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NEWS

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**IHACI'S 41st Annual
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**See PAGE 24 for Exhibitor
Descriptions**

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Industry News



Carlos Ruiz Joins IHACI as New Executive Director

Glendale, Calif. – Carlos Ruiz brings a vast knowledge of the HVAC industry and education training from a long career with SoCal Gas that spanned nearly 44 years. Half of his career was dedicated to developing and implementing utility-funded workforce education and residential energy efficiency programs. He also served as a utility representative on the IHACI Board of Directors for nearly 20 years supporting the needs of the HVAC industry through his utility programs. He holds a bachelor's degree in Business Management from the University of Redlands and in his spare time enjoys working on his classic automobiles and spending time with his family.

"I am committed in leading IHACI's continued support to meet the future needs of the HVAC industry as it faces many new challenges in our ever changing environment," Ruiz said.

CALIFORNIA



CoolSys Acquires T&O Refrigeration

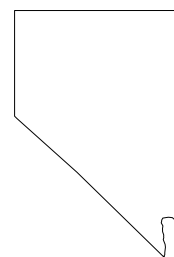
Brea, Calif. – CoolSys announced it has acquired T&O Refrigeration.

"As CoolSys continues to grow its market presence across the country, we're excited that T&O Refrigeration has joined the CoolSys family of companies,"

said Adam Coffey, CEO of CoolSys. "As a market leader in the Southeast region, T&O Refrigeration and its team have earned a great reputation built on high quality service, efficiency, excellent employee retention, and a focus on the customer experience, which are all priorities and values we share at CoolSys."

"Our goal has always been to provide service and installation that meet or exceed the customer's expectations while also providing the best value," said Steve Tibbetts, president at T&O Refrigeration. "We're looking forward to joining CoolSys, where our team can continue to service our customers with a focus on this goal, while bringing them new resources and capabilities from a national service provider."

NEVADA



HVAC Excellence 2022 Conference Set for Las Vegas

Las Vegas, Nev. – For those involved in training the current and future HVACR workforce, HVAC Excellence will be offering a hybrid education conference in 2022, providing face-to-face, in-person training, and exhibits, then continued learning online.

The face-to-face portion will be held March 21-23, 2022, at the South Point Hotel, in Las Vegas. At the South Point, attendees will meet with industry leaders, and exhibiting companies, that support HVACR education, who can assist them in improving their programs. Once the activities at the South Point conclude, attendees will continue their learning online.

R-410A Phasedown

R-410A and other HFC refrigerants will begin to be phased down on January 1, 2022. Similarly, equipment manufactured for HFC refriger-

Continued on Page 6



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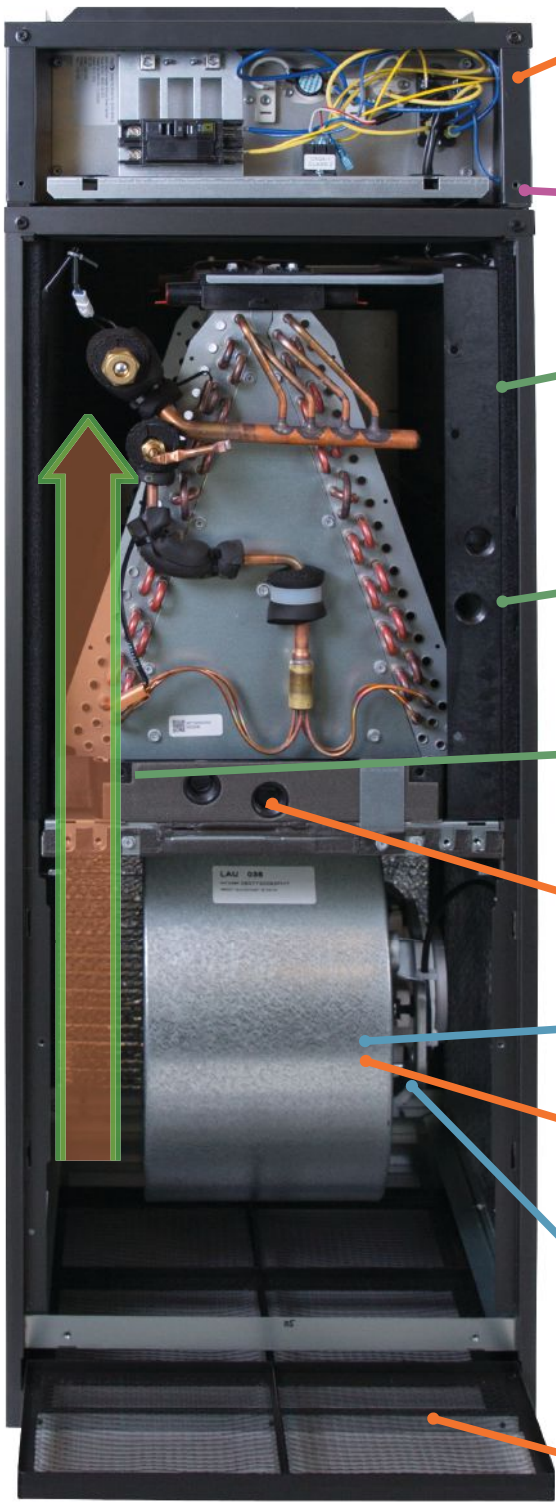
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Continued from Page 4

ants will be phased down as well. The industry will transition to new equipment, and new refrigerants, many of which are Low GWP Refrigerants. These refrigerants include A2Ls (slightly flammable), and A3s (flammable).

To address every step of the supply chain in the safe refrigerant transition to low global warming potential (GWP) refrigerants, AHRI formed a Safe Refrigerant Transition Task Force "SRTTF". The SRTTF comprises AHRI members and stakeholders who collaborated over the last several years to establish standards and best practices in the handling, storage, and transportation of Low GWP Refrigerants.

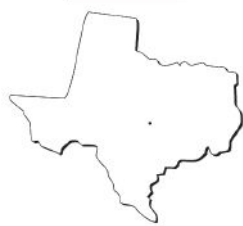
Now that the standards are set, members of the SRTTF will present

different aspects of the phasedown, and safety procedures during the HVAC Excellence Conference:

- "Codes and Standards Unlocked": Presented by Mary Koban and Helen Walter-Terrinoni of AHRI
- A2L Train the Trainer: Presented by: Jason Obrzut "CMHE" of ESCO Institute
- AIM Act Compliance on Refrigerants: Presented by: Tim Snyder of Daikin Americas
- Bring Us Your A2L Refrigerant Questions - Town Hall: Presented by: Charles Allgood Ph.D. of Chemours
- Choosing a Refrigerant: Presented by: Doug Starasinic of Honeywell

For a full list of sessions, presenters, exhibitors, and to register for the conference, visit <https://www.escogroup.org/hvac/nhetc/>.

TEXAS



M.B. Kiser Celebrates 75 Years in Dallas

Dallas, Texas – M.B. Kiser celebrated 75 Years in the Dallas/Fort Worth area in Texas.

A family-owned and operated business, M.B. Kiser began 75 years ago with one basic motivating factor, to make sure the people of the greater Dallas/Fort Worth area had reliable HVAC systems and, when problems did arise, to address those issues immediately.

Back when the owners of M.B. Kiser first launched their business, the world of heating and air conditioning was primarily about ensuring that homes and businesses remained temperate – even during the most searing summer days. And without question, they have helped area homeowners survive some of the more extreme climates Texas has to offer.

Today, 75 years later, things in the realm of HVAC systems have definitely evolved. From helping to maximize energy efficiency to utilizing the latest in repair and maintenance technology, heating and air conditioning companies have had to evolve right along with the equipment they install and service. The team of M.B. Kiser is certainly not one to sit idly by. Through the years, they've implemented cutting-edge measures and

innovation. Their technicians are regularly educated according to what is new and central when it comes to the latest in industry standards.

When asked what celebrating 75 years in business meant to them, the family behind M.B. Kiser's success essentially echoed one another in saying that they were thrilled to be able to continue doing what they love to do, and that is helping Texas families truly enjoy the comfort of their home...in an optimal temperature.

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RectorSeal, Air Solutions Form Partnership

Houston, Texas – RectorSeal announced that Air Solutions Partners (ASP) is now a RectorSeal HVAC representative for Texas and Oklahoma.

"ASP has always chosen to go to market with a select group of manufacturers," said Ted Parker, CEO of ASP. "It is intentional that we limited the lines we represent. That allows us to analyze, train, and drive lasting relationships with our customers. Representing RectorSeal fits perfectly with our company's core goals for outstanding customer service, support, and training."

"ASP's commitment to a high level of customer support and professionalism aligns perfectly with RectorSeal," said Jeff Underwood, senior vice president, Sales and Marketing at RectorSeal. "In effect, we both share a common goal. Our organizations limit their product lines to include only the most trusted, reliable, and dependable offerings."

.....

Trade Jobs Platform Launched

Fort Worth, Texas – Trade Jobs, a platform that connects employers and job seekers specific to the HVAC, electrical, and plumbing trades has launched.

Trade Jobs, a TechFW client, helps companies and potential employers find people with specific credentials for the trade. Companies post open job positions and are matched with job seekers' profiles that meet the required qualifications and experience level. Candidates can fill out a profile and search

Continued on Page 8



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Continued from Page 6

job opportunities at no cost.

"After spending more than \$3,000 for one month on a job board, a fortune to get mostly unqualified candidates, I decided this was taking up too much of my time and money, and there had to be a better way," said Jeff Bond, owner of AC Works 365. "But I couldn't find a better way, so I took a huge step outside of my comfort zone and started a tech company."

Bond expects to build out the go-to recruitment platform for multiple trades industries, with expansion possibilities in areas such as handymen, architects, and construction and janitorial.

"A good team member can help you grow your business to new heights," Bond said. "Trade Jobs can make that happen quicker."

Neighborly Named One of U.S. Fastest-Growing Companies

Waco, Texas – Neighborly announced its inclusion in the 2021 Inc. 5000. This is the third consecutive year that the company made the list.

"It is an incredible honor for Neighborly to be included once again alongside so many other admired organizations in the annual Inc. 5000," said Mike Bidwell, president and CEO of Neighborly. "Neighborly – like so many other companies – has overcome a variety of challenges within the last year, all while continuing to provide excellent customer experiences to homeowners in need of home services. As we continue pursuing

our vision to own the home through Neighborly's family of home service brands, recognition like this signifies that we're well on our way to making that vision a reality."

NATIONAL



Building Talent Foundation, Carrier Form Collaboration

Washington, D.C. – Building Talent Foundation announced a collaboration with Carrier.

Carrier joins BTF's 20 founding

partners, the Leading Builders of America (LBA) companies, as a scaling partner.

"Carrier's commitment to supporting and investing in the development of its people extends beyond their workforce, to all those who are yet to discover the vast opportunities in the heating, ventilation, and air conditioning sector," said Branka Minic, CEO of BTF. "Together, we will focus on promoting those opportunities and engaging youth and adult job seekers in exploring careers, skill-building, and meaningful employment."

Carrier will also be actively involved in BTF's HVAC Industry-Education Skilled Trades Council.

"There will be an estimated shortage of 400,000 HVAC technicians over the next decade," said Justin Keppy, president, NA

Residential & Light Commercial, Carrier. "Carrier is on a mission to empower the next generation of HVAC technicians. By joining forces with BTF, we can expand our efforts and impact the lives of people in our communities."

"It is an honor to welcome Justin Keppy and the Carrier team on behalf of Building Talent Foundation and the Leading Builders of America," said Sheryl Palmer, chairman of BTF and chairman and CEO of Taylor Morrison. "We're proud to have their support and look forward to working together to build a talented workforce and thriving communities across the US."

Rinnai Acquires Industrias MASS

Peachtree City, Ga. – Rinnai America Corporation announced the acquisition of Industrias MASS. This acquisition marks the first by Rinnai America Corporation and follows the launch of its Strategic Business Initiative announced earlier this year, meant to accelerate the company's presence via acquisitions and partnerships.

"Acquiring Industrias MASS is a critical step in our commitment to the Latin American market," said Frank Windsor, president of Rinnai America Corporation. "Our goal is to build upon the success of Industrias MASS by further investing in the company, its people, and products as a platform for growth. Through our shared pledge to innovation, as well as a complementary set of products, we'll fuel growth while also delivering on our brand promise of creating a healthier way of living."

Rinnai America Corporation has named Victor Molgado as its first Mexico general manager. Molgado has more than 25 years of experience in local, regional, and international manufacturing operations and was most recently the general manager for a large joint venture institution in Mexico.

"I'm excited about the opportunity to accelerate Rinnai's expansion in Mexico in partnership with Industrias MASS," Molgado said. "The combination of Industrias MASS' market dominance and Rinnai's technology and global

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WindFree™* Products:



WindFree™* Pro

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WindFree™* 4-Way Cassette

- Available capacities: 6K, 9K, 12K, 18K, 24K, 30K, 36K, and 48K Btu/h
- Independent louver control, the four louver blades can be individually set at the same or different angles within a 32-65° range.
- All internal components and field wiring connections are accessible from the bottom of the unit.
- The WindFree™* fascia panel includes a humidity sensor to prevent condensation by restricting WindFree™* operation in high humidity conditions.
- Optional Motion Detection Sensor (MDS) (sensor sold separately)



WindFree™* Mini 4-Way Cassette

- Available capacities: 5K, 7K, 9K, 12K, 18K, and 20K Btu/h
- The WindFree™* Mini 4-Way Cassette's fascia panel is designed to fit in a standard 2x2 ft. ceiling grid without interfering with adjacent ceiling tiles, lights, or sprinkler systems.
- All internal components and field wiring connections are accessible from the bottom of the unit.
- The WindFree™* fascia panel includes a humidity sensor to prevent condensation by restricting WindFree™* operation in high humidity conditions.
- Optional Motion Detection Sensor (MDS) (sensor sold separately)



WindFree™* 1-Way Cassette

- Available capacities: 7K, 9K, and 12K Btu/h
- Blade angles can move from 30-80° angles to reach every corner of the room.
- All internal components and field wiring connections are accessible from the bottom of the unit.
- The WindFree™* fascia panel includes a humidity sensor to prevent condensation by restricting WindFree™* operation in high humidity conditions.

