Berkeley Lab) have applied this basic concept to develop a new method of heating and cooling. The technique, which they have named "ionocaloric cooling," is described in a paper published in the journal, *Science*.

Ionocaloric cooling takes advantage of how energy, or heat, is stored or released when a material changes phase – such as changing from solid ice to liquid water. Melting a material absorbs heat from the surroundings, while solidifying it releases heat. The ionocaloric cycle causes this phase and temperature change through the

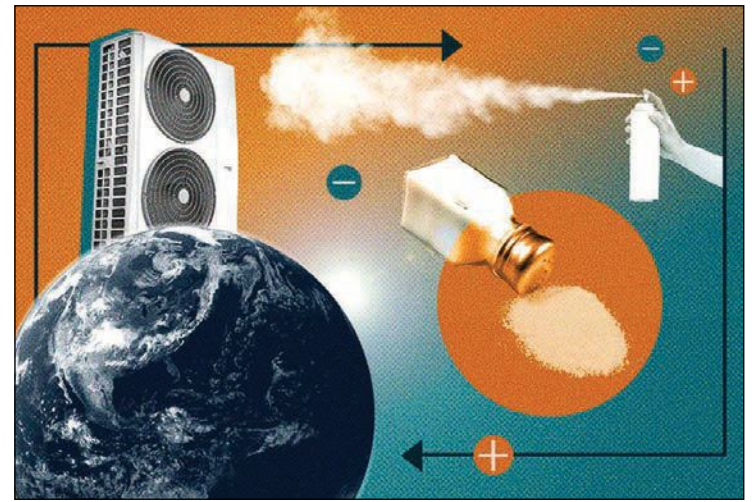
flow of ions (electrically charged atoms or molecules), which come from a salt.

Researchers hope that the method could one day provide efficient heating and cooling, which accounts for more than half of the energy used in homes, and help phase out current vapor compression systems, which use high-GWP refrigerants. Ionocaloric refrigeration would eliminate the risk of such gases escaping into the atmosphere by replacing them with solid and liquid components.

"The landscape of refrigerants is an unsolved problem: No one has successfully developed an alternative solution that makes stuff cold, works efficiently, is safe, and doesn't hurt the environment," said Drew Lilley, a graduate research assistant at Berkeley Lab and PhD candidate at UC Berkeley who led the study. "We think the ionocaloric cycle has the potential to meet all those goals if realized appropriately."

The new ionocaloric cycle joins several other kinds of "caloric" cooling in development. Those techniques use different methods – including magnetism, pressure, stretching, and electric fields – to manipulate solid materials so that they absorb or release heat. Ionocaloric cooling differs by using ions to drive solid-to-liquid phase changes. Using a liquid has the added benefit of making the material pumpable, making it easier to get heat in or out of the system – something solid-state cooling has struggled with.

In demonstrating the technique experimentally, Lilley used a salt made with iodine and sodium, alongside ethylene carbonate, a common organic solvent used in lithium-ion batteries. Running current through the system moves the ions, changing the material's melting point. When it melts, the material absorbs heat from the surroundings, and when the ions



Ionocaloric cooling takes advantage of how energy, or heat, is stored or released when a material changes phase.

are removed and the material solidifies, it gives heat back. The first experiment showed a temperature change of 25°C using less than one volt, a greater temperature lift than demonstrated by other caloric technologies.

The ionocaloric team is continuing work on prototypes to determine how the technique might scale to support large amounts of cooling, improve the amount of temperature change the system can support, and improve the efficiency.

Sonnhalter Receives Largest Donation in More than a Decade

Sonnhalter, a communications firm marketing to the professional tradesman in the construction, industrial and MRO markets, received more than \$40,000 worth of donations from Supply Smart to benefit the Greater Cleveland Habitat for Humanity.

Supply Smart is a nationwide distributor of residential plumbing and HVAC products for the professional. The donation consisted of more than 25 pallets of faucets, sinks, bath, drain and plumbing supplies.

"Even though our tool drive was officially over, we received a generous donation – the largest single donation we've received since we started our annual tool drives – from Supply Smart that traveled from Texas all the way to Cleveland," said Matt Sonnhalter, vision architect at Sonnhalter. "We are thankful for Supply Smart's donation of plumbing and HVAC products, and we know that they will go to great use for Habitat for Humanity."

"Supply Smart and Sonnhalter came together for a great cause to benefit the Greater Cleveland Habitat for Humanity," said Rafael De La Cruz, marketing strategy and content manager. "We were more than happy to donate more than 25 pallets of supplies and we're already looking forward to next year."

The items donated will benefit Greater Cleveland Habitat for

Humanity and be used on Habitat for Humanity projects or will be sold at one of the organization's ReStores.

For more information on Sonnhalter's Tool Drive to support Habitat for Humanity, visit: sonnhalter.com/tooldrive and to view the donation, visit: https://youtu.be/Tih2_C_RXcI

Established in 1976, Sonnhalter is the leading B2T marketing communications firm to companies that target professional tradesmen in construction, industrial and MRO markets. Sonnhalter is located in the historic Brownell Building in the heart of downtown Cleveland. Sonnhalter's brand identity highlights its expertise in marketing to the professional tradesmen. Its tagline, "Not Afraid To Get Our Hands Dirty," promotes the employees' willingness to roll up their sleeves and dig deep into clients' businesses, also, it refers to the market it targets: the tradesmen who work with – and dirty – their hands every day. Sonnhalter developed the acronym "B2T," which stands for "business-to-tradesmen" to capture the essence of its specialty. For more information, visit the company website at sonnhalter.com.

