

INDOOR COMFORT

NOVEMBER 2021

THE VOICE OF THE INDUSTRY

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NEWS

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

IHACI'S 41st Annual HVAC/R/SM
Performance Contracting Product and Equipment Trade Show

HONORING OUR HVAC ESSENTIAL WORKERS

Tuesday, November 16, 2021

Pasadena Convention Center

11:00 a.m. - 7:00 p.m.

FACE COVERING REQUIRED

Exhibitor Directory	26
IHACI Hands-On Training Demo	47
Off-Site Parking/Trade Show Floor Plan	48
Seminar Schedule	49



Produced by: Institute of Heating
and Air Conditioning Industries, Inc.
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XR16 LOW PROFILE, SIDE DISCHARGE

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It starts with joining HVAC contractors,
dealers, managers and principals at the
2022 RUUD® Virtual Dealer Meeting

2022 RUUD® VIRTUAL DEALER MEETING

WEDNESDAY, DECEMBER 8, 2021

8:00 A.M. – 11:00 A.M. P.S.T. • 7:30 A.M. LOGIN*

*9 a.m. - 11 a.m. AZ time

Plug in to the action at our 2022 Virtual Dealer Meeting as we prepare for major industry changes coming in 2022 and 2023.

- ◆ Dealer Program Overview
- ◆ Lead Generation Tools and Marketing
- ◆ CashBack / Financing Programs
- ◆ Product and Industry Changes
- ◆ Discover all the advantages to becoming a Ruud Pro Partner™



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SOUTHERN CALIFORNIA
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Industry News



CALIFORNIA



California Mandates Acceptance Testing

Sacramento, Calif. – Effective October 1, 2021, the state of California mandated Non-Residential Mechanical Acceptance Testing of the mechanical systems that are installed as part of new construc-

tion, renovation, and replacement projects.

The mandatory requirement states that any person performing a mechanical systems acceptance test in a nonresidential building must be certified as an Acceptance Test Technician. The California Energy Commission expects authorities having jurisdiction to enforce the mechanical systems Acceptance Test Technician requirements to all nonresidential permit applications submitted.

Prior to applying for a permit to install non-residential HVAC equipment in California, the appropriate compliance forms must be completed and submitted through an online registry. Permit-issuing

authorities require that acceptance testing be performed before a permit can be closed. Certified Acceptance Test Technicians must be employed by Certified Acceptance Test Employers.

Registry Roles

- **ATTCP:** Acceptance Test Technician Certification Provider (Certifier). These organizations are responsible for screening, training, certifying, and re-certifying Acceptance Test Technicians (ATT) and Acceptance Test Employers (ATE). They are also responsible for providing oversight and accountability functions, as well as maintaining a database of ATT contact information and certification status.

- **ATE:** Acceptance Test Employer (Certified Employer or their Appointed Agent).

- **Document Author:** Anyone authorized by the Acceptance Test Employer to make entries in the registry.

- **MATT:** Mechanical Acceptance Testing Technician.

- **Responsible Person:** System Specifier (Must be a California licensed Mechanical Engineer, Division 3 Contractor, Architect, or their Appointed Agent).

- **Bid Acceptor:** Anyone appointed by the Responsible person to accept and award bids.

- **Enforcement Agency:** The local jurisdiction having authority over the project (city or county).

specific portions of the system and/or its controls to ensure proper and efficient operation. Properly installed and configured system and control elements help ensure the safety, comfort and health of the structure and its occupants.

Successful completion of an acceptance test verifies that the system element(s) being tested is(are) in compliance with, and conform to, the 2019 Building Energy Efficiency Standards (BEES), and the Nonresidential Appendix, NA7, as specified on the approved/submitted project plans, design drawings, system specifications and other supporting documents.

We are already commissioning a system. How is this different?

Acceptance testing is not intended to replace the commissioning process. Acceptance testing is often a part of the commissioning process.

Why do we need to do it?

To ensure that equipment, controls, and systems operate as required under pre-established standards, to validate maximum operating efficiencies. In addition, acceptance testing is the law!

Do technicians need to be certified?

Yes. Technicians need to pass written and hands-on examinations to become certified to conduct acceptance tests.

Do employers need to be certified?

Yes. Employers need to become certified to participate in the acceptance testing process.

Is acceptance testing optional?

No. For all projects that fall under the acceptance testing requirement umbrella, acceptance testing is mandatory. Enforcement of mechanical acceptance testing guidelines applies to all non-residential permits, applied for, on or after October 1, 2021.

What happens if acceptance testing is not performed when required?

The certificate of occupancy (COO) for the project will not be issued.

Find the GOLD KEY and UNLOCK a PRIZE!

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

Email your response to:
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Magic Aire manufactures air handlers, fan coils, unit ventilators and related products. Our operations are wholly contained in Wichita Falls, Texas. Magic Aire's world class customer support and operations delivers on time every time, with 99.8% on time delivery since 2009. You have enough to worry about, allow us to take care of this for you.