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Continued from Page 8

market leadership unlock great potential for the Mexican market and is the clear choice to accelerate the company's growth strategy throughout Latin America."

"The experienced team at Industrias MASS, as well as the in-facility leadership under Victor's direction, are critical parts of our strategy to capture the growth opportunities we see in the market," added Windsor.

enVerid Air Purifier Added to Trane IAQ Solutions Portfolio

Westwood, Mass. – enVerid Systems announced that its enVerid Air Purifier will be sold by Trane

Technologies as part of Trane's Wellsphere Indoor Environmental Quality (IEQ) solutions portfolio. enVerid's ceiling-mounted HEPA air filtration units will be available from Trane, starting immediately across the United States and Canada.

"As part of Trane's holistic approach to indoor environmental quality, we offer our customers effective solutions that optimize indoor environments and help create healthier, more comfortable spaces," said Scott Huffmaster, sales leader, Healthy Spaces, Trane. "We are pleased to broaden our portfolio of air cleaning solutions with enVerid's robust in-room air purifier. The enVerid Air Purifier aligns with ASHRAE and CDC recommendations with its HEPA filtration and in-unit UV technology. It's a category leader for a number of



THE ENVERID SYSTEMS AIR PURIFIER SET UP IN A CLASSROOM.

reasons; it is commercial grade, specifiable, and more importantly, its ceiling-mounted design offers optimal airflow, quiet operation, and a more permanent solution."

"We are excited that our enVerid Air Purifier will be offered by industry leader Trane as part of its innovative Wellsphere initiative," said Christian Weeks, CEO of enVerid Systems. "Building operators want proven, durable indoor air quality solutions that can address concerns

about mitigating COVID-19 transmission immediately and can be utilized long-term to filter out other harmful particulates, including wildfire smoke, pollution, and allergens. Our commercial-strength, ceiling-mounted solution helps capture bioaerosols and substantially reduces the noise issues and tripping hazards associated with floor-level portable HEPA products."

"With respect to air cleaners for airborne pathogens, there is a very clear hierarchy of performance," said Raefer Wallis, global indoor air quality expert and Founder of RESET. "At the very top, we find ceiling-mounted filtration systems that allow for a very high level of control in specific areas because they are ducted and unobstructed by objects in a room. This is extremely important for issues like

COVID-19, where aerosolized viruses can be reduced at the source."

Field Controls Launches New HVAC Contractor Program

Kinston, N.C. – Field Controls announced the launch of its new Healthy Home System Contractor Program, which is a partnership between HVAC contractors, distributors, and Field Controls. The program encourages and incentivizes HVAC contractors who offer Field Controls Healthy Home System products to improve air quality in their customer's homes.

"Homeowners today have a heightened awareness of indoor air quality and are truly interested in improving their home's air," said president of Field Controls, Patrick Holleran. "Recommendations from the CDC and EPA encourage a layered approach inclusive of filtration and UVGI technology within the HVAC system. Our Healthy Home System encapsulates these recommended technologies into products that are installed in the HVAC system. The net result is a whole house solution delivering air quality throughout the home."

HVAC contractors that join the Healthy Home System Contractor Program will receive free training on Field Controls indoor air quality products and how to best diagnose the issues and offer these solutions to their customers.

Milwaukee Tool Expands in Mississippi

Milwaukee, Wisc. – Milwaukee Tool will expand its footprint in the United States with the announcement of a new manufacturing facility in Clinton, Miss. Anticipated to open in November, this new facility will accommodate increased capacity for the company's growing business. The project is a more than \$7 million corporate investment and is part of the company's recent commitment to creating 1,200 jobs in Mississippi.

"At the core of everything we do at Milwaukee Tool is our dedication to delivering



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Thurs., Oct. 28 – Part 4

NOVEMBER



Webinar

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

Instructors: Mitch Bailey / TBA

Wed., Nov. 3 – Part 1

Thurs., Nov. 4 – Part 2

Wed., Nov. 10 – Part 3

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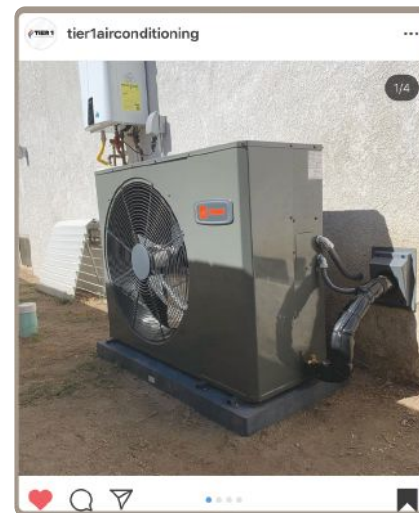
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Continued from Page 10

solutions that drive enhanced safety and productivity for our users,” said Steve Richman, Milwaukee Tool Group president. “The new Clinton facility, as well as our ongoing investments in U.S. operations and manufacturing, are critical to ensuring we can continuously deliver this innovation to our end users and distribution partners with speed and agility.”

Milwaukee will invest more than \$7 million to establish the new 357,000 square-foot facility, which will act as an expansion of the company’s current facility in Jackson, Miss. During the last decade, the company has grown their employee

headcount in the state from 526 in 2010, to more than 3,659 in 2021.

Pure Air Ranks in Top 50 Fastest Growing Companies

Clearwater, Fla. – Tampa Bay Business Journal named Pure Air Control Services, headquartered in Clearwater, Florida, to its Fast 50 list this year, making it among the 50 fastest growing companies in the greater Tampa Bay market area for 2021.

“We are grateful to be recognized as one of the fastest growing companies in Tampa Bay,”

said Alan Wozniak, vice president of Pure Air Control Services. “I’m very proud of our organization and how hard we’ve worked to achieve this growth. We’re also grateful for our customers – commercial property owners – who value our rigorous, scientific approach to indoor air quality.”

The Tampa Bay Business Journal recognized Pure Air Control Services for the growth it achieved in the two-year period from 2018 to 2020 as measured in annual revenue. The company’s 2020 revenue was \$9,800,000 or 87.5% greater than 2018, placing it no. 27 out of 50 companies the Tampa Bay Business Journal recognized on its Fast 50 list.

Pure Air Control Services also was named this year to Inc. 5000 Regionals: Florida list. It was recognized as the no. 1 fastest growing environmental firm and no. 97 overall.

RLS Announces Major Expansion

St. Louis, Mo. – RLS LLC has announced it will be moving into a new 80,000-square-foot multipurpose facility in St. Louis, Missouri, which will serve as its corporate headquarters and will include a manufacturing plant, training center, and showroom.

RLS will be relocating manufacturing from Shelbina, Missouri, where it has been sharing a plant with its sister company, Cerro Flow Products. Both are part of the Plumbing and Refrigeration sector of Marmon Holdings, a Berkshire Hathaway company. All RLS operations are planned to be consolidated into the new building by the end of 2021.

“We’re very excited to have manufacturing, office staff, and training all under one roof,” said Paul Schubert, president of RLS. “The larger, upgraded facility will significantly increase our production capacity to meet the growing demand for our products. And the new training center will allow us to regularly educate HVACR contractors and distributors on our patented press technology, which is easily identified by our unique double circular press and flares.”

“As more and more contractors discover the many benefits of using press fittings over the traditional brazing process, they continue to choose the time-tested and field-proven technology provided by RLS,” said Schubert. “As a result, we are continuing to invest in the facilities, equipment, and people needed to meet demand.”



AN ARTIST RENDERING OF RLS LLC'S 80,000-SQUARE-FOOT MULTIPURPOSE FACILITY IN ST. LOUIS.

SEER Group LLC Acquires Columbia NW Heating & AC

Redmond, Wash. – The SEER Group LLC announced its sixteenth acquisition, Columbia NW Heating & Air Conditioning. This is the third acquisition for The SEER Group LLC in Oregon after its acquisition of Specialty Heating & Cooling and Climate Control in 2019.

“We are delighted to be welcoming the Columbia NW team into our SEER Group family and Brian as our newest partner,” said Darrin Erdahl, CEO and founder of The SEER Group LLC. “This acquisition reinforces our commitment to growing our footprint in Oregon while supporting our national growth plan.”

“Columbia NW has become a market leader by demonstrating a commitment to taking exceptional care of their team members and their customers for over thirty years,” said Eric Beardemphl, president of The SEER Group LLC and partner. “We are thrilled to have them join us, as their culture is a perfect fit with our group.”

“I’m very excited to see what the future holds,” said Brian Sofich, partner and general manager. “Having an opportunity to join a top team like the SEER Group, with all of their support, I think will be great in helping us reach our goals and continue to serve our team members and customers for years to come.”

“We are very excited to have Columbia NW as a part of The SEER Group of companies in Oregon,” said Sarah and Cory Streeter, partners and co-owners of Specialty Heating & Cooling. “Brian and his team at Columbia NW are well respected in the community; their business practices and commitment to customer excellence make them a great partner. We look forward to learning and partnering with them to continue to grow and expand.”

Mitsubishi Electric Trane HVAC US Donates to Children's Center

Suwanee, Ga. – Mitsubishi Electric Trane HVAC US (METUS), a leading supplier of Ductless and Ducted Mini-split and Variable Refrigerant Flow (VRF) heat-pump and air-conditioning systems, has donated heating and cooling systems to the Children's Grief Center and Grief Resource Center of New Mexico, a non-profit organization committed to addressing the challenges children, adults and families face following the death of a loved one.

Children's Grief Center needed a larger facility to offer grief support services to a growing number of families. The Albuquerque, New Mexico building purchased for the organization's expansion required new heating and cooling equipment. Mitsubishi Electric Trane HVAC US was connected with the group and offered to supply a CITY MULTI® R2-Series VRF zoning system for the facility. The donated Mitsubishi Electric equipment includes:

- (4) Ceiling Concealed Indoor Units (PEFY-P12NMSU-ER2, PEFY-P15NMSU-ER2 and PEFY-P18NMSU-ER2)
- (2) 4-way Cassette Indoor Units (PLFY-P15NFMU-E)
- (2) Modular Outdoor Units (PURY-P72TMU-A)
- (1) Grille (SLP-18FAU)

“We’re incredibly grateful for the donations and partnerships that have helped make our dream of a larger facility a reality,” says Jade



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Richardson Bock, executive director, Children's Grief Center and Grief Resource Center. "The donation from Mitsubishi Electric will allow us to provide a comfortable environment for our families to gather and learn to heal from the loss of a loved one."

"The center has such an important mission," says Sandra Parr, regional marketing manager, Mitsubishi Electric Trane HVAC US. "We're proud to support their efforts and help create a more comfortable setting for community members navigating grief."

Since 2001, Children's Grief Center's mission has been to provide a safe and supportive environment where young people and their caregivers can share their feelings and experiences while grieving a death. In 2020, they merged with the Grief Resource Center, providing grief support services for adults.

As a new, joint organization, Children's Grief Center and Grief Resource Center moved to its new location on December 28, 2020. The larger facility is currently under renovation, projected to be completed by fall 2021.

For more information about Mitsubishi Electric Trane HVAC US, visit www.metahvac.com.

XOi and Nexstar Network Form Partnership

Nashville, Tenn. – XOi Technologies announced a partnership with Nexstar Network.

The partnership will provide education, coaching, documents, and technical manuals directly to field service technicians through XOi's Vision app.

"XOi has demonstrated that they're devoted to arming technicians with the tools and data insights needed to bring training, knowledge, and expertise to every jobsite," said Julian Scadden, president and CEO of Nexstar Network. "As we look for innovative ways to solve the trades gap and improve technician training throughout the MEP industry, the need for technology cannot be ignored. This partnership will put Nexstar's professional training directly into the hands of the onsite tech at the moment he needs the expertise."

"In today's economic climate, contractors are looking for ways

to assist their current labor market by bringing the skill and knowledge of their most experienced technicians to the jobsite through remote video support to reduce the need to roll a second truck," said Aaron Salow, XOi founder and CEO. "By marrying Nexstar's proven training and growth programs with XOi's patented technology, we will empower technicians with the tools, data, and resources needed to solve the industry's greatest challenge – the skilled trades gap."

Johnson Controls-Hitachi Expands No. America Presence

Milwaukee, Wisc. – Johnson Controls-Hitachi announced the addition of five regional companies to its roster of North American distributors for the Hitachi Variable Refrigerant Flow (VRF) systems and SmartFlex mini-split systems.

The new distributors are:

Johnstone Supply of Waltham, Massachusetts, serving Massachusetts and New Hampshire.

Engineered Building Systems of Philadelphia, Pennsylvania, serving the Philadelphia area.

Carr Supply of Columbus, Ohio, serving Ohio and Northern Kentucky.

Epting Distributors of Lexington, South Carolina, serving South Carolina, North Carolina, and the Georgia cities of Augusta and Savannah.

HATCH Company of Edmonton, Alberta, Canada, serving the province of Alberta.

"This expansion of our distributor network allows us to elevate our presence in North America while also providing new, local points of contact for engineers, mechanical contractors, and building owners," said Dave Burggren, sales director, Johnson Controls-Hitachi North America.



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California Energy Commission Adopts 2022 Building Efficiency Standards

New energy code expands use of heat pumps, PV and battery storage.

By Ted Rieger
Northern Calif. Correspondent

The California Energy Commission (CEC) unanimously approved the 2022 California Title 24 Building Energy Efficiency Standards, also known as the California Energy Code, at an August 11 business meeting. The standards, updated every three years, become effective January 1, 2023, and apply to new construction, additions and alterations.