Greater Cleveland Habitat for Humanity engages people of all faiths to eliminate substandard housing. Cleveland Habitat was founded as a 501(c)(3) nonprofit organization in 1987. Since then,



(Above, top) A truck arrives at Supply Smart, where a staff member unloads a portion of the more than \$40,000 worth of donations for the Greater Cleveland Habitat for Humanity.



Cleveland Habitat has brought together community members, volunteers and sponsor groups to help more than 300 Habitat homeowners, including more than 1,000 children, have a safe and decent place to live. For more information on Great Cleveland Habitat for

Humanity, visit: <https://www.clevelandhabitat.org/>.

With five strategically located warehouses, Supply Smart is a nationwide distributor of residential plumbing and HVAC products for the professional. When the business was origi-

nally founded, it was their goal to deliver essential plumbing supplies to the contractor's doorstep, as quickly as possible. Over 18 years later, its mission is still the same, visit: <https://www.supplysmart.com/>.

Case Studies

Ontario Office Building Achieves Optimal Heating Performance with Upgraded Boiler System

A multi-story office building in Ontario, Canada sought to upgrade its two-stage boiler and replace its direct-fired water heater to eliminate short cycling, improve efficiency and provide heating redundancy. Four high-efficiency boilers and one stainless steel indirect-fired water heater from Weil-McLain Canada provided the remedy needed.

“The water heater was deteriorating rapidly, and the boiler was only running at about 85% efficiency,” said Darrel Gillespie, owner and president of Triple Tech Heating, Air Conditioning and Refrigeration, the HVAC contracting firm who handled the project.

Laying the Groundwork for Optimal Heating Efficiencies

Collaborating with Weil-McLain, North America’s leading boiler manufacturer, the Triple Tech team installed four floor-mounted Weil-McLain 399MBH Evergreen™ boilers complete with 24V low-water cutoffs (LWCO) and innovative control systems, as well as boiler circulator and system supply and outdoor sensors. Complementing the boiler system was the installation of an 85-gallon Aqua Plus® indirect-fired water heater with a digital thermostat and a temperature/pressure relief valve also from Weil-McLain Canada.

“The previous boiler, at two million BTUs, could only be serviced by a G1 tech, which are not readily available,” said Gillespie. “If the boiler went down, the building would be without heat; however, with four boilers that can be serviced by a G2 tech, if one needs to be repaired, three more will still run to ensure redundancy and back-up.”

Featuring 96.5% combustion efficiencies, the durable Evergreens are designed with cutting-edge technology, easy-to-setup controls and flexible functionality for multiple applications to properly match heating loads and contribute to energy savings. Easy to install, use and maintain, they are adaptable for most heating needs, including commercial or large residential applications, and for single or multi-boiler installations.

Additionally, the boilers feature the intuitive and user-friendly Unity™ control system with a built-in lead-lag rotate

sequencer that can be used to control various units in a multi-boiler system. The control allows minimum and maximum firing rates to be adjusted for different priorities, which allows contractors to individually customize boilers for each installation. For this installation, the domestic hot water (DHW) maximum firing rate was reduced to match the maximum input of the indirect tank at 190,000 BTUH.

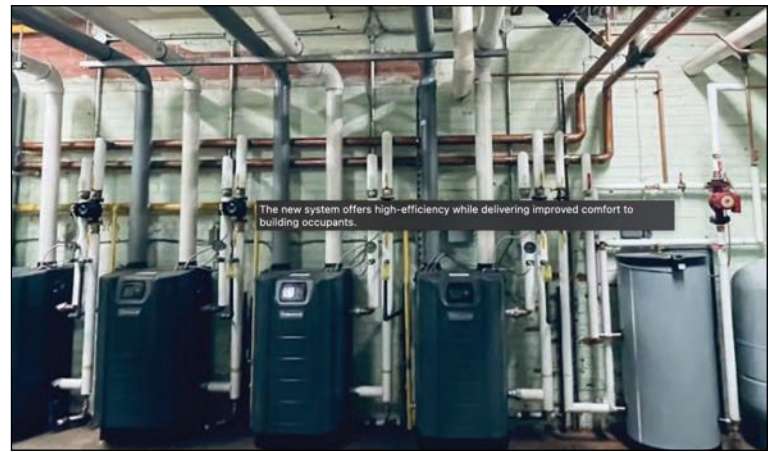
“One of the many features our installers like is that no matter the size of these boilers, they can be floor- or wall-mounted,” said Gillespie. “Some boilers in this size-range can only be wall-mounted, which can limit their placement in the room. Being able to install them on the floor helps us save on manpower and labor costs since multiple



The old boiler system.

technicians are not needed to mount them on the wall.”

Increasing Efficiency While Decreasing Fuel Consumption
To better generate DHW and



The new system offers high-efficiency while delivering improved comfort to building occupants.

reduce boiler fuel consumption, an 85-gallon Aqua Plus indirect-fired water heater was also installed. Featuring high output stainless

steel heat exchangers that deliver superior first hour ratings and

Continued on Page 31

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John Wentz
Got our DR last week! Way more suction and variable speed rotation, love it!

Nick Dear
We are Loving our New DR..great improvement for sure !