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*Units are built in 10 business days and take 3 to 7 days to ship from Texas. *Quick Ship orders have some feature limitations. *Quick Ship not available for units with phenolic coils or electric heat. *Quick ship orders are non-cancelable & non-returnable. *Lead time subject to change, check lead time bulletin for current offerings. *Actual scheduled ship dates will be defined via order acknowledgement, pending resolution of any questions or issues with order.

Southern CA Magic Aire Manufacturers Rep: Bobby Hahn Danny Paice Jay Torres Janell DiResta

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Continued on Page 6



See Us at IHACI

November 16, 2021 Pasadena Convention Center, Pasadena CA

Booth 417 & 419



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Continued from Page 4

What type of jobs fall under Title 24?

In general, acceptance testing is required for all non-residential equipment being installed as part of a new construction, renovation, or retrofit project.

Learn More

If you have not yet positioned yourself to participate in the Acceptance Testing Process, you can learn during the **IHACI Trade Show, November 16, 2021** in Pasadena, California. During the event, the following exhibitors are among those who will be able to answer your questions about the Acceptance Testing Process; Brownson Technical School, ESCO Institute, HVAC Excellence, National

Environmental Balancing Bureau (NEBB), and the Refrigeration Engineers Safety Society (RESSES). For additional information, visit escodocreg.com or call (800) 726-9696.

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Fieldpiece University Launches Online

Orange, Calif. – Fieldpiece Instruments, the leading manufacturer of professional-grade tools for HVACR pros by HVACR pros, announces the launch of Fieldpiece University – a new online training platform dedicated to providing application-based training to HVACR field pros, distributors and sales reps to help them do their job easier, faster, and better.

Designed to be the go-to resource for HVACR, Fieldpiece

University features two modules: one channel to help HVACR distributors, sales reps and counter reps match HVACR technicians with the right tools for the job; and another to provide technicians in the field technical training to become masters of the trade with the latest best practices, industry insights, tips and tools to work smarter, not harder.

“Every day, we talk to HVACR professionals about how we can make their lives easier in the field,” says Tony Gonzalez, Technical Training Manager at Fieldpiece Instruments. “These conversations encouraged us to develop a new online training tool that anyone can use to improve their skills – whether you’re behind the sales counter talking to a contractor about a vacuum pump, or you work in the field and need to know

the proper way to use a stand-alone vacuum gauge while performing a system evacuation.”

The Fieldpiece University platform was built in partnership with BlueVolt, a company that specializes in learning management system (LMS) tools used by more than 5,000 companies to educate professionals from a variety of industries. Featuring interactive training modules, helpful video content, and value-added resources with quizzes and assessments to cement new learning, the platform also offers technicians an opportunity to earn continuing education (CE) credits for select coursework.

The distributor module helps wholesalers and distributors better understand what field professionals are looking for out of their tools and offers insight to help a more knowledgeable sales staff better

match customers with the right tools for the job.

Fieldpiece University’s field technician module offers training on specific products, techniques and applications, as well as myriad ways to extend HVACR industry knowledge and insight to stay ahead of the curve. CE credit offerings ensure field pros stay current with new technology, laws and regulations.

Fieldpiece University can be accessed at home on a desktop or while on break from work via a mobile device, making the program convenient anytime, anywhere. The platform offers a wide range of learning modules today, with new content expected to be added monthly to respond to industry demands and help keep industry professionals at the top of their game long-term. In-person trainings are also available via special request.

First time distributor or end user learners new to BlueVolt can sign up here for a free account: <https://fieldpiece.tiny.us/New>.

End users already with an account on BlueVolt can add Fieldpiece University to their BlueVolt account: <https://fieldpiece.tiny.us/Tech>

Distributors already with an account on BlueVolt can add Fieldpiece University to their BlueVolt account: <https://fieldpiece.tiny.us/Dist>.

For more information about Fieldpiece University, please visit: <https://go.bluevolt.com/fieldpiece/s/>.

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XOi Technologies Partners with ServiceTitan

Glendale, Calif. – XOi Technologies announced a strategic partnership with ServiceTitan.

“In today’s economic climate, contractors are looking for a single, all-inclusive technology solution that streamlines the collection and management of invaluable jobsite data,” said Aaron Salow, XOi founder and CEO. “Because of its outstanding products and commitment to truly serving the industry, ServiceTitan has built a network of contractors around the world, and we’re proud they’ve selected us to be part of their community.”

“We’re excited to partner with XOi to equip our collective customers with even

Continued on Page 8



TACKLE TOUGH JOBS WITH CONFIDENCE

Never show up to a job empty-handed – stock your toolbox with the tapes you need for a range of HVAC applications. Whether it’s a blizzard or a heat wave, choosing the right HVAC tape for your installation or repair is critical. Shurtape® preps you for success with a full portfolio of high-quality and innovative tape solutions for anything the job demands. Find a tape at Shurtape.com.