A major change with the 2022 standards are requirements to encourage installation of all-electric

heat pump (HP) systems and technologies for space heating and cooling, and water heating to increase energy efficiency, reduce fossil fuel use, reduce carbon emissions and reduce greenhouse gas emissions from new California buildings.

The standards address HP baselines for single family residential buildings, low-rise and high-rise multifamily residential buildings, and selected nonresidential buildings. In addition, the standards expand the use of solar photovoltaic (PV) systems and battery energy storage systems to more building types.

CEC Commissioner Andrew McAllister, lead commissioner for the building efficiency standards, said, “The 2022 Energy Code

firmly pivots California’s buildings toward the clean, low-carbon technologies that are the bedrock on which our collective path forward will rest. This foundation will help the state meet its critical long-term climate and carbon neutrality goals.” Demand response and grid load flexibility also continue to be top priorities for California.

At the adoption hearing, Will Vicent, manager of the CEC’s building standards office within the efficiency division provided highlights of the changes for the 2022 Energy Code and an overview of the code update and rulemaking process. The new code was developed from a process that included more than 45 public meetings and workshops conducted by the

CEC since April 2019. Vicent listed several main areas addressed in the new code:

- Heat pump baselines
- Solar + energy storage baselines
- Electric ready requirements
- Multifamily restructuring, including consolidating provisions within the code to chapters dedicated to multifamily requirements
- Ventilation requirements

Heat Pump Baselines

The 2022 Energy Code encourages HP technologies for space conditioning and water heating in new residential buildings (with some exceptions based on climate zone) and apply to single family residential buildings, low-rise multifamily residential buildings (three habitable

stories or less), and high-rise multifamily residential buildings (four or more habitable stories).

The 2022 Energy Code requirements for space conditioning with HP baselines apply to several categories of nonresidential buildings (with some differences based on climate zone) that include: retail and grocery buildings, school buildings, offices, financial institutions, and libraries.

HP systems currently make-up a low percentage of HVAC market share. Some have expressed concerns about sufficient supply chain availability and service expertise, and many builders and consumers have limited experiences with HPs. However, McAllister noted that with California’s leadership and its massive building market, this will provide some long-term certainty to the industry to meet expected demand.

PV and Battery Storage

Requirements for solar PV systems paired with battery storage systems were first introduced in the previous 2019 Energy Code for new residential buildings. The 2022 Energy Code expands solar PV and battery storage system requirements to newly constructed multi-family residential buildings, and for selected non-residential building types that include: hotel-motel, tenant-space, office, medical office or clinic, restaurant, grocery store, retail store, school, and theater/auditorium/convention center buildings. Vicent said the new requirements are intended for the installed solar and energy storage systems to be sized modestly to ensure that stored energy is used onsite.

Other Changes

- New requirements for mixed fuel buildings to be electric ready. Electrical connections and other features needed to allow the use of non-combustion equipment options are to be installed at the time of initial construction. This includes a minimum electrical panel rating of 225 amps.

- Improved indoor air quality (IAQ) in new buildings with new minimum standards for residential kitchen ventilation. The code includes an updated chart and requirements using the fan energy index (FEI) to

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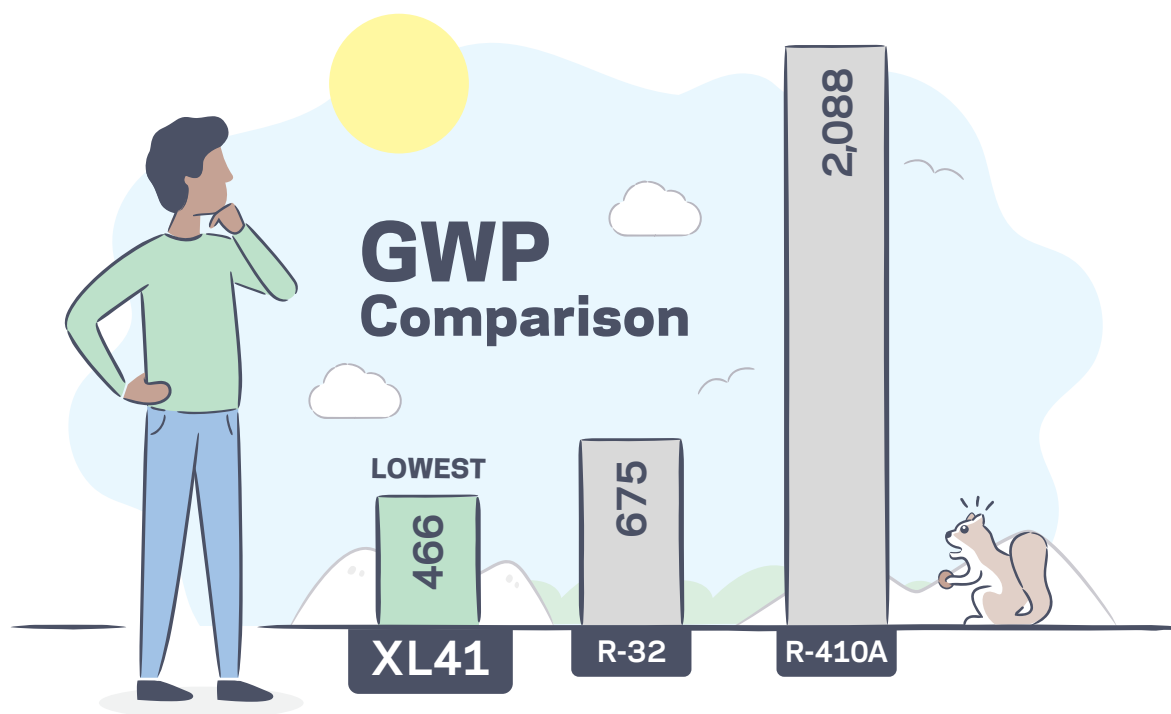
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More information: www.enertechgeo.com.

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Hitachi PrimAIRy

Hitachi introduces a new line of high-efficiency single-zone mini-split systems. Designed to meet



the unique needs of small to midsize properties such as shops, restaurants, and classrooms, the PrimAIRy system is an energy-efficient and cost-effective option.

Product features include brushless DC fan motors, compact units, long piping runs, and a quiet mode that reduces fan speed and frequency of compressor operation for optimal comfort.

The intelligent defrost control shortens defrost time more than 37% and delays defrost intervals up to six hours for reliable, consistent comfort, and refrigerant leak detection protects the compressor from damage and increases safety by automatically shutting down operation if the refrigerant charge amount drops below 30%.

The brushless high-efficiency DC fan motors cycle through 16 automatic adjustments during operation to meet demand exactly. Hitachi PRIMAIRy mini-split systems are compact and lightweight, and the systems accommodate up to 164 feet of piping length and 98 feet in height. Indoor units come in a range of styles and types to meet customer needs and application aesthetics. Systems perform in low-ambient temperatures down to -13°F (-25°C) (for the 24K model) and down to -4°F (-20°C) in heating mode for all other models.

More information: www.johnson-controls.com.

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Ice Air Cold Climate Heat Pump Domestic



Ice Air introduces its Cold Climate Heat Pump Domestic (CCHPD) series of air-sourced heat pumps and hot water heaters designed to operate at temperatures as low as -13°F. Ice Air's engineering enables CCHPD units to operate with extremely efficient coefficients of performance (COPs) of over 5.36 in extremely hot temperatures (115°F) or 1.42 in the extreme cold

(-13°F). With a COP of 1.42 in extreme cold, Ice Air's CCHPD series is 1.43 times more efficient than typical electrical resistant installations. CCHPD units can fit into existing openings with little hassle.

More information: www.ice-air.com.

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Kaori D Series Double Wall

Kaori's D Series Double Wall is a smart solution for commercial/residential heat pump and district heating systems. Kaori's D Series solution with double-stacked plates protects users from cross-contamination.

Kaori's true double-wall design not only makes leakage detectable but also provides extra protection. The design is made for residential and industrial applications where high and strict safety standards are required.

The D Series is good for applications such as heat transfer between potable water and a non-potable liquid, radiant heating, space heating, district heating, the pharmaceutical industry, and the food industry. The patented plate design can effectively prevent the contamination of two fluids inside the heat exchanger.

More information: www.kaori.com.tw/en.



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Lennox Model L

The Model L packaged rooftop line from **Lennox** features an all-new rooftop controller, the Lennox CORE Control System and Service App.

The Model L packaged rooftop line has high efficiency ratings. Featuring both gas-electric and electric-electric units, the Model L is available from 3-25 tons of nominal cooling capacity.

The heart of the Model L is the new Lennox CORE Control System and Service App. The CORE Service App was developed to replace the traditional user interface to provide quicker navigation for installation, network integration, and service.

Using the advanced diagnostic



and sensor system, the controller can communicate superheat, subcool, and other system performance details without hooking up gauges to the unit's refrigeration system. This performance information is available through open third-party communication protocols like BACnet and LonTalk.

More information: www.lennoxinternational.com.

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Lochinvar CREST

Lochinvar announces the CREST Condensing Boiler with Hellcat Combustion Technology, featuring RealTime O2 Trim. This combustion technology includes feed forward, feed back, commissioned trim, and learned trim to allow the user to set tailored parameters so the unit can run at peak performance around the clock without needing to make manual adjustments.

CREST boilers with Hellcat Combustion Technology feature an O2 sensor exclusively designed for a condensing hydronic boiler, along with Lochinvar's Smart Touch operating control that adapts to rapidly changing environmental conditions.

The control platform records the optimal settings and logs that information, and when those same environmental conditions arise, the combustion system automatically adjusts. CREST boilers with Hellcat Combustion Technology come in eight models, ranging from 1 million to 6 million BTU/hr, with up to a 25:1 turndown, a wave fire tube design, and CON-X-US® Remote Connect capabilities.

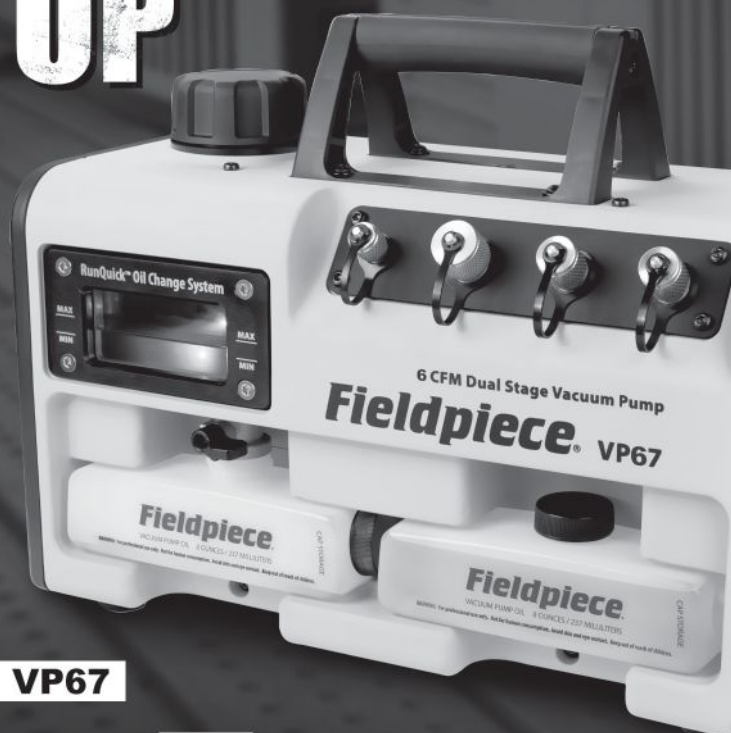
The units also feature a larger 10-inch LCD capacitive touch-screen display with improved brightness and contrast to deliver a sharper image. The control boards



Continued on Page 18

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Heating Products

Continued from Page 16

are universal and will not be designated by model size. If a board needs to be replaced, the universal board can be used since the individual boiler's settings remain on an external personality key, minimizing inventory and field replacements.

More information: www.lochinvar.com.

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Nortek Global HVAC
Reznor



Nortek Global HVAC (NGH), manufacturer of the industry's leading unit heaters, has redesigned its entire Reznor® brand of commercial/industrial/residential gas-fired unit heaters for the North American market. Updates include aesthetics, integrated air direction accessories and technological advancements that help contractors with installation, diagnostics

and service to provide end-users' with optimum building protection, comfort and reliability.

The redesign applies to Reznor's UEZ, UDZ, UBZ, UDX and UBX Series, which encompass unit heater models up to 400-MBH and up to 93-percent thermal efficiency.

Diagnostics and repair are expedited with Reznor's newly developed and technologically advanced control module. It displays 11 operational modes and error codes in an easily identifiable digital readout that corresponds with a nearby code chart. A new hinged access door prevents door drops and allows servicing while open. End-users will also appreciate an external green LED light display on every unit's bottom panel that confirms proper operation and flashes when maintenance is recommended.

The redesign's aesthetic update includes two-tone white and black cabinetry featuring powder coat paint application technology that eliminates sharp edges and reduces corrosion, fading, chipping, and scratching. Premium models also include red accented louvers and the Reznor logo embossed on the bottom panels. Reznor's renowned mitered front face design is now aesthetically complemented with

streamlined, steel panels void of any visible screws or fasteners. Tooled, rounded vertical corners and edges are featured on units ranging from 30 to 125-MBH.

Air direction versatility has also been increased with optional downturn nozzle and vertical louver accessories. Instead of bolted unattractively to the unit's front, both are integrally hidden between the removable front face and the unit. Each vane on both the nozzle and the louver options, as well as the front face's standard built-in horizontal louver, can be independently adjusted for pinpoint air direction.

Reznor also continues to use its unique single burner combustion design, which makes the unit heaters easier to interchange between propane and natural gas versus labor-intensive gas conversions on competitors' multiple burner designs.

Other features include:

- External terminal strip for easy access with 24-V wiring connections;

- Technical literature QR Code;
- 2-pt and 4-pt suspension receptacles (standard on all sizes);
- Easy access external gas connection.