Brett McDaniel
This machine is awesome. The DR is next level



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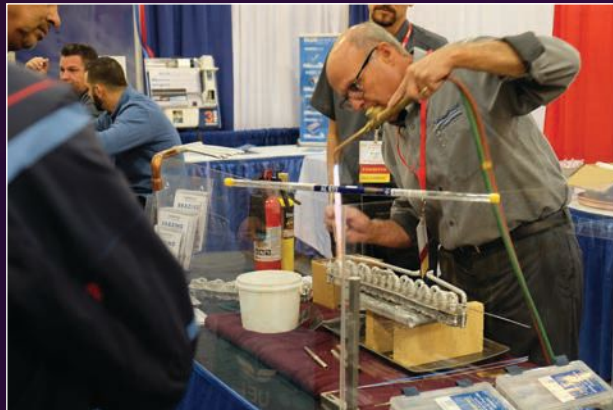
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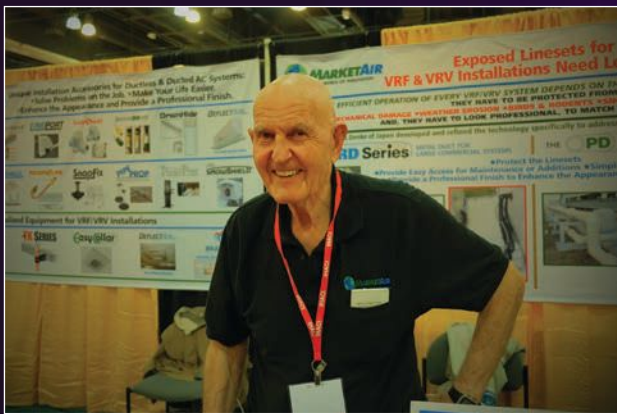
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The DENCO booths. DENCO is a professional manufacturer's representative sales agency in the HVAC/R markets of Southern California, Arizona, Hawaii and Las Vegas.



Tyler Tomlinson of the Esco Group.



Gerry Spanger of Marketair.



The Bosch booth (from left): James Italiano, Kell Christiansen, Jeff Craig, Nic Jones.



The GRG Dispenser booth: Shahay Dishekenian (left) and Nineli Sarkissian.



The IO HVAC Controls booth: Niles Mosher (left) and Kyle Sales.



Ramiro Perez of Paradise Chevrolet.



The Howard Industries booth (from left): Robert Birdwell, Justin Nelson, Russ Nutt, Genesis Rangel.

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Industry Events

NADCA to Host 34th Annual Meeting, Exposition in New Orleans March 27–29

The National Air Duct Cleaners Association (NADCA) – also known as the HVAC Inspection, Cleaning, and Restoration Association – announces that its 34th Annual Meeting & Exposition will take place March 27-29, 2023 at the Hilton Riverside in New Orleans, Louisiana.

The annual event will bring together a diverse group of professionals involved in the inspection, cleaning, and restoration of HVAC systems. With industry-specific certifications, educational sessions, and networking, the Annual Meeting is perfect for air systems cleaning specialists, mold remediators, HVAC inspectors, or anyone interested in the comprehensive field of HVAC system cleaning. Attendees will gain insights into emerging technologies, the latest trends, proven ways to build and grow duct cleaning businesses, and best practices based on current literature and evidence-based standards.

“This year’s program continues our focus on training and educa-

tion, with outstanding content for technicians and business owners,” said Jodi Araujo, CEM, NADCA’s Chief Executive Officer. “It’s important that HVAC professionals continue to learn and network with industry peers and learn best practices from industry experts. Attendees from both established air duct cleaning businesses and new companies entering the industry will have access to incredible educational sessions. No one offers better professional development and networking opportunities than NADCA.”

Educational session topics include:

- Healthy Buildings and Healthy People: The Importance of Indoor Air Quality
- How to Grow Residential HVAC Cleaning Businesses
- Improving Work Quality and Production Efficiency
- Emerging Technologies
- Using CVI certifications to Generate More Business
- Understanding Static Pressure
- Employee Hiring and Reten-

tion

“Attending the NADCA Annual Meeting and Exposition is one of the most convenient ways for technicians to earn Air Systems Cleaning Specialist (ASCS) or Certified Ventilation Inspector (CVI) certifications,” Araujo continued. “We offer the certification training courses and the opportunity to sit for the certification exams during the event. Plus, several of our educational sessions are eligible for continuing education credits necessary for certification renewal.”

Technicians seeking the Air Systems Cleaning Specialist (ASCS) or Certified Ventilation Inspector (CVI) certification will have the opportunity to participate in the pre-conference training courses on Monday, March 27, with exams for both certifications offered on Tuesday, March 28.

The conference will also feature educational sessions that provide attendees with the opportunity to gain continuing education credits (CECs) necessary for certification

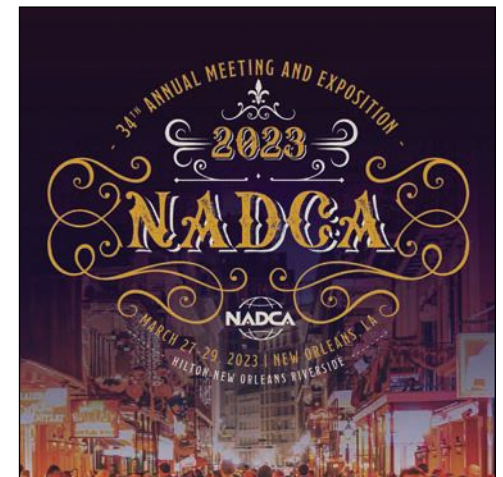
renewals.