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This program is funded by California utility customers and administered by Southern California Gas Company under the auspices of the California Public Utilities Commission. Program funds, including any funds utilized for rebates or incentives, will be allocated on a first-come, first-served basis until December 31, 2021 or until such funds are no longer available. This program may be modified or terminated without prior notice. The selection, purchase, and ownership of goods are the sole responsibility of customer. SoCalGas makes no warranty, whether express or implied, including the warranty of merchantability or fitness for a particular purpose, of goods selected by customer. Customers who choose to participate in this program not obligated to purchase any additional goods offered by manufacturer, vendor, service provider, or any other third party. Eligibility requirements apply; see the program conditions for details.



Industry News

Continued from Page 6

more actionable data and insights, collected seamlessly from the field,” said Vahe Kuzoyan, co-founder and president of ServiceTitan. “We expect these insights to power better business outcomes for ServiceTitan customers and, as a result, power an even higher quality experience for business owners & home owners.”

Bluon Acquires XREF Publishing

Irvine, Calif. – Bluon has acquired XREF Publishing Company.

“The XREF acquisition marks a huge milestone for Bluon, in our evolution from a sticky support platform loved by technicians, to enabling the existing marketplace between contractors and local dis-

tributors to operate much more effectively and efficiently,” said Scott Pierson, a distribution pioneer and executive vice president at Bluon.

CoolSys Earns Xcel Efficiency Award

Brea, Calif. – CoolSys announced that the Denver division of CoolSys Energy Solutions has earned the 2021 Energy Efficiency Partner Award from Xcel Energy for its work with Albertsons Companies in the Denver metro region.

“It’s rewarding for our team to be recognized for our commitment to excellence in developing effective energy-saving solutions for one of our long-term and most strategic partners,” said Anthony Tippins, PE, president of CoolSys Energy Solutions.

Gryphon Investors Buy Southern HVAC

San Francisco, Calif. – Gryphon Investors acquired Southern HVAC from MSouth Equity Partners.

Southern HVAC and Right Time will be owned by NAEHS (North American Essential Home Services), but will continue to operate independently, retaining their existing brand names and current management teams, while leveraging the combined scale and scope of the two businesses. As part of the transaction, Ian McKeen has become CEO of NAEHS. McKeen, a dual U.S. and Canadian citizen, has spent more than 25 years in the home services industry and previously served as president and chief operating officer of Service Experts.

“The holding company structure will allow each company to share

in best practices and benefit from scale advantages, while maintaining the separate strategies and management teams that have driven their success to date,” said McKeen. “I look forward to working with Southern HVAC CEO Bryan Benak and Right Time CEO Craig Goettler to continue building two of the best home services businesses in North America.”

“Residential HVAC, plumbing, and electrical services remains a highly fragmented industry, with demand growth being driven as consumers spend more time in their homes,” said Benak. “We aim to expand our position as the leading residential services provider across Texas, the Southeastern U.S., and Midwestern U.S. with support from Gryphon, Ian, and Right Time.”

“We continue to enjoy our part-

nership with Gryphon and are excited about the opportunity to collaborate with the Southern HVAC management team,” said Goettler.

“The acquisition of Southern HVAC represents an excellent strategic fit for Gryphon’s North American residential services strategy and is highly complementary to Right Time, which has performed ahead of expectations since our investment this past December,” said Alex Earls, Gryphon deal partner, and Jeff Balagna, Gryphon operating partner. “Common ownership of both of these companies by NAEHS should create significant value for stakeholders of both companies, and we are excited as part of this investment to support the organic and acquisition strategies of Southern HVAC and Right Time.”

“Bryan Benak and his team at Southern HVAC were critical to the value creation we experienced during our investment and in building one of the largest residential HVAC platforms in the South and Midwest through organic growth and a buy-and-build strategy,” said Charles Stubbs, an MSouth Partner. “We were fortunate to partner with such an outstanding management team, and we look forward to watching their continued success.”

EXPAND YOUR OPPORTUNITIES WITH AIR DUCT CLEANING

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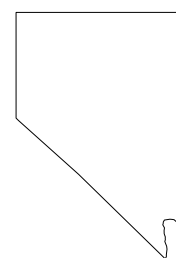
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NEVADA



NevadaNano Forms Partnership with Emerson

Reno, Nev. – NevadaNano announced its partnership with Emerson to jointly develop refrigerant gas detector products.

“We are proud to partner with Emerson to develop essential solutions that can help lower the impact of existing HVACR equipment on the global environment and facilitate the safe use of low GWP refrigerant gases,” said Ralph Whitten, CEO of NevadaNano.

“Our solution enables original equipment manufacturers