The redesign is one of the most ambitious updates for the 133-year-

old Reznor since it introduced unit heaters in 1920. "We're a unit heater leader, so this innovative redesign will push the entire market forward," said Brandon Bossung, associate product manager, NGH.

More information: www.nortekhv.com.

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Trane Axiom WSHP



Trane has redesigned the vertical models in its Axiom WSHP product line for improved energy efficiency, acoustic performance, and serviceability.

The new vertical WSHP combines energy efficiency, sound attenuation, integrated controls, and superior maintenance accessibility. Enhancements include front access for all routine maintenance for improved installation and serviceability.

The models also offer super-efficient full-load energy efficiency

ratio (EER) and coefficient of performance (COP) at all energy efficiency tiers to help qualify for utility rebates and provide savings to the customer both in first cost and operating costs.

More information: www.trane.com.

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YORK Residential
Package Equipment

York's comprehensive a/c and heat pump range is offered in both 14 SEER and Energy Star® certified 16 SEER efficiencies with electric or gas heating. This next generation of equipment drives greater efficiencies in residential and commercial markets. The line works alongside other Johnson Controls HVAC products and solutions. The redesigned blower was engineered to bring comfort and advanced air distribution to improve indoor air quality and enhance wellness. In addition, the advanced fan design and vibration-reducing technology minimize noise to provide quiet comfort year-round. These units are designed with individual access panels and front-facing connections, simplifying installation and maintenance.

More information: www.york.com.



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The Whalen Company
Closetline

The Closetline Hot Gas Reheat series from The Whalen Company utilizes a compact cabinet. The Closetline series exceeds the ASHRAE 90.1 minimum efficiency and utilizes R-410A refrigerant to reduce operating costs without compromising the environment. Hot Gas Reheat is used for humidity control and for occupant comfort. By redirecting exhaust heat from the compressor to the reheat coil, the system can operate to remove

Continued on Page 19

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Trane Announces Technician of the Future National Scholarship Recipients

Trane by Trane Technologies announced the recipients of the Trane Technician of the Future Scholarship for 2021. Trane is awarding \$78,000 to 21 students across North America who are seeking a technical education as they prepare to enter the field of HVAC or building automation.

The recipients and the schools they plan to attend are:

- Steven Alexander – Spartanburg Community College
- Austin Bailey – Collin County Community College District
- Spencer Barkdoll – Southeast Community College - Milford
- Cole Berry – Midlands Technical College
- Matthew Bigg – Seneca College

- Jake Caldwell – Pinellas Technical College - St. Petersburg Campus
- Justin Fernandez – Hudson Valley Community College
- James Ford – Pickens Technical College
- Chadwick Grant – Collin County Community College - Preston Ridge Campus
- Marc Iusceac – Tennessee College of Applied Technology
- Robin Kendzierski – Ferris State University
- Chris Lewis – Ferris State University
- Marcelino Martinez – Central New Mexico Community College
- Fernando Medina – Gateway Technical College
- Desmon Merchant – Emily



- Griffith Opportunity School
- Christian Morano – Pennsylvania College of Technology
 - Fred Reagan – College of Southern Nevada
 - Kimberly Sikkema – Ferris State University
 - Vincent Travascio – Pennsylvania College of Technology
 - Peyton Whitaker – Washburn Institute of Technology
 - Kurtis Whittle – George Brown College
- “Congratulations to each of the Trane Technician of the Future

scholarship recipients,” said Donny Simmons, president, Commercial HVAC Americas, Trane Technologies. “We are honored to help these aspiring technicians launch a successful career in the HVAC and building controls industry. We need more qualified technicians and operators with the right skills to grow and sustain the dynamic HVAC industry. This scholarship program is one of the many ways Trane is helping build the next generation of skilled workers who will make significant industry contributions in the years to come.”

This year’s recipients were selected from a pool of finalists on the basis of academic performance, leadership and participation, long-

term career and educational goals, financial need, and other criteria. Recipients enrolled part-time receive \$2,500 each; recipients enrolled full-time receive \$4,000 each. Awards may be used for all education-related expenses.

More than half of the recipients are enrolled in academic institutions that are Trane NC3 Certification Centers, offering specialized HVAC labs and training using equipment and controls systems that create real-life scenarios for hands-on learning.

Details and eligibility requirements for future scholarships will be available on the application site later this year: <https://learnmore.scholarsapply.org/TraneTechnician/>.

Editorial Focus

Continued from Page 18



unwanted moisture. The integrated reheat coil is used to add sensible heat to the air stream to maintain the temperature setpoint and occupant comfort. The Hot Gas Reheat System increases efficiency by eliminating the need for a separate unit to dehumidify the air, thereby reducing overall energy usage. The product features available in sizes 0.5 to 5.0 nominal tons, single-stage operation up to 17.0 EER, horizontal or vertical configuration, compact footprint with easy service access, open or closed loop applications, and hybrid heating and cooling operation, with the CuNi heat exchanger available.

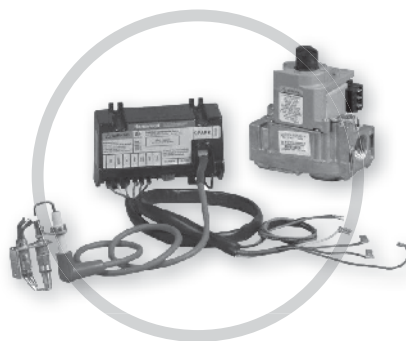
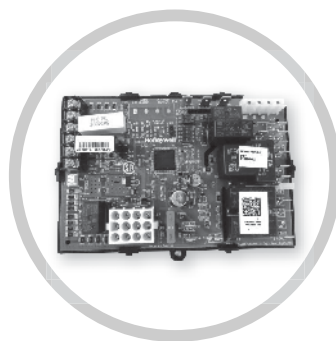
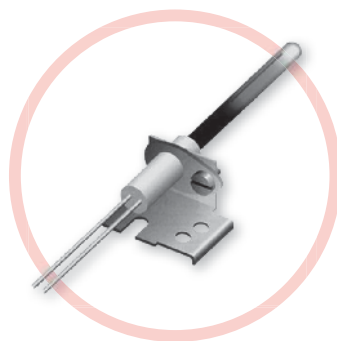
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Product Spotlight

New Hybrid Cooler Technology Saves Water and Reduces Energy Consumption

Changing climate and population growth driving demand for water-saving evaporative cooling equipment.

*By Ben Cohen
Manager, Product Marketing
Baltimore Aircoil Company*

Several global trends are contributing to the desire for cooling system solutions that can save energy while also saving water. Heavy flooding in some regions, higher drought levels in other regions, and extreme temperatures and weather events have been driving the need for new solutions. In addition, the population is increasing in these regions, and emerging markets continue to see migration from rural areas to cities. As new trends have emerged, many customers, especially in California and the western United States, have been looking for solutions that save water while still maintaining the benefits of evaporative cooling equipment.

Since energy and water production are interrelated, it is important to select equipment that appropriately balances energy and water usage. Although air-cooled and water-cooled systems each

have their tradeoffs, engineers often design water-cooled systems for lower energy consumption and a smaller footprint than air-cooled equipment. Water-cooled systems continue to free power grids from excessive strain while reducing water usage at power plants. However, some applications can benefit from additional flexibility to balance energy and water savings.

Now, a new hybrid cooler technology offers energy efficiency in addition to providing water savings. A combination of a high dry switchpoint and redundancy features contributes to reliable year-round operation. In addition, the new equipment has a crossflow design that reduces maintenance and operating costs while providing layout flexibility.

Comparing water and energy use in air-cooled and water-cooled systems

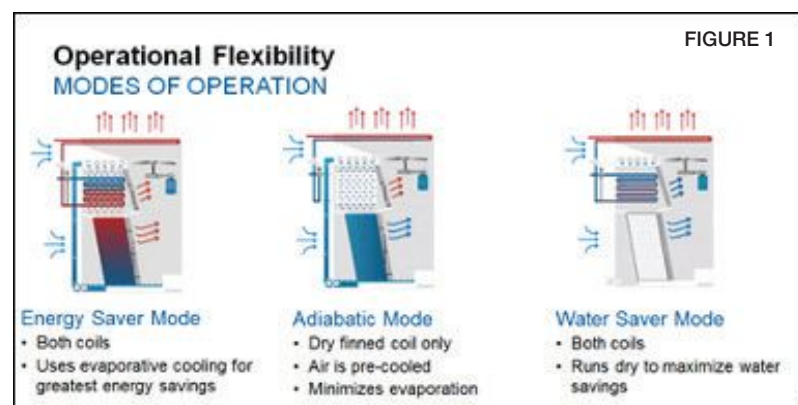
There are two types of cooling



THE HXV HYBRID COOLER USES UP TO 70% LESS WATER THAN OTHER WATER-COOLED EVAPORATIVE EQUIPMENT.

systems, air-cooled and water-cooled, and the difference between these two systems is related to design temperatures.

Air-cooled systems are designed based on the ambient dry bulb temperature, while water-cooled systems are designed based on the ambient wet bulb temperature. For example, the design wet bulb temperature in Baltimore, Md., is typically 78 degrees, which is significantly lower than the design dry bulb temperature of 95 degrees. Since water-cooled



systems are designed around this lower temperature, water-cooled equipment has a smaller footprint and uses significantly less energy than air-cooled systems.

Energy savings and footprint reduction vary due to several factors, including the amount of heat to be rejected, geography, and jobsite conditions. Therefore, it is important to understand application needs and jobsite constraints in order to select the best system type for your application.

New hybrid cooler technology optimizes water and energy savings

For those applications that can benefit from more closely controlling resource utilization, owners look for the optimal balance between energy use and water consumption, especially if access to water is limited. A new hybrid heat transfer technology has been developed for applications where water is scarce or expensive. Applications that may benefit from hybrid technology include data centers, manufacturing, industrial, power and process, and HVAC applications.

One example of this hybrid technology is the HXV Hybrid Cooler, which offers both energy efficiency and water savings. This technology uses different operation modes to reduce water and energy consumption. The option to use dry operation and the equipment's crossflow design results in up to 25% maintenance savings compared to traditional evaporative fluid coolers. A key part of the general maintenance cost savings is the 70% chemical savings, since the equipment can operate dry throughout much of the year.

Delivering energy-efficient cooling while maximizing water savings, this hybrid cooler saves up to 70% of water compared to other evaporative cooling equipment, with a higher dry switchpoint. It also saves up to

60% more energy than air-cooled equipment.

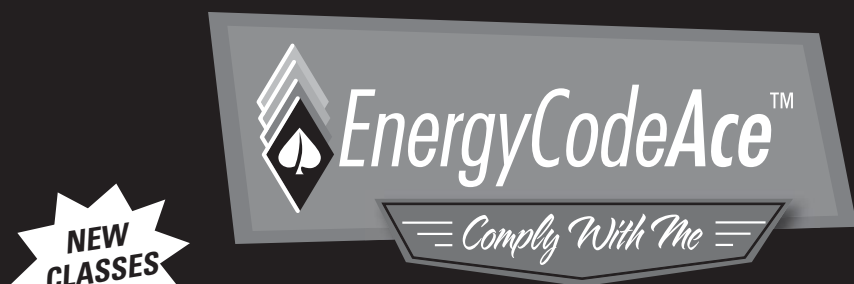
The unique design includes two coil sections, the prime surface coil section and the finned coil section. These heat transfer sections operate in three different modes: energy saver (combined wet/dry); adiabatic; and water saver (dry). This means that users can balance water and energy savings based on their specific application needs.

The energy saver mode offers the most efficient heat transfer method and flow control. Initial cooling occurs in the finned coil as air passing over the finned coil pre-cools the internal fluid. As spray water is distributed over the prime surface coil, primary evaporative cooling occurs. Using both sensible and evaporative heat transfer, the combined mode results in significant water savings compared to conventional evaporative units, even at peak design conditions. (The sensible cooling of air is the process in which only the sensible heat of the air is removed so as to reduce its temperature, and there is no change in the air's moisture content). [1] Energy saver mode always saves around 25% water because the dry finned coil is always sensibly cooling approximately around 25% of the heat load.

Adiabatic mode occurs when the process fluid flows through the finned coil only and completely bypasses the evaporative prime surface coil. Water continues to evaporate over the fill, pre-cooling the incoming outside air before it reaches the finned coil, greatly increasing the rate of sensible heat transfer. With reduced water consumption while maintaining the low fluid design temperatures required to maximize system efficiency, adiabatic mode saves up to 75% of water.

Operating in adiabatic mode has another benefit – it greatly reduces visible plume that occurs when the air is fully saturated, especially in colder and damper

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Product Spotlight

conditions. Many operators want to reduce or eliminate the plume for aesthetic reasons.

With water saver mode, both coils are used to maximize the heat transfer surface area. The spray water pump is turned off and no water is consumed. The fluid to be cooled passes from the finned coil into the prime surface coil, maximizing the heat transfer surface available. In dry mode, plume is eliminated. The unit runs dry to maximize water savings and can achieve even higher dry switch points when running at partial load. Water saver mode saves 100% of water use, as all heat is rejected sensibly.

Figure 1 illustrates the operational flexibility offered by the three available operation modes.

Figure 2 shows an example of how the hybrid technology design can save water compared to traditional finned coil products. The hybrid technology has a lower operating weight than the traditional model but an 11.4 degrees higher dry switch point. The higher dry switch point minimizes both water and chemical use.

Reduced maintenance costs and highest uptime

The new hybrid technology also has reduced maintenance costs compared to other hybrid products. The



crossflow design provides easy and fast access with ample room to access key components, especially the coil, motors, fill and spray branches, and water collection basin. The spray distribution system and coil sections are highly visible and can be quickly inspected during operation. Additionally, the combined flow design allows for evaporation in two areas:

- Prime surface coil – water flows in the same path as the air along with evaporation, fully wetting the tubes and preventing unnecessary scale buildup
- Fill section – 70% of the evaporation occurs in this section

The fully wetted tubes and reduced evaporation over the coil section along with the benefits listed above ensure higher system uptime than other hybrid evaporative technologies.