In addition, the event will feature the always-popular exhibit hall, providing attendees with an up-close-and-personal view of new and innovative technology, equipment, and services available for the HVAC cleaning industry.

NADCA’s 2023 Annual Meeting and Exposition is scheduled for March 27-29.

To register or learn more about the event, including a detailed program agenda, visit <https://annualmeeting.nadca.com>.

The HVAC Inspection, Cleaning and Restoration Association was formed in 1989 as a non-profit association of companies engaged in the cleaning of HVAC systems. NADCA’s mission is to represent qualified companies engaged in the inspection, cleaning and restoration of HVAC systems, promote source removal



as the only acceptable method of cleaning, establish industry standards for the association, and assist NADCA members in providing high quality service to their customers.

With more than 1,400 members, NADCA is made up of a diverse group of HVAC industry professionals, including air systems cleaning specialists, mold remediators, and HVAC inspectors. To learn more about NADCA, visit www.nadca.com.

China’s HVAC Trade Fair to Return in May 2023

China’s international trade fair for heating, ventilation, air-conditioning, sanitation, and home comfort systems has confirmed the dates and venue for its 2023 edition, taking place from May 11–13 at the China International Exhibition Center (Shunyi Hall) in Beijing. Organized by Messe Frankfurt (Shanghai) Co. Ltd. and CIEC GL events (Beijing) International Exhibition Co. Ltd., the show will once again present fairgoers with trend-setting HVAC, plumbing, smart heating, and home comfort technologies and products in the Chinese and wider Asian markets. The upcoming edition will continue to hone in on the “energy,” “water,” and “life” themes, which are in line with China’s national development strategies. In total, the fair is expected to welcome over 1,300 exhibitors across 106,800 sqm of exhibition space.

The “carbon peak” and “carbon neutrality” policies highlighted in the Chinese government’s 14th Five-Year Plan underlines a commitment by the country to generate energy through reform and innovation. These new reforms offer strong prospects not only to China’s renewable energy and energy storage markets but also inherently changes China’s modern energy systems while bringing new opportunities to the HVAC industry, particularly for



Last year’s trade show in Beijing.

the heat pumps market. To adhere to the government’s initiatives and energy infrastructure optimisation targets, manufacturers are actively developing energy-efficient HVAC solutions, specifically refining heat pumps and revolutionary energy storage technologies to meet the stringent carbon emission regulations. By recognising the benefits in the efficiency and flexibility of heat pump technologies, paired with the central government’s goal to strengthen domestic capabilities in all core energy storage technologies, intelligent and green HVAC technologies will continue to be key development focuses for manufacturers.

Apart from the booming heat pump market in China, according to the 2022 China Heat Pump Industry Development Report by the Heat Pump Committee of China Energy Conservation Association,

China is currently the largest heat pump exporter in the world. In the first seven months of 2022, China’s exports of air source heat pumps increased by 63.7% year-on-year. A recent report titled the Future of Heat Pumps by International Energy Agency estimated by 2030, total sales of heat pumps in the EU will reach seven million units. With lucrative opportunities for domestic and overseas markets, renowned brands worldwide require an effective platform to spark new business opportunities.

Brands to participate in ISH China & CIHE 2023 include A.O Smith, ARCIO, BDR, Beiming Tianshi, DAB, Danfoss, Devotion, Dooch, GREE, Grundofs, Haier, Hailin, Kiturami, Koate, Leo, Micoe, Midea, New Energy, NORTIZ, OUTES, PHILIPS,

Continued on Page 30

Product of the Year

Continued from Page 1

the Expo, the Innovation Award winners celebration was held in Room C206 at 4:30 p.m. ASHRAE Society President-Elect Ginger Scoggins started off the gathering by handing out glass awards to the 10 winners, who then took individual group photos with Mark Stevens, show manager for the AHR Expo, and 2022-23 ASHRAE Society President Farooq Mehboob.

Each year, the money collected from entry fees for the Innovation Awards is given back to the industry in the form of investment into the local community and at the ceremony, Scoggins announced this year’s recipient. The Atlanta College and Career Academy’s (ACCA) HVACR program will use the funds – a check for \$25,000 – for necessary equipment, student certification, and other program enhancements that will help train the future workforce.

“On behalf of Atlanta public schools, we really appreciate the partnership,” said Dr. Tasharah Wilson, principal and CEO of ACCA,



at the gathering. “We serve all Atlanta public high school students, HVAC is one of our great pathways, and we really appreciate your investment in helping us to continue to prepare your future workforce.”

The ceremony ended with the presentation of a final award: Product of the Year. The Product of the Year is selected from one of the 10 Innovation Award winners, and this year’s prize went to **Cielo WiGle Inc.** for their Cielo Breez Max product. A winner in the Building Automation category of the awards, the Breez Max is a smart thermostat for mini-split, window, and portable air conditioners.

“[The award] means a lot to us. It’s a tribute to our engineers, the technology we’ve been working on, and gives a really great impetus towards innovation and better things that can add comfort, convenience, and the ultimate thing – a lot of energy savings,” commented Anees Jarral, co-founder and chief technology officer at Cielo.

2023 TRAINING

CALIFORNIA QUALITY INSTALLATION, QUALITY MAINTENANCE AND QUALITY S

SOCALGAS, DOWNEY

MARCH

Electrical Module (Webinar)

(Four-Night Class Cont. to April) Instructors: Mike Griffin / John Dalton
Wed., March 1 – Part 1
Thurs., March 2 – Part 2

APRIL

Electrical Module (Webinar)

(Four-Night Class Cont. from March) Instructors: Mike Griffin / John Dalton
Wed., April 5 – Part 3
Thurs., April 6 – Part 4

MAY

AC/HP Refrigeration Module

(Four-Night Class) Instructor: John Dalton
Wed., May 3 – Part 1
Thurs., May 4 – Part 2
Wed., May 24 – Part 3
Thurs., May 25 – Part 4

JUNE

Air Distribution Module

(Four-Night Class) Instructors: Mike Griffin / John Dalton
Wed., June 21 – Part 1
Thurs., June 22 – Part 2
Wed., June 28 – Part 3
Thurs., June 29 – Part 4

JULY

System Performance Module

(Four-Night Class Cont. to August) Instructors: Mike Griffin / John Dalton
Wed., July 26 – Part 1
Thurs., July 27 – Part 2

AUGUST

System Performance Module

(Four-Night Class Cont. from July) Instructors: Mike Griffin / John Dalton
Wed., Aug. 2 – Part 3
Thurs., Aug. 3 – Part 4

SEPTEMBER

NATE CORE & Gas Heating Training (Webinar)

(Four-Night Class) Instructors: Mike Griffin / John Dalton
Wed., Sept. 6 – Part 1
Thurs., Sept. 7 – Part 2
Wed., Sept. 13 – Part 3
Thurs., Sept. 14 – Part 4

OCTOBER

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

(Four-Night Class) Instructors: Mike Griffin / John Dalton
Wed., Oct. 4 – Part 1
Thurs., Oct. 5 – Part 2
Wed., Oct. 25 – Part 3
Thurs., Oct. 26 – Part 4
Sat., Oct. 28 - NATE Exam, 7:30 a.m.

SOUTHERN CALIFORNIA EDISON, IRWINDALE

MARCH

Air Distribution Module

(Four-Night Class) Instructors: Mike Griffin / John Dalton
Wed., March 8 – Part 1
Thurs., March 9 – Part 2
Wed., March 15 – Part 3
Thurs., March 16 – Part 4

APRIL

AC/HP Refrigeration Module

(Four-Night Class) Instructor: John Dalton
Wed., April 12 – Part 1
Thurs., April 13 – Part 2
Wed., April 19 – Part 3
Thurs., April 20 – Part 4

MAY

NATE CORE & Gas Heating Training

(Four-Night Class) Instructor: Mike Griffin
Wed., May 10 – Part 1
Thurs., May 11 – Part 2
Wed., May 17 – Part 3
Thurs., May 18 – Part 4

JUNE

NATE AC/HP Refrigeration & Air Distribution Training

(Four-Night Class) Instructor: John Dalton
Wed., May 31 – Part 1
Thurs., June 1 – Part 2
Wed., June 7 – Part 3
Thurs., June 8 – Part 4
Sat., June 10 - NATE Exam, 7:30 a.m.

SEPTEMBER

System Diagnostics Module

(Four-Night Class) Instructor: John Dalton
Wed., Sept. 20 – Part 1
Thurs., Sept. 21 – Part 2
Wed., Sept. 27 – Part 3
Thurs., Sept. 28 – Part 4

OCTOBER

Non-Res ATE Acceptance

(Two-Night Class) Instructors: Mike Griffin / John Dalton
Wed., Oct. 11 – Part 1
Thurs., Oct. 12 – Part 2

Non-Res ATT Acceptance

(Two-Night Class) Instructors: Mike Griffin / John Dalton
Wed., Oct. 18 – Part 1
Thurs., Oct. 19 – Part 2

NOVEMBER

System Performance Module

(Four-Night Class) Instructors: Mike Griffin / John Dalton
Wed., Nov. 1 – Part 1
Thurs., Nov. 2 – Part 2
Wed., Nov. 8 – Part 3
Thurs., Nov. 9 – Part 4

SOUTHERN CALIFORNIA EDISON, TULARE

MARCH

Boiler Module

(Two-Night Class) Instructor: John Dalton
Wed., March 8 – Part 1
Thurs., March 9 – Part 2

Chiller Module

(Two-Night Class) Instructor: John Dalton
Wed., March 22 – Part 1
Thurs., March 23 – Part 2

APRIL

Air Distribution Module

(Four-Night Class) Instructors: Mike Griffin/ Mitch Bailey
Wed., April 12 – Part 1
Thurs., April 13 – Part 2
Wed., April 19 – Part 3
Thurs., April 20 – Part 4

MAY

System Performance Module

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

JUNE

AC/HP Refrigeration Module

(Four-Night Class) Instructors: Mitch Bailey / TBA
Tues., June 6 – Part 1
Wed., June 7 – Part 2
Tues., June 13 – Part 3
Wed., June 14 – Part 4

SEPTEMBER

System Diagnostics Module

(Four-Night Class) Instructors: Mitch Bailey / TBA
Wed., Sept. 20 – Part 1
Thurs., Sept. 21 – Part 2
Wed., Sept. 27 – Part 3
Thurs., Sept. 28 – Part 4

OCTOBER

NATE CORE & Gas Heating Training

(Four-Night Class) Instructors: Mitch Bailey / TBA
Wed., Oct. 11 – Part 1
Thurs., Oct. 12 – Part 2
Wed., Oct. 18 – Part 3
Thurs., Oct. 19 – Part 4

NOVEMBER

NATE AC/HP Refrigeration & Air Distribution Training

(Four-Night Class) Instructors: Mitch Bailey / TBA
Wed., Nov. 1 – Part 1
Thurs., Nov. 2 – Part 2
Wed., Nov. 15 – Part 3
Thurs., Nov. 16 – Part 4
Sat., Nov. 18 - NATE Exam, 7:30 a.m.