Figure 3 illustrates how the combined flow design fully wets the coil tubes when compared to conventional counterflow designs that can leave dry spots and result in scale buildup.

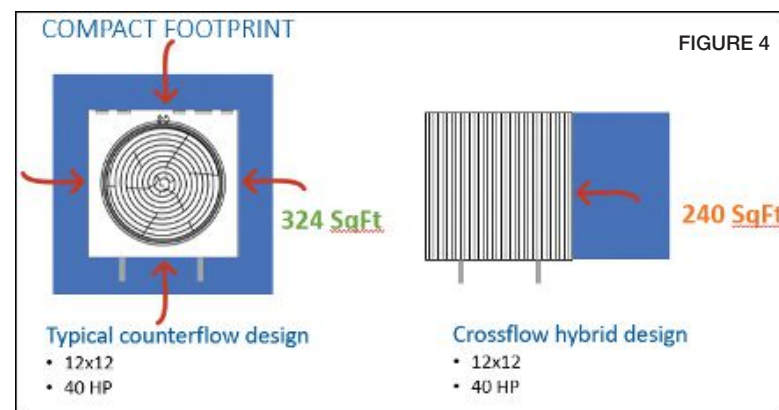
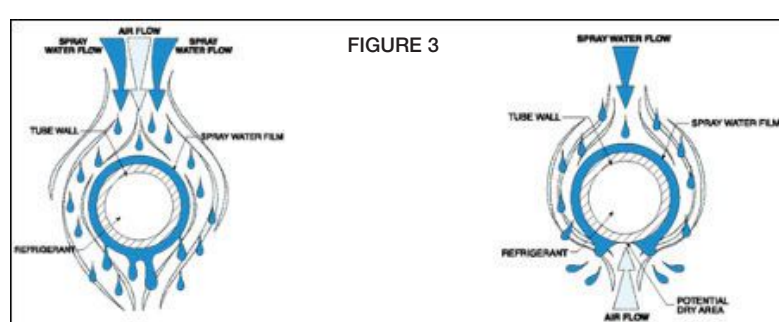
Figure 4 shows how the hybrid technology offers a compact foot-

print that can be a factor in achieving layout flexibility.

Both units are 12-feet x 12-feet models, with a total fan HP of 40. The typical counterflow design requires clearance on all four sides due to the induced draft design. The new hybrid design has a single side air inlet as well as 30% of the air coming in from above the wet coil, which means only one side requires clearance and it is reduced for 70% of the airflow. The result is an overall footprint for the typical counterflow design of 18-feet x 18-feet, or 324 square feet. The overall footprint of the hybrid design is 12-feet x 20-feet, or 240 square feet, which is 84 square feet less, a 26% reduction in footprint.

Water consumption in cooling systems is in some ways industry specific. For example, data centers use massive amounts of energy and often select evaporative cooling because they want to reduce their energy costs. At the same time, they also require redundancy in the event of water loss or having to accommodate water restrictions.

The HXV Hybrid Cooler has recently been selected for a large



liquified natural gas facility and its process cooling loop. The main drivers for use of the HXV on this project were plume abatement and water savings. Additionally, due to the remote location of this facility, the HXV Hybrid Cooler's modular design allows for minimized site labor and faster install time compared to field-erected equipment. This ultimately results in lower contractor risk and on-time completion.

Demand growing for evaporative cooling equipment with increased operating flexibility

Traditional evaporative heat rejection remains the go-to solution for low system energy use and reduced footprint. However, as

demand grows for evaporative cooling equipment with additional operating flexibility, new hybrid technologies offer innovative solutions that balance energy and water savings based on specific application needs. Today's customers must consider geography, application, jurisdiction, and regulations as they select the right cooling system for their projects.

References: [1] Psychrometric Processes: Sensible Cooling & Sensible Heating of Air, Bright Hub Engineering, <https://www.brighthubengineering.com/hvac/41436-psychrometric-processes-sensible-cooling-and-sensible-heating-of-air/>, retrieved 8/1/19.

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Technical Training

Growing Green Technicians Part 144: Temperature Rise Testing, Fuel Pressure Checks

By Jim Johnson
Contributing Editor

HVAC trainers, when they facilitate workshops for service companies, housing authorities, or other agencies, report that when they ask two fundamental questions regarding gas furnace servicing, it's common for them to get a "no" answer.

The two questions:

1. Are you performing a temperature rise test?

2. Are you confirming that the proper fuel pressure is being applied to both the equipment and the manifold?

If a technician is taking a green approach to servicing HVACR systems, the answer to those questions should be "yes". It's what the answer should be whether the situation is accomplishing the installation of new equipment, getting the equipment back online with a repair, or performing a maintenance check at the beginning of the heating season. This not only applies from the perspective of making sure that the equipment is operating at maximum efficiency, but also regarding safe equipment operation.

One issue regarding the two questions is that it's often assumed that the necessary temperature rise and fuel pressure checks were performed when the furnace was installed. The unfortunate truth is, while that may have been what happened, it's possible that the two basic evaluations were not performed. And, even if those tests were accomplished at the instal-

lation, equipment that has been in service for any length of time should be tested to confirm that it is still operating properly.

In some cases, all it takes on the part of the technician is to ask a customer a few simple questions about their thoughts on the performance of the equipment, such as whether all the rooms are comfortable. Often when a technician takes this approach, they get a response that begins with, "Well, now that you mention it...."

About the proper rise in temperature through the furnace cabinet, some manufacturers will list the information on the equipment tag as being within a given range of temperature such as 55 to 75 degrees, or they may list it as a specific number, such as 65 degrees. Whatever the case, performing a temperature rise test is a simple process of accurately measuring the return air temperature and the supply air temperature, then subtracting the return measurement from the supply measurement to determine what the rise is. (See **Figure One**)

Once the furnace has been operating for 10 to 15 minutes, employing a professional grade digital multimeter with a Type K thermocouple accessory will provide the information you need for this procedure. In this example, we're showing the proper locations for temperature measurement out of what is known as the "line of sight" of the heat exchanger so that the readings will be accurate. If a customer reported that while most of the house was comfortable, but

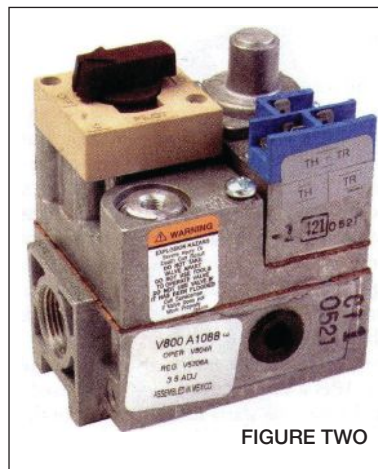


FIGURE TWO

one of the rooms furthest from the furnace never seemed to get warm enough, performing a temperature rise test could be the solution to the problem.

If the correct temperature rise was, for example, listed as 65-degrees on the equipment tag, but your test showed it to be 75-degrees instead, the fix for that problem could be as simple as adjusting the speed of the blower motor. In a case like this, if the unit employed a four-speed PSC motor, and it was wired to operate on low speed, changing the wiring to operate the motor on medium-low speed would deliver the necessary air to the problem area, and bring the temperature rise to the manufacturer's specifications. If the equipment being serviced employs an ECM motor and your calculations show an incorrect temperature rise, follow the manufacturer's specific instructions regarding motor speed operation.

Regarding accomplishing a fuel pressure test on a gas furnace, that's another issue related not just to the efficient operation of



T1 (Red) To Supply Air
T2 (Blue) To Return Air

FIGURE ONE

the equipment, but it's also a safety consideration because a properly operating burner will generate the lowest level of carbon monoxide possible. A gas valve such as the one shown in **Figure Two** is equipped with 1/4" threaded openings on both sides of the valve, plugged with an Allen screw.

In the case of natural gas, the recommended pressure applied to the equipment (the inlet of the valve) should be 5" to 7" water column pressure, and the subsequent manifold pressure (also known as burner pressure) should be 3.5" water column inches. On an LP gas furnace, the equipment pressure should be 11" to 13", and the manifold

pressure should be whatever the manufacturer shows on the equipment tag.

When accomplishing equipment pressure tests, make sure that the furnace itself, along with other fuel burning equipment in the building, is operating. Taking this approach will ensure that the furnace will always have proper fuel pressure at the inlet of the gas valve regardless of the overall flow in the piping throughout the building. With the proper pressure applied to the equipment, and subsequently to the burners, the combustion process can be assured as being correct when any necessary air adjustments are accomplished, ensuring that the furnace can operate efficiently and safely.

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Mitsubishi Electric Trane HVAC US Announces Fall Technical Training Webinars Schedule



In the spirit of back to school, Mitsubishi Electric Trane HVAC US (METUS), a leading supplier of Ductless and Ducted Mini-split and Variable Refrigerant Flow (VRF) heat-pump and air-conditioning systems, is pleased to announce their Technical Training team is offering free live webinars on Fridays. The webinars began in September and will continue through October and November at

1:00 p.m. EST.

Contractors can log into the Mitsubishi Electric Trane HVAC US Contractor Portal to access available training and register for classes.

The remaining schedule is below:

October Webinars Schedule:

- October 1, 2021: CITY MULTI® Service Manual Overview – In this webinar, METUS takes you on a tour of a typical service manual. Attendees will discuss important sections and tips for quickly finding information.

- October 8, 2021: PAC Tool and INVERTER Checker Overview – The two diagnostic tools used to aid technicians in troubleshooting M&P systems will be reviewed in this session.

- October 15, 2021: ERV Application – In this webinar, METUS discusses the options available for delivering outside air into indoor units, such as the Lossnay® and PremiSys® units.

- October 22, 2021: M&P - Understanding INVERTER Technology – Explore the relationship between AC and DC characteristics of an Inverter Circuit.

Continued on Page 23

Troubleshooting

A Package Unit Heat Pump That's Not Heating Enough

In this troubleshooting situation the equipment is a package unit heat pump, and the customer has called for service because although they have the thermostat set at 74 degrees, the temperature in the building remains at 64 degrees with the system “running constantly”. When you arrive, you confirm the thermostat settings and the uncomfortable indoor temperature. And, when you check the outdoor section of the equipment, you find the outdoor coil severely frosted. The compressor and the outdoor fan motor are running.

After reviewing the manufacturer's wiring diagram shown in **Figure One** and the legend in **Figure Two**, you decide that your first step would be to check the condition of the Defrost Thermostat (DFT), and your voltmeter shows 0-volts at the switch connections.

As your next step, you locate and attach a jumper across the pins that allow you to initiate a defrost mode. With this step accomplished, the reversing valve

switches to re-direct refrigerant flow, allowing the outdoor coil to warm up. The outdoor fan motor continues to run. When you test at the Defrost Relay (DR) terminals wired in series with the OFM, your meter shows 0-VAC.

Your two-part troubleshooting question:

1. Which component needs to be replaced to restore this equipment to normal operation?
2. What condition did the failure of this component cause that led to the frost build-up?

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

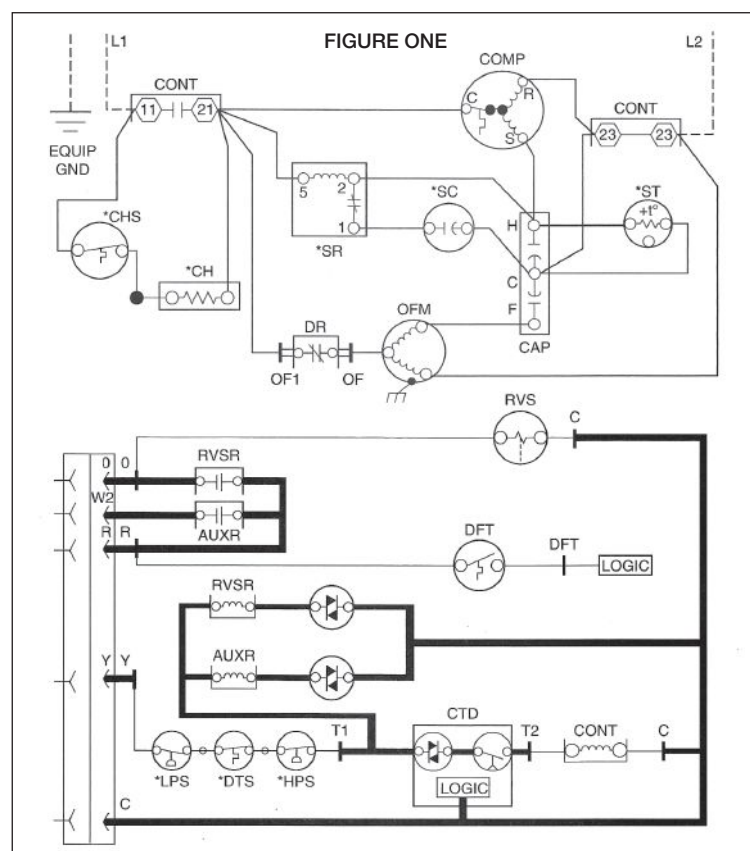
AUXR.....Auxiliary Heat Relay
CAP.....Capacitor (Dual Run)
CH.....Crankcase Heater*
CHS.....Crankcase Heater Switch*
COMP.....Compressor
CTD.....Compressor Time Delay
CONT.....Contactor
CB.....Circuit Board
DFT.....Defrost Thermostat
DR.....Defrost Relay & Circuitry
DTS.....Discharge Temperature Switch*
HPS.....High Pressure Switch*
LPS.....Low Pressure Switch*
OFM.....Outdoor Fan Motor
RVS.....Reversing Valve Solenoid
RVSR.....Reversing Valve Solenoid Relay
SC.....Start Capacitor*
SR.....Start Relay*
ST.....Start Thermistor*

*May Be Factory Installed

FIGURE TWO

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

The next step is to replace the defrost timer. When we manually initiated a defrost mode, the heater operated properly, and the compressor circuit was deenergized. And the evaporator fan motor, which is supposed to keep running until defrost is accomplished, continued to run.