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

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All In-Person classes subject to change based on I
Classes begin at 6:00 PM Pacific Time and class
Register at www.ihaci.org

CLASS SCHEDULE

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

SAN DIEGO GAS & ELECTRIC

MARCH

NATE HVAC/R New Hire Module (Webinar)

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

Mon., March 6 – Part 1

Tues., March 7 – Part 2

Mon., March 13 – Part 3

Tues., March 14 – Part 4

NATE HVAC/R Support Training Module (Webinar)

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

Mon., March 20 – Part 1

Tues., March 21 – Part 2

Mon., March 27 – Part 3

Tues., March 28 – Part 4

APRIL

Electrical Module (Webinar)

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

Mon., April 3 – Part 1

Tues., April 4 – Part 2

Mon., April 10 – Part 3

Tues., April 11 – Part 4

AC/HP Refrigeration Module (Webinar)

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

Mon., April 17 – Part 1

Tues., April 18 – Part 2

Mon., April 24 – Part 3

Tues., April 25 – Part 4

MAY

System Diagnostics Module (Webinar)

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

Mon., May 8 – Part 1

Thurs., May 9 – Part 2

Mon., May 15 – Part 3

Thurs., May 16 – Part 4

JUNE

Air Distribution Module (Webinar)

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

Mon., June 5 – Part 1

Tues., June 6 – Part 2

Mon., June 12 – Part 3

Tues., June 13 – Part 4

System Performance Module (Webinar)

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

Mon., June 19 – Part 1

Tues., June 20 – Part 2

Mon., June 26 – Part 3

Tues., June 27 – Part 4

JULY

Non-Res ATE Training (Webinar)

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

Wed., July 5 – Part 1

Thurs., July 6 – Part 2

Non-Res MATT Training (Webinar)

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

Wed., July 12 – Part 1

Thurs., July 13 – Part 2

Chiller Module (Webinar)

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

Wed., July 19 – Part 1

Thurs., July 20 – Part 2

AUGUST

Commercial Cooling Tower Module (Webinar)

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

Wed., Aug. 9 – Part 1

Thurs., Aug. 10 – Part 2

Boiler Module (Webinar)

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

Wed., Aug. 16 – Part 1

Thurs., Aug. 17 – Part 2

Commercial Refrigeration Module (Webinar)

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

Wed., Aug. 23 – Part 1

Thurs., Aug. 24 – Part 2

SEPTEMBER

Electrical Module (Webinar)

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

Mon., Sept. 11 – Part 1

Tues., Sept. 12 – Part 2

Mon., Sept. 18 – Part 3

Tues., Sept. 19 – Part 4

OCTOBER

System Diagnostics Module (Webinar)

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

Mon., Oct. 16 – Part 1

Tues., Oct. 17 – Part 2

Mon., Oct. 23 – Part 3

Tues., Oct. 24 – Part 4

NOVEMBER

NATE Core & Gas Heating Training (Webinar)

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

Mon., Nov. 13 – Part 1

Tues., Nov. 14 – Part 2

Mon., Nov. 20 – Part 3

Tues., Nov. 21 – Part 4

DECEMBER

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

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

Mon., Dec. 4 – Part 1

Tues., Dec. 5 – Part 2

Mon., Dec. 11 – Part 3

Tues., Dec. 12 – Part 4

PACIFIC GAS AND ELECTRIC COMPANY, STOCKTON

MARCH

NATE HVAC/R Support Training Module (Webinar)

(Four-Night Class) Instructor: Mitch Bailey

Wed., March 1 – Part 1

Thurs., March 2 – Part 2

Wed., March 8 – Part 3

Thurs., March 9 – Part 4

Air Distribution Module (Webinar)

(Four-Night Class) Instructor: Mitch Bailey

Wed., March 22 – Part 1

Thurs., March 23 – Part 2

Wed., March 29 – Part 3

Thurs., March 30 – Part 4

APRIL / MAY

AC/HP Refrigeration Module (Webinar)

(Four-Night Class) Instructor: Mitch Bailey

Wed., April 26 – Part 1

Thurs., April 27 – Part 2

Wed., May 3 – Part 3

Thurs., May 4 – Part 4

MAY

Electrical Module (Webinar)

(Four-Night Class) Instructor: Mitch Bailey

Wed., May 24 – Part 1

Thurs., May 25 – Part 2

Wed., May 31 – Part 3

Thurs., June 1 – Part 4

JUNE

System Performance Module (Webinar)

(Four-Night Class) Instructor: Mitch Bailey

Wed., June 21 – Part 1

Thurs., June 22 – Part 2

Wed., June 28 – Part 3

Thurs., June 29 – Part 4



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



Indoor People



Jeffrey M. Dice

The Winsupply Inc. Board of Directors has elected **Jeffrey M. Dice** as president of Winsupply Inc. effective March 1. Dice, currently the president of Winsupply Equity Group, will replace Winsupply Inc. President John McKenzie, who retired Feb. 28.