The winner of last month's Troubleshooting is:

James Alex Agalzoff
Montebello, Calif.

Training Webinars

Continued from Page 22

Operation and functionality of Converter Circuit, Noise Filter Board and the Inverter Circuit will be discussed to give technicians a better understanding of how an INVERTER works.

• October 29, 2021: MAC-333/334 Overview and Application – This webinar will provide an overview of the MAC-333 and its ability to add inputs and outputs to an M-Series indoor system and its successor the MAC-334.

November Webinars Schedule:

• November 5, 2021: Initial Settings Tool Basics – In this webinar, METUS will take a look at the software used to setup a Central Controller. The Initial Settings Tool and how it will make short work of setting up controllers, units and more will

be discussed.

Previous classes during the month of September include:

- September 10, 2021: M-Series Customizing & Cutting Jumpers – This webinar will discuss the process of cutting jumpers and resistors in order to customize an M-Series indoor and outdoor unit.
- September 17, 2021: CITY MULTI® Grouping of Indoor Units – This presentation will review rules and best practices of grouping indoor units and the differences when using MA and ME controllers.
- September 24, 2021: Maintenance Tool Driver Installation & Setup – Initial setup of the Maintenance Tool converter, drivers and software needed to get up and running will be highlighted.

For more information, please email training@hvac.mea.com. To learn more about Mitsubishi Electric Trane HVAC US visit, www.metahvac.com.

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IHACI Trade Show Exhibitors

3M Booth 610

Extreme weather. Stricter code requirements. Difficult deadlines. It's clear your job is more challenging than ever – but problem-solving is 3M's business. We make smart solutions by applying the best of materials science to your toughest HVAC and refrigeration challenges.

Action Duct Cleaning Booth 404

Action Duct Cleaning has provided meticulous HVAC cleaning services for thousands of industrial, commercial, and residential clients since 1978, with the most tenured, conscientious foremen in the business. Our President serves on the Board of NADCA, setting best practices and technical protocols for the industry. Contact us: 800-371-2284 or actionduct.com.

A-Gas Booth 121

A-Gas is the world leader in the supply and life cycle management of specialty chemicals such as refrigerants, hydrocarbon blowing agents, and clean agent fire protection. In addition to that, our service sector, Rapid Recovery, offers onsite EPA compliant refrigerant removal across the country!

Air Scrubber by Aerus Booth 809

AES provides solutions for the HVAC industry utilizing ActivePure Technology to proactively decontaminate surfaces and purify air. ActivePure is proven in real-world environments and independent FDA-compliant laboratory testing. Thousands of HVAC professionals have added incremental revenue to their businesses

with ActivePure products. For more information, please visit www.airscrubberbyaerus.com or www.activepure.com.

Airzone North America Booth 304

As Airzone we are coming to IHACI with our integrated HVAC control and zoning solutions compatible with the latest BMS/HA technologies. We are an industry leader in sustainable Inverter/VRF market and currently expanding our national rep network with exclusive rights. Come check us out and let's talk business!

Albritton Company Booth 217

The John Albritton Company, (since 1982, our 39th year!) will be exhibiting the following manufacturers' products:

Intermatic/Grasslin time clocks / defrost controls, see the GM-40AV general purpose timer which replaces discontinued 4000 and 7000 models, the AG 3000 HVAC surge protection controls, and DTAV-40 defrost controls! Doucette heat exchangers and heat recovery units. CellarCool Wine Cellar Cooling Systems by WhisperKOOL. TPI heaters, fans, and occupancy sensing t-stats. Midco power gas and Lo-Nox burners. Superior Valves by Mueller Brass - isolation, ball, check valves, suction / liquid line filters/cores. And AccuTools TruBlu hoses!

Alliance Environmental Group Booth 303

With over 100 years of experience and offices throughout California, Arizona, and Nevada, Alliance Environmental Group, and its subsidiary companies (Airtek Indoor Air Solutions/Mintie/Coast IAQ & Life Safety Services) are

leaders in environmental remediation and indoor air quality services. Big announcement coming soon... stop by during the tradeshow to learn more!

American Coil Booth 626

American Coil is a leading manufacturer of replacement & OEM Commercial/Industrial HVAC coils including AmeriCoat ant-corrosion coating which offers a 5-year warranty. American Coil delivers the right balance of quality, competitive pricing coupled with industry leading delivery makes American Coil your coil of choice.

Arzel Zoning Technology, Inc. Booth 505

Arzel offers superior quality and a lifetime warranty. Designed specifically for trouble-free installation, our zoning products are perfect for retrofit and new construction applications in residential or commercial buildings. Our mission is to increase contractors' efficiency through training, outstanding technical support, and products, making Arzel the "right choice for professionals."

Aspen Manufacturing Booth 202

Aspen Manufacturing, LLC, one of the largest independent manufacturers of evaporator coils and air handlers for the residential and light commercial heating, ventilation, and air conditioning ("HVAC") marketplace in the United States and Canada. Aspen engineers, manufactures, and markets an extensive line of residential, manufactured homes, and light commercial evaporator coils and air handlers under the Aspen brand. Featured this year will be a wide variety of coils and air handlers including the new DS Horizontal coil designed for better fit with OEM furnace cabinets. The company will also be displaying a full line of soffit-mount electric and hydronic air handlers manufactured under the AirMark brand.

Baker Distributing Co. Booth 601

Established in 1945, we bring over 75 years of business experience and knowledge of the HVAC and Commercial Refrigeration industries to our customers. Baker Distributing Company offers our customers a wide range of product lines, competitive pricing, superior service and valuable timesaving services that position us as an industry leader. With over 200 sales centers in 24 states, we continue to grow and are positioned to serve the HVAC/R community.

Brownson Technical School Booth 410

Brownson Technical School has been training the HVAC/R workforce for over 37 years. Training is intensively hands-on with very high placement rates. Additionally, Brownson Technical School and North American Training Center in Redlands is the hands-on training and evaluation partner for NEBB and RSES Mechanical Acceptance Testing certification programs. (800) 799-9891 or visit: www.brownson.edu.

CalCERTS, Inc. Booth 102

Visit CalCERTS Booth #102 to learn about CalCERTS HERS Training for Title 24 code compliance. CalCERTS' HERS Rater Training is based on HVAC best practices and the CalCERTS Registry provides the largest, most comprehensive data registry for HVAC contractors to easily complete compliance forms. For more information visit www.calcerts.com.

CHEERS Booth 411

CHEERS is the online registry where HVAC Contractors register Title 24 alteration & new construction jobs. Contractors register their ALT-02 for FREE. Trades always use CHEERS at no cost. See why more projects are registered with CHEERS!

Coilmen Plus Booth 517

For over 50 years, Heatcraft coils have set the industry standard in quality heat transfer coil manufacturing. Coilmen Plus is the exclusive representative in the Southwestern states providing coils direct to you. Whether it is a replacement or new design, our in-house engineering staff can provide the quality you need in the time frame your customer demands.

Danko Mechanical Sales Co. Booth 529

Danko Mechanical Sales will be hosting in booth #529 GE Appliances' (GEA) new Air & Water Solutions business and Sanhua International.

GEA is dedicated to serving the unique needs of IHACI members, and we've never been in a stronger position to support your HVAC & water heater needs with our product solutions from our family of trusted brands: GE, Haier and Hotpoint.

Sanhua International established in 1984 is the largest manufacturer of Service Valves, 4-Way Reversing Valves and Thermal Expansion Valves in the world today. With ISO and TX Quality Management Certified facilities, Sanhua International manufactures Electronic Expansion Valves to help with future Energy Savings in refrigeration.

Delta 4 Environmental Inc. Booth 406

We proudly provide SoCal with the best asbestos and lead abatement, mold remediation and selective demolition services in the industry.

Our main objective is to handle every project in a professional manner, on time and on budget.

Denco Booths 221, 222, 223, 224, 225, 226, 227

Denco Manufacturing Representatives is proud to represent Samsung HVAC – Superior Quality Mini Splits including Residential, Light Commercial & VRF. Yellow Jacket – Serving the industry for over 70 years with High Quality Service tools including hoses, gauges, manifolds, vacuum pumps, recovery units and so much more. ICM Controls – Technologically advanced custom controls. Blue Diamond – Condensate removal pumps and accessories for use in air conditioning and refrigeration. Lucas Milhaupt – Decades of Expertise providing innovative Metal Joining Solutions to connect the world around us. Phenomenal Air - Plasma generators with cold plasma generator technology which kills viruses, bacteria, mold spores, fungus spores, eliminates allergens and odors and more. PDM – High Quality Polyethylene Preinsulated Linesets made in the USA.

Eagle X Pro Booth 327

Eagle X Pro (EXP) offers patented bipolar ionization technology, neutralizes viruses (including SARS-CoV-2) Bacteria, Mold, Fungus and Smoke. *) EXP units produce the highest density of Ions on the market with between 10 billion to 1 trillion ions generated per second. Made in America.

*)Based on third party lab tests

Energy Code Ace: Booth 402

EnergyCodeAce.com is a "one-stop shop" offering no-cost tools, training, and resources to help decode the requirements of California's building energy code, Title 24, Part 6, and the Title 20 appliance standards. It's funded

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IHACI Trade Show Exhibitors

by utility customers under the auspices of the CPUC and implemented by PG&E, SDG&E, SCE and SoCalGas.

Energy Masters Booth 808

Energy Masters HERS Testing is focused primarily on helping contractors receive accurate and passing testing and balancing results for commercial and residential HVAC systems. From same to next day testing available, competitive pricing, and trained technicians we will have the job done yesterday! Visit our IHACI booth or visit www.energymastersinc.com.

ESCO Institute / HVAC Excellence Booth 807

R-410A is going away! Are you ready to work with Low GWP (A2L -slightly flammable, A3 -highly flammable) refrigerants? Stop by the ESCO Institute booth to learn about the refrigerant transition, California's newly required acceptance testing program, and over 500 HVACR training solutions to keep current with industry changes. escogroup.org.

Evergreen Telemetry Booth 722

Evergreen Telemetry manufactures wireless sensors for balancing, commissioning, and troubleshooting in commercial buildings. The Wrist Reporter™ displays real-time results from up to ten wireless sensors for Air & Water Pressure / Velocity / Flow / Temperature / Humidity and CO2. Our tools make TAB and Cx Faster, Easier, and Safer.

Ferguson HVAC® Booths 201, 301

Ferguson® has supported the IHACI Annual Tradeshow for over 40 years. This year we honor

essential HVAC workers. We are an industry leader and national distributor of residential and commercial heating and cooling equipment, systems, parts, and supplies. Contractors can scan our QR Codes to access trade resources, event, training calendars that will help you stay up-to-date with changing HVAC market conditions, AQMD, Utility trends, and how we're growing. Contractors can get access to premier residential and commercial equipment brands- Day & Night®, Trane®, RUUD®, Mitsubishi Electric Ductless®, VRF systems from local stocking branches in CA, AZ, NV. Start today: <https://www.hvacbusinessresourcecenter.com/>.

FIELDBOSS Booth 209

FIELDBOSS HVAC Contractor Management Software, powered by Microsoft Dynamics 365, is built specifically for the HVAC industry. FIELDBOSS is unique as it is designed for both large organizations looking for an integrated custom software while also suited to smaller contractors who are looking for a fast, budget friendly, non-integrated implementation.

Fieldpiece Instruments Booth 317

Fieldpiece Instruments started with the idea that every HVACR professional in the field needs the best tools possible. Our suite of products is specifically designed, tested, and built exclusively for HVACR professionals. From digital manifolds to multimeters; vacuum pumps to recovery machines; and pipe clamps to tool bags, Fieldpiece has a full range of market-leading prod-

ucts to get the job done right.

Geary Pacific Booth 501

Geary Pacific is an HVAC distributor serving the Western United States since 1961. We have 30 locations in California, Arizona, Nevada, Idaho, Colorado, Oregon, Washington and Texas. We distribute Bard Wall Mount HVAC equipment for the Modular Building Industry as well as the Goodman and Amana residential line. www.gearypacific.com.

GoGreen Financing Booth 527

GoGreen Financing offers exceptional energy efficiency financing options for your customers. Administered by the State of California, GoGreen Home and GoGreen Business help contractors seal the deal with flexible project scopes, lower monthly payments, and quick

and easy approvals. Stop by our IHACI booth or visit GoGreenFinancing.com to learn more.

HERS Raters, LLC Booth 305

Visit HERS RATERS LLC Booth #305 to learn how HERS RATERS LLC helps contractors and homeowners with their Title 24 Compliance Needs.

Founded in 2013, HERS RATERS LLC is a team of: knowledgeable HERS Raters, Air Balancers and Acceptance Test Technicians.

We have been working with contractors and homeowner on making sure that their projects are within CDC requirements, as well as helping them receive their Title 24 compliance forms and meeting their air balancing needs. For more information visit www.hersraters.com

Inaba Denko America Booth 713

Inaba Denko America supplies HVAC accessories engineered by Inaba Denko of Japan and provides support for distributors and contractors throughout North America. For over 40 years we've been manufacturing and providing the best quality products worldwide. Our products consist of insulated linesets, commercial and residential lineset covers, drain hoses and more.

Slimduct SD Lineset Cover is the ideal solution conceal, protect, and beautify exposed linesets. Easy to install Slimduct SD is available in five colors and three sizes. Stop by booth #713 for a chance to win a Slimduct SD Black residential lineset cover kit!

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2022 Energy Code


Continued from Page 14

use in selecting fans to meet efficiency and sizing requirements.

The 2022 Energy Code was supported by some of California's major utility companies as part of the Statewide Utility Codes and Standards Enhancement Team that participates in the CEC's code development and update process. These utilities include Southern California Edison (SCE), San Diego Gas and Electric (SDG&E), Pacific Gas and Electric Co. (PG&E), the Los Angeles Department of Water & Power, and the Sacramento Municipal Utility District (SMUD).





Bob Raymer, representing the California Building Industry Association (CBIA), whose members are active in new residential construction, said CBIA has maintained a neutral position on the overall standards. He said CBIA's next step is to focus on the education and training of builders and said, "We look forward to working with all parties to implement an incentive program that will support all-electric construction."

Information on the CEC Building Energy Efficiency Standards, and the 2022 update, can be accessed through the general standards webpage at: <http://www.energy.ca.gov/title24/>.



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IHACI Trade Show Exhibitors

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Institute of Heating & Air Conditioning Industries, Inc. **/ Indoor Comfort News** **Booth 627, 629, 726**

The Institute of Heating and Air Conditioning Industries, Inc. (IHACI) is a nonprofit trade organization dedicated to the advancement of heating and air conditioning professionals throughout California. Membership benefits and services include free education and training opportunities, legislative advocacy, and business/professional referrals, just to name a few. IHACI produces the West's leading trade show of the HVAC/R/SM Performance Contracting industries, now in its 41st year of production.

IHACI also owns and publishes Indoor Comfort News, the West's leading news magazine of the HVAC/R/SM Performance Contracting Industries. Incorporated in 1948, IHACI/ICN remains progressive in representing the needs of the heating and air conditioning industry. For information, contact IHACI/ICN at (818) 551-1555 or visit www.ihaci.org.

iPermit **Booth 704**

iPermit is the industry leader in providing testing and permit services to HVAC Contractors in California! Our team members are strategically placed throughout the State to meet the needs of our customers quickly and efficiently! Go to our website for information and reviews from satisfied customers! www.iPermitERaters.com.

J.B. Warranties **Booth 510**

The Nation's leading provider of HVAC and Plumbing extended warranties, JB has a dedicated sales, support, and claims staff across the country. We thrive on supporting our dealers and look forward to helping them increase revenues, guarantee service calls, and ensure additional sales opportunities in the home for years to come."

KWIK MODEL 3D **Booth 104**

Kwik Model with Energy Gauge Loads is an award-winning new 3D residential HVAC design software. Please visit booth #104 for a live demo. It is a cooperative effort between Coded Energy, Inc's innovative 3D user interface, Kwik Model,

and Florida Solar Energy Center's (FSEC) ACCA approved EnergyGauge Loads. Fast, simple, and intuitive. Free training available: support@kwikmodel.com.

LG Electronics USA **Booth 513**

LG Electronics USA Air Conditioning Technologies is a leading player in the global air conditioning market, manufacturing both commercial and residential air conditioners and providing sustainability and building management solutions. From consumer and individual units to industrial and specialized air conditioning systems, LG provides a wide range of products for heating, ventilating and air conditioning. The company's industry-leading variable refrigerant flow (VRF) technology minimizes efficiency losses, provides sustainable energy savings and offers some of the lowest life cycle cost of any system on the market today. LG is a 2020 ENERGY STAR® Partner of the Year-Sustained Excellence. Visit lghvac.com.

L.H. Dottie Company **Booth 109**

For over 56 years the L.H. Dottie Company has manufactured quality products for the Electrical, Plumbing, HVAC, and Security industries. Our product offering

consists of a comprehensive mix of Fasteners & Hardware, Anchors & Kits, Fittings & Stampings, Chemicals & Tapes, and Tools & Specialty Items.

MarketAir, Inc. **Booth 229**

MarketAir, Inc. continually develops products for the professional installation and service of both ducted and ductless AC systems. This includes RoughinBox™ for protecting linesets in minisplit rough in jobs, SuperSleeve for minisplit retrofits, Easy Bend lineset bending tools and Pipe Prop® rooftop support for piping and many other unique products.

National Comfort Institute, Inc. **(NCI)** **Booth 511**

The National Comfort Institute (NCI) and Southern California Edison are partnering to bring contractors cutting-edge training on how to perform higher quality installations and service on residential and commercial HVAC systems. Come visit NCI at Booth #511 to learn how to take advantage of this advanced training. 800-691-1690 / www.NationalComfortInstitute.com.

Olimpia Splendid USA **Booths 403, 405**

Olimpia Splendid who has been in business since 1956, entered the

North American market with its one-of-a-kind product line, Maestro in 2019, and since then this product has been the ideal comfort solution and will be on display at the 2021 IHACI Expo in November. Olimpia Splendid designs and manufactures heating & air conditioning products with the end user's ultimate comfort in mind. Diego Stefani, Director of Sales & Business Development – North America, stated "Olimpia Splendid's company tagline "Home of Comfort" describes our commitment to design efficient, environmentally friendly products, while still maintaining our unique Made in Italy design. Our objective is to be able to offer our customers comfort solutions any time of year, with our one-of-a-kind Maestro Series thru the wall heat pumps". "But we also have some new products that we will be unveiling at this year's show".

Pacific Systems Group **Booths 703, 705, 707**

Pacific Systems Group is an adaptive partner that assists consulting engineers, distributors, mechanical contractors, and building owners in designing HVACR systems, providing efficient and cost effective indoor environmental solutions.

Manufacturers Represented:

Carrier Ductless, Toshiba-Carrier VRF, Carrier VRF, Magic Aire, iAire, Aldes, Beckett, HMAX and Hi-Velocity. Contact: www.psghvac.com; (888) 909-HVAC; info@psghvac.com.

Packard, Inc. **Booth 709**

Packard has been a dominant force in the HVACR industry since 1959. As a master distributor, we bring wholesalers and OEMs innovative, high-quality products that include top industry names and our own exclusive private-label lines. Packard became a product brand of DiversiTech, headquartered in Duluth, Georgia in 2021.

Panasonic Life Solutions **Booth 113**

Panasonic Life Solutions is committed to providing high quality ventilation products to meet constant changing codes. Performance driven ventilation is a key path to a better living environment and a unique must-have value. By helping improve indoor air quality, let's address a major health issue facing our industry together.

Parker Hannifin – **Sporlan Division** **Booth 311**

Parker's ZoomLock® Flame-Free

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Particles Plus Booth 813

Particles Plus engineers and manufactures a line of advanced-technology particle counters and air quality monitors. Added intelligence provides superior performance and extended features. Count On Us for accuracy, quality, reliability and value.

QwikProducts™ by Mainstream Engineering Booth 801

QwikProducts™ will be showcasing:

- QwikSwap® X1, X3 & V3 Universal ECM replacement boards
- QwikPad® for Generators and QwikPad™ for Condensers
- Qwik System Flush® for line set clean-outs
- QwikLug® compressor terminal repair kits
- QwikCheck® 2-second refrigerant acid test kit

• QwikPure TripleGuard™ Industrial grade UV air Purifier/Sanitizer

• QwikShot®, Refrigerant and Oil Treatment

• Qwik608® EPA Training/Certification

• QwikBright™-MC Microchannel coil cleaner

Please stop by Booth #801 to see the QwikPads in person!

Rahn Industries Booth 112

Rahn Industries is a leading HVAC/R coil manufacturer, supplying high quality custom and OEM replacement coils, a full line of immersion and sprayed on protective coatings for coils and equipment, and equipment modifications. Rahn Industries is committed to providing quality products, quick delivery and competitive pricing. Sent from my iPhone

Rapid Duct Testing Booth 509

Looking for HERS, Air balancing, or permits pulled? Rapid Duct Testing opened its doors 15 years ago and has grown every year simply by putting the customer needs first. Greet us at our booth or call 818-552-2050 to discuss our services.

R.E. Michel Company Booth 413

A family business since 1935, we have grown to be one of the leading distributors of HVAC

equipment, parts, and supplies serving customers coast to coast. Our goal is to be the most highly respected distributor of HVAC products. We will achieve our goal by: Providing service that makes us the supplier of choice. Inventory that assures we have the product when and where it's needed. People that are knowledgeable and friendly. Pricing that is fair, accurate, and competitive.

Robertshaw® Booth 804

Robertshaw® offers the highest-quality residential and commercial HVACR controls through trusted brands including Robertshaw, Ranco®, Paragon®, Ranco® Rocket™, Robertshaw® IgnitorPro™ and partnership brands including Mersen, Skytech, Kidde, Tork, and Fenwal. Our portfolio includes new Pro-Series wall thermostats (industry-leading 6-year warranty) and Ranco Refrigeration System Solutions. Visit Robertshaw at booth #804.

Rotobrush International Booth 310

Based in Texas, Rotobrush is the leading manufacturer of air duct cleaning and dryer vent cleaning equipment. With more than two decades of experience, Rotobrush provides contractors with turnkey packages and unique opportunities. Stop by booth #310 to feel the power of

the BrushBeast!

Rottiers Sales Associates Booths 211, 213

DuraVent is a California vent manufacturer. Engineered Excellence, consistently first to the market with new innovations in venting systems.

Shoemaker is a manufacturer of the highest quality registers, grilles and diffusers since 1947. Made in the USA in Cle Elum, Washington.

Polyken/Nashua tapes offer a complete line of UL181 listed tapes.

Modine is a manufacturer of unitary Make-up Air units, Duct Furnaces and Unit Heaters.

PRO1 IAQ is a thermostat company designed for the professional trade. Color coded terminal blocks, large ease to read displays and a free private label color badge program.

UEI Test Instruments offers a complete line of test instruments. The new HUB series will eliminate gauges. Rethink Combustion – Flue Gas Analyzer with direct CO2 measurement.

Smartlock is a manufacturer of a cutting-edge metal to metal sealing technology. These fittings eliminate brazing and flaring without leaks and no special tools required.

RSES / CARSES Booth 504

RSES is the world's leading education, training and certification

association for heating, ventilation, air conditioning and refrigeration professionals. RSES credentials include its Certificate Member and Certificate Member Specialist categories, as well as one of the largest EPA Section 608 certification programs in the industry. Local chapters meet monthly with free educational topics. Visit www.carses.com for details. For more information call 310-600-8800.

Service Roundtable Booth 502

Build your residential service business faster with Service Roundtable. A network of successful contractors, equipment and service providers help you tackle the everyday problems of owning a business. Plus, earn rebates and receive downloadable custom marketing material to make your phone ring! Join today at www.ServiceRoundtable.com.

Sigler, Inc. Booth 701

This year we celebrated the 119th anniversary of modern air conditioning thanks to Willis Carrier. As times have changed, Carrier and Bryant have continued to be in the forefront of new developments as consumer needs and government guidelines evolve. At Sigler, we are proud to partner with the industry leader.

Continued on Page 30

SUSIE EVANS MEMORIAL GOLF TOURNAMENT



FRIDAY OCTOBER 22, 2021
CALIFORNIA COUNTRY CLUB



IN FEBRUARY 2021, IHACI SUFFERED THE LOSS OF SUSIE EVANS WHO SERVED AS EXECUTIVE VICE PRESIDENT FOR OVER 30 YEARS, AND IN HER MEMORY THE ANNUAL GOLF TOURNAMENT WILL NOW BE HELD AS THE SUSIE EVANS MEMORIAL GOLF TOURNAMENT. SUSIE WAS THE HEART AND SOUL OF IHACI AND HAD DEDICATED HER LONG CAREER TO THE BETTERMENT OF THE HVAC INDUSTRY. UNDER HER LEADERSHIP SHE TOOK THE HVAC TRAINING PROGRAM FROM A LOCAL LEVEL TO NOW SERVING CONTRACTORS THROUGHOUT THE STATE OF CALIFORNIA. SHE WAS ALSO INSTRUMENTAL IN PULLING TOGETHER BOTH THE ANNUAL GOLF TOURNAMENT AND TRADE SHOW SO WE WILL HONOR SUSIE'S DEDICATION TO ONE OF HER FAVORITE IHACI EVENTS.

2021 TRAINING CLASS SCHEDULE

CALIFORNIA QUALITY INSTALLATION, QUALITY MAINTENANCE AND QUALITY SERVICE
(CAQI/QM/QS) & NORTH AMERICAN TECHNICIAN EXCELLENCE (NATE)