“For more than 18 years, Jeff Dice has been an essential, respected contributor to Winsupply’s success,” said Rick Schwartz, chairman of the board. “Jeff brings both depth and breadth of experience across all of Winsupply’s support services – plus a long list of continuous, positive results – to his new role of leading the entire Winsupply organization on its trajectory of growth.”

Dice joined Winsupply in 2004 as a regional financial officer for Winsupply Group Services - Dayton. Soon, he moved into internal audit and then into leadership roles: first for electronic data integration and then for acquisitions as a due diligence specialist. In 2011, he was named chief financial officer for Noland Company, Winsupply’s largest acquisition to date.

In 2016, he began leading more than 150 employees as senior vice president for Winsupply’s Shared and Advisory Services. As Winsup-

ply’s chief information officer from 2018 to 2020, he restructured Winsupply’s growing IT organization. Dice became Winsupply Equity Group president in 2020, accountable for shareholder relations, finance, risk, real estate, and acquisition assessments.

As president of Winsupply Inc., Dice will lead business strategy development and execution, and oversee the daily operation of the Winsupply organization.

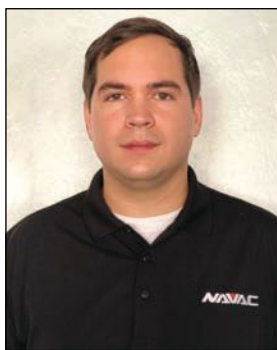
“Over the years, Jeff’s determined leadership, financial acumen, strong relationships, and strategic thinking have advanced Winsupply,” Schwartz said. “Because of his longtime experience, sustained results, and ability to champion Winsupply’s philosophy, business model, and key principles, he will move easily and quickly into his new role as president, providing the continuity of leadership necessary as we begin our 68th year of growth and success.”

Dice is a native Daytonian and lives in Centerville, Ohio.



NAVAC, the world’s largest supplier of HVAC vacuum pumps in addition to a wide array of tools, gauges, charging machines, recovery units and industry-specific items, has restructured its sales team to address its continuous market growth in both North and South America.

NAVAC now comprises two divisions – Northern and Southern – to better provide dedicated resources to each of the two continents’ defined markets, many of which have differing needs based largely on climate and economic



Keith Keller



Luis Ochoa

development.

NAVAC’s restructuring includes well-deserved promotions. For starters, former Eastern Regional Sales Manager **Luis Ochoa** is now Director of Sales, Northern Division. The promotion comes after Ochoa’s successes in establishing NAVAC in the Mid-Atlantic region, as well as his ability to further strengthen the company’s position throughout Metro New York and New England. In his new role, Ochoa will lead the company’s sales & marketing efforts for eastern and central markets in the US, as well as all of Canada.

Meanwhile, **Keith Keller** – who joined NAVAC in 2019 as US Southern Region Sales Manager – has been named Director of Sales,

Southern Division, which encompasses areas in the US South and West as well as the Caribbean and Central & South America. Among other accomplishments with NAVAC, Keller has been instrumental in cementing the company’s presence in Florida and Texas, two vital markets. In the process, he’s secured key national accounts and collaborated with other regional sales managers to expand NAVAC’s national footprint.

Moving forward, Ochoa and Keller will work closely together to attract and grow national accounts, prospect distributor buying groups, and partner with contractor associations. They also will collaborate on sales planning for future growth, creating effective sales programs and promotions, and implementing NAVAC’s strategies to its sales team and representative agencies.

“Our relatively rapid emergence in both North and South America is only possible thanks to our talented team members,” said Lintao Lu, President of NAVAC. “Luis and Keith’s well-deserved promotions showcase this, and the restructuring efforts they are leading place us firmly in position to continue expanding our market presence throughout each continent.”



Matthew McLaurin has joined Greenheck as Segment Manager for Critical Environments. In this new role, McLaurin will lead product management and engineering efforts in the Air Distribution business unit as Greenheck continues to develop its new line of grilles, registers, and diffus-



Matthew McLaurin

ers. McLaurin brings 14 years of HVAC industry experience to Greenheck having held progressive roles in engineering and product management with Titus in Plano, Texas where he managed marketing and product development for various product lines. McLaurin holds a Bachelor of Science degree in Mechanical Engineering from Texas Tech University and has served on several ASHRAE and AHRI technical committees.



NIBCO INC. has announced the promotion of **Mariza Gutierrez** to Reynosa plant manager.

In her new role, Gutierrez will continue the path to make NIBCO de Reynosa a great contributor to the company’s profitability through the plant’s competitive advantages of free trade agreements, skilled labor and high-quality products. She will report to Rudy Smith, senior plant manager. Gutierrez brings demonstrated knowledge, commitment and leadership to grow her new role at the Reynosa facility.

Gutierrez joined NIBCO in 1986 as an accounting manager. She has held several positions

China Trade Show

Continued from Page 27

Phnix, Ploumeters, Rinnai, Shengneng, Shiteng, Siemens, Tongfang, Unbeatable, Vanward, Wilo and others.

Specialized display areas, zones, and pavilions to be a major highlight at ISH China & CIHE

For over two decades, the fair’s thematic zones have become the key component to its success. The 2023 edition will again highlight the returning German Pavilion, Overseas Area, Water Pump Zone, Floor Heating and Cooling System Area, and Clean Energy District Heating Area. This year’s fair will also feature the new Minibox Service Area located in the Overseas Area. It is a business matching platform at ISH China & CIHE,

which aims to bridge domestic suppliers with overseas buyers who cannot physically attend the fair. Running throughout the full duration of the fair, the Minibox Service Area serves as a marketing tool for local suppliers to promote their latest innovations and technologies abroad.