<p>SOCALGAS, DOWNEY</p> <p>OCTOBER</p> <p> NATE AC/HP Refrigeration & Air Distribution Training</p> <p>(Four-Night Class)</p> <p>Instructors: Mike Griffin / John Dalton</p> <p>Tues., Oct. 5 – Part 1</p> <p>Tues., Oct. 12 – Part 2</p> <p>Tues., Oct. 19 – Part 3</p> <p>Tues., Oct. 26 – Part 4</p>	<p>NOVEMBER</p> <p>Non-Res ATE Training</p> <p>(Two-Night Class)</p> <p>Instructors: Mike Griffin / John Dalton</p> <p>Mon., Nov. 1 – Part 1</p> <p>Thurs., Nov. 4 – Part 2</p> <p>Non-Res MATT Training</p> <p>(Two-Night Class)</p> <p>Instructors: Mike Griffin / John Dalton</p> <p>Mon., Nov. 15 – Part 1</p> <p>Thurs., Nov. 18 – Part 2</p>	<p>SOUTHERN CALIFORNIA EDISON, TULARE</p> <p>OCTOBER</p> <p> NATE Core & Gas Heating Training</p> <p>(Four-Night Class)</p> <p>Instructors: Mitch Bailey / TBA</p> <p>Mon., Oct. 18 – Part 1</p> <p>Tues., Oct. 19 – Part 2</p> <p>Mon., Oct. 25 – Part 3</p> <p>Tues., Oct. 26 – Part 4</p>	<p>SAN DIEGO GAS & ELECTRIC</p> <p>OCTOBER</p> <p>Boiler Module</p> <p>(Two-Night Class)</p> <p>Instructors: Mike Griffin / John Dalton</p> <p>Wed., Oct. 6 – Part 1</p> <p>Thurs., Oct. 7 – Part 2</p> <p>Commercial Refrigeration Module</p> <p>(Two-Night Class)</p> <p>Instructors: Mike Griffin / John Dalton</p> <p>Wed., Oct. 13 – Part 1</p> <p>Thurs., Oct. 14 – Part 2</p>
<p>SOUTHERN CALIFORNIA EDISON, IRWINDALE</p> <p>OCTOBER</p> <p>Air Distribution Module</p> <p>(Four-Night Class)</p> <p>Instructors: Mike Griffin / John Dalton</p> <p>Wed., Oct. 20 – Part 1</p> <p>Thurs., Oct. 21 – Part 2</p> <p>Wed., Oct. 27 – Part 3</p> <p>Thurs., Oct. 28 – Part 4</p>	<p>PACIFIC GAS AND ELECTRIC COMPANY, STOCKTON</p> <p>OCTOBER</p> <p> NATE Core & Gas Heating Training</p> <p>(Four-Night Class)</p> <p>Instructors: Mitch Bailey / TBA</p> <p>Wed., Oct. 20 – Part 1</p> <p>Thurs., Oct. 21 – Part 2</p> <p>Wed., Oct. 27 – Part 3</p> <p>Thurs., Oct. 28 – Part 4</p> <p>NOVEMBER</p> <p> NATE AC/HP Refrigeration & Air Distribution Training</p> <p>(Four-Night Class)</p> <p>Instructors: Mitch Bailey / TBA</p> <p>Wed., Nov. 3 – Part 1</p> <p>Thurs., Nov. 4 – Part 2</p> <p>Wed., Nov. 10 – Part 3</p> <p>Thurs., Nov. 11 – Part 4</p>	<p>NOVEMBER</p> <p> NATE AC/HP Refrigeration & Air Distribution Training</p> <p>(Four-Night Class)</p> <p>Instructors: Mitch Bailey / TBA</p> <p>Mon., Nov. 1 – Part 1</p> <p>Tues., Nov. 2 – Part 2</p> <p>Mon., Nov. 8 – Part 3</p> <p>Tues., Nov. 9 – Part 4</p>	<p>NOVEMBER</p> <p> NATE Core & Gas Heating Training</p> <p>(Four-Night Class)</p> <p>Instructors: Mike Griffin / John Dalton</p> <p>Tues., Nov. 2 – Part 1</p> <p>Wed., Nov. 3 – Part 2</p> <p>Tues., Nov. 9 – Part 3</p> <p>Wed., Nov. 10 – Part 4</p> <p>DECEMBER</p> <p> NATE AC/HP Refrigeration & Air Distribution Training</p> <p>(Four-Night Class)</p> <p>Instructors: Mike Griffin / John Dalton</p> <p>Wed., Dec. 1 – Part 1</p> <p>Thurs., Dec. 2 – Part 2</p> <p>Wed., Dec. 8 – Part 3</p> <p>Thurs., Dec. 9 – Part 4</p>

All Classes Are Being Offered as Webinars

Classes begin at 6:00 PM Pacific Time and are subject to change
Register at www.ihaci.org (Training)

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.

COSPONSORED BY: Institute of Heating and Air Conditioning Industries, Inc., Southern California Gas Company, San Diego Gas & Electric, Southern California Edison and Pacific Gas and Electric Company



Pacific Gas and Electric Company™

IHACI Trade Show Exhibitors

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Sirris Abatement Booth 306

Sirris Abatement provides services for private residences, multi-housing complexes, commercial facilities, public utilities, and governments.

Working closely with homeowners, HVAC contractors, building management, engineers, architects and government agencies, Sirris Abatement ensures strict compliance with regulations and provides the highest standard of control methods when dealing with asbestos and lead.

SoCal P.I.P.E. Trades HVAC/R Booth 313

Piping Industry Progress and Education Trust Fund (P.I.P.E.) is the Labor-Management cooperation committee and trust fund for the unionized plumbing, piping and HVACR industries in Southern California. We are the vehicle through which union contractors and union pipe trades workers advance the industry. Call (800) 457-7473 or go to www.pipe.org.

SoCal Sheet Metal Local 105 Booth 508

The Southern California Sheet Metal JATC is an apprenticeship program training sheet metal workers.

We offer free training and job placement to persons meeting our qualification standards. We also provide manpower to today's HVAC contractor who is signatory to Local Union 105 and to non-signatory contractors on prevailing wage jobs helping them reach their 20% requirement.

Soleus Air Booth 101

Soleus Air revolutionary "Saddle" air conditioner is one of the coolest solutions in this category due to its internal pump progressive cooling cycle. Ultra-quiet, safe, and easy "over the sill" installation, still keeps the window fully operational without losing the view outside. It operates with Wi-Fi, Google Home and Alexa.

Soleus Air makes also available its new Window kit accessory which enables the "Saddle" Air conditioner to be used with Horizontal Sliding Sash Windows, slides side-to-side, without limiting to only Vertical Sliding Window. Check our Booth 101 at IHACI's Trade Show. To view our full product catalog, please visit www.soleusairwest.com.

Southern California Edison Booth 407

Southern California Edison is

one of the largest electric utilities in the United States and a longtime leader in renewable energy and energy efficiency.

With headquarters in Rosemead, Calif., SCE serves approximately 15 million people in a 50,000 square-mile area of central, coastal and Southern California. SCE has provided electric service in the region for 135 years.

SoCal Gas Booth 803

With over 150 years of service, SoCalGas® proudly delivers affordable, reliable, clean, and increasingly renewable natural gas service to 21.8 million customers across 24,000 square miles of Central and Southern California.

We understand the importance of caring for the environment while looking out for our customers. That's why we're working hard to ensure California's clean energy future maintains a balanced strategy— one that achieves greenhouse gas reductions while keeping energy affordable for families and businesses. SoCalGas offers energy efficiency programs that provide customers with incentives for making significant upgrades to their homes as well as buying more efficient appliances. For more information visit socalgas.com/upgrade.

Style Crest, Inc. - Revolv Booth 203

Revolv® represents the sum of Style Crest's mobile home HVAC expertise, assembled under a single brand, and includes split-system air conditioners and heat pump condensers, indoor coils, furnaces, line sets, compact package coil cabinets and accessories. Revolv® advanced indoor comfort products are exclusively engineered for the manufactured housing industry.

<https://www.stylecrestinc.com/about-revolv/>

SUPCO (Sealed Unit Parts Co.) Booth 329

Come explore SUPCO® TradeFox™, our exclusive product line boasting innovative products invented by real HVAC technicians. Through our SUPCO® TradeFox™ Inventor Program, we help technicians bring their inventions to life through our years of experience in engineering, manufacturing, marketing, and our expansive distribution reach. Visit supcotradefox.com to learn more.

TECH Clean California Booth 409

TECH Clean California pays contractors valuable incentives for

installing residential Heat Pump HVAC and Heat Pump Water Heaters. It's a hub for training and contractor support and aims to accelerate the adoption of heat pumps for space and water heating in residential buildings across California. Visit us at Booth #409!

Thermaflex Booth 608

Thermaflex is built stronger to last longer. When you choose Thermaflex, you're backed by a company with more than 60 years of flexible duct experience. We offer the most comprehensive product line of flexible duct products, ideal for offices, schools, hospitals, and other commercial installations.

TruTech Tools Booth 425

TruTech Tools makes it fast and easy for technicians to work at a higher level. We carry a hand-picked selection of quality tools and measuring instruments. We help technicians connect with the best practices in the industry via our support network: phone, live chat, videos, web resources, and working with influencers.

TSI, Inc. Booth 100

TSI Incorporated is an industry leader in precision measurement instrumentation, used for monitoring IAQ parameters such as temperature, humidity, outdoor air calculations, carbon dioxide, carbon monoxide, and particulate matter. The new AirAssure™ IAQ Monitor continuously measures factors critical to understanding your indoor environment, with data at your fingertips in real-time.

Uniweld Products, Inc. Booth 613

Since 1949 Uniweld has employed over 300 workers who help design, manufacture, and distribute quality U.S. made products! Stop by the Uniweld booth to see their HVAC products: New Electric/Manual Ratchet + Clutch Flaring Tool, SmarTech Digital Refrigerant Scale and Take the EZ-Turn Challenge! Sign up for a free hat.

US Air Conditioning Distributors Booth 401

US Air Conditioning Distributors is your One-Stop-Shop for equipment, compressors, supplies and parts for all brands of HVAC equipment. With 50 locations in California, Nevada, Utah, Idaho and Arizona, US Air Condition-

ing Distributors is one of the largest HVAC distributors in the country. At the show we will feature York, Luxaire, Guardian, Samsung and Marvair equipment; Source 1 Parts, QuietCool fans, and supply lines such as Modular Metals, Diversitech, Nu-Calgon, Malco, Venstar and Hart & Cooley. Count on US Air to have what you need, when you need it, with free next-day delivery, crane service, incredible inventory selection and experienced, friendly personnel. Booth #401.

Visual Service by IHACI (VS) Booth TBD

Visual Service by IHACI (VS) is a contractor service platform designed to integrate into the business model of contractors by providing a pathway for live technician mentoring of entry level apprentices to senior technicians. VS guides technicians through different stages of HVAC troubleshooting from basic triage to pressure profiles of duct systems and airflow calculations. Using Bluetooth tools and live video, VS provides a platform for proper supervision, commissioning, and certification of HVAC systems via ASHRAE and ACCA standards, in addition to those required by California Title 24. Come visit our booth to see the future of our industry.

Walter's Mercedes-Benz Sprinter of Riverside Booth 129

More Professionals choose Walter's Mercedes-Benz Sprinter of Riverside.

Walter's Mercedes-Benz Sprinter of Riverside is an authorized dealer of Sprinter and Metris cargo vans. We're dedicated to the needs of heating, ventilation, and air conditioning professionals. We are proud to display at this year's IHACI Trade Show. Visit us at Booth #129, or contact our Sales Manager, Isaid Barragan IBarragan@waltsmb.com

We are family-owned and operated, celebrating over 50 years of selling and servicing Mercedes-Benz vans. As a leading provider of the Sprinter brand, you can be sure to get the finest in customer service at Walter's Mercedes-Benz Sprinter of Riverside. www.WaltersMercedesBenzSprinter.com.

Wright Sales Booth 602, 603, 604, 605, 606, 607, 611

Wright Sales Company is an industry leading manufacturer rep agency representing top manufacturers in the pacific western states of CA, AZ, NV, HI, & NM.

• Owens Corning From Duct

Liner and Wrap to Duct Board and more – Owens Corning has an extensive portfolio of solutions to meet all of your air distribution needs. Put more money in your pocket with ProCat® Professional Loosefill Insulation System. It is designed for contractors for use in open attic and closed cavity applications – AOR or RNC.

• ZONEFIRST's complete line of Zoning Systems for residential, commercial, retrofit and new construction applications are noted below under ZONEFIRST.

• Navac is a manufacturer of HVAC/R tools committed to technical innovation and R&D to deliver solutions that have taken over HVAC/R social media platforms. So, swing by for hands-on tool demonstrations and training with NAVAC_TOOL_GUY (IG) to see why NAVAC dares to be different.

• Purolator is a premier source for HVAC air filtration for home, commercial, industrial and institutional applications. With MERV ratings from MERV 4 to HEPA, the Purolator comprehensive line offers products in every category from disposable panel filters and pleated filters to high efficiency extended surface filters, including a wide variety of specialized applications.

• RGF's comprehensive line of Air purification has all your solutions for residential, commercial, industrial, institutional, and healthcare indoor air quality applications. Clean air is life – let us help protect yours. Stop by our booth to enter our raffle to win an RGF REME HALO LED.

• RectorSeal is home to some of your favorite brands, Aspen, AC Leak Freeze, Slimduct, RSH Surge Protection, Safe-T-Switch, Novent and more. Stop by the booth to spin the sample wheel and win while learning more about how to stock your trucks to make money.

• TRUaire manufacturers the highest quality, most affordable residential and commercial grilles, registers and diffusers. Stop by our booth to see the difference that our 100% Powdercoat coverage, Smoothglide technology, Zinc-coated rivets, and no spotweld marks made on your next job.

ZONEFIRST Zone Controls Booth 609

ZONEFIRST's complete line of Zoning Systems for residential, commercial, retrofit and new construction applications. The NEW By-Pass Eliminator meets Title 24 requirements; stop by and see a demonstration of our easy-to-use Plug-In Play system that has revolutionized the zoning industry.

Help Wanted



Company Overview:
The R.E. Michel Company was founded in Baltimore, Maryland in 1935 as a supplier to the home heating oil burner industry. Still family owned and operated, we have grown to be one of our nation's leading wholesale distributors of HVACR equipment, parts and supplies and we have more than 250 locations nationwide.
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• Developing and building strong customer relationships
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• Valid Driver's License and reliable vehicle is a must
• Excellent people, communication and computer skills

Hiring: Counter Sales and Warehouse/
Drivers for Van Nuys, CA! Multiple openings available!
• Understand of heating and cooling matrix
• Basic math skills
• Knowledge of material handling equipment
• Valid driver's license, safe driving record

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HVAC Business for Sale
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- Aldes North America – Bradenton, FL
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- Delta 4 Environmental, Inc. – Santa Fe Springs, CA
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- Profit Rhino – Vestal, NY
- Quick Heating Cooling – Sunnyvale, CA
- Renales Heating and Air – Bonita, CA
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- Retrofit Service Company, Inc. – Rancho Cucamonga, CA
- Style Crest, Inc. – Fremont, OH
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- Tradewinds Climate Systems – Doral, FL

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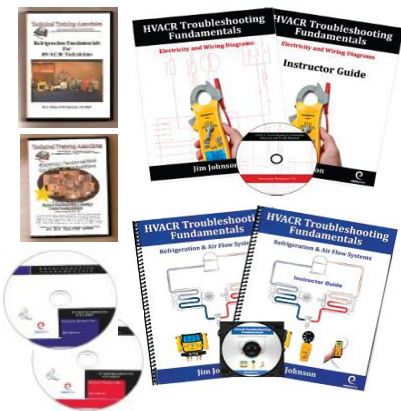


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