With ISH China & CIHE’s mission to showcase some of the world’s most energy efficient HVAC solutions, the organizers are bringing this to the fore through their cooperation with Trade Commissioner Service (TCS) of the Embassy of Canada to China. Canada is renowned for their harsh winters, with many regions reaching subarctic climates. To combat the extreme climate, not too dissimilar to the winters in China, Canadian HVAC manufacturers will showcase the latest additive manufacturing technolo-

gies and applications in Canada. The Trade Commissioner Service (TCS) of the Embassy of Canada to China will group their members in a pavilion to expand their overseas market, and to boost the development for companies in the Chinese HVAC industry.

Concurrent events highlight opportunities for growth and innovation

As an integral part of ISH China & CIHE, a series of concurrent events will be held during the fair with many well-known HVAC industry experts present to exchange ideas and introduce technologies that will drive the industry forward. Responding to a series of national policy goals, specifically on peak carbon dioxide emissions and carbon neutrality, ISH China & CIHE will offer various summits, seminars and conferences, focusing

on the fair’s three core themes: “Energy” (the latest heating solutions paired with renewable energy sources), “Water” (water pumps, valves and fittings), and “Life” (home comfort products and solutions). These events will create a comprehensive platform for fairgoers to expand their knowledge through learning more about the latest industry trends. Some of the highlighted topics featured at the fair include:

- The China International HVAC Congress (iHVC);
- China Innovative Heating Products and Technologies;
- Fresh Air Systems;
- Home Comfort Intelligent Development Forum;
- Air Source Heat Pump Heating Technologies; and
- FCH Cooling & Heating System Technology Forum.

ISH China & CIHE will take

place from May 11–13 2023, once again at the China International Exhibition Center (Shunyi Hall) in Beijing. A further ISH event in China, ISH Shanghai & CIHE, will be held in Autumn of 2023 at the Shanghai New International Expo Centre. For more information about ISH China & CIHE and ISH Shanghai & CIHE, please visit www.ishc-cihe.hk.messefrankfurt.com.

ISH China & CIHE is organized by Messe Frankfurt (Shanghai) Co Ltd and CIEC GL events (Beijing) International Exhibition Co Ltd. It is headed by the biennial ISH event in Frankfurt, Germany, the world’s leading trade fair for HVAC + Water which will next take place from March 13–17 2023. For more information, please visit www.ish.messefrankfurt.com.

Indoor People

including finance manager, office manager, administrative manager and most recently senior administrative manager.

Gutierrez was recognized at NIBCO in 2014 with the Rex Martin award, given to recognize achievement in cost reduction, safety, or an increase in sales; and in 2021 the Alice A. Martin award, given to recognize women who demonstrate philanthropy,



Mariza Gutierrez

community service, mentorship, and support the development of other women.

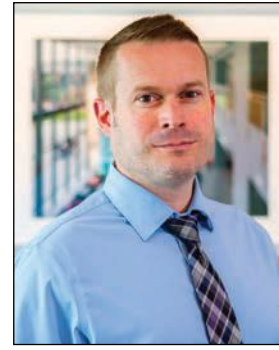
She holds a master's degree in Human Resources Development from Tamaulipas State University. Gutierrez also holds a bachelor's

degree in Accounting (CPA) from the Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM).



Mueller Associates, a mechanical, electrical, and plumbing engineering firm, announced that **Tom Syvertsen**, PE, LEED AP, has joined the firm's executive team as vice president. Syvertsen, who joined the Baltimore-based firm in 2002, has overseen many of the firm's largest and most complex projects in the cultural, institutional, and historic preservation markets.

As vice president, Syvertsen will oversee multidiscipline engineering



Tom Syvertsen

teams and take a hands-on role in various projects. His experience includes large-scale, multi-phase design projects such as the modernization of the Smithsonian's National Air and Space Museum in Washington, D.C.

GOLD KEY Contest Winner

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



SIRRUS CHANDLER
Denco

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

Case Studies

Continued from Page 25

recovery, the unit's compact size allows for easy installation in low ceiling basements or storage rooms and comes equipped with pre-installed thermostat connections for quick wiring. The digital thermostat ensures precise accuracy for optimal performance while a temperature/pressure relief valve automatically releases water if the pressure or temperature in the water tank exceeds safe levels.

"The ability to install smaller,

fully modulating condensing boilers and water heaters is key to energy savings and improved comfort level because modulating means less on/off cycling and consistent building temperatures," noted Gillespie. "The boilers and water heater will perform according to the building's heat loss in combination with outdoor temperatures."

Top-Notch Performance in One Unified System

The total system turn-down of 40 to 1 allowed the boilers to bet-

ter match the heating load of the building while the 96.5% thermal efficiency increased performance up to 20% and eliminated short cycling. Furthermore, using the new Evergreen boilers in conjunction with the Aqua Plus water heater is expected to provide a gas reduction of 25% over the previous direct-fired water heater. To maximize the usability of the space, the new equipment was installed along a perimeter wall instead of in the middle of the room.

"Combining the boilers and tank like we did for this project optimized performance greatly," said Gillespie. "With the boiler and indirect tank, we're getting top efficiency in one package."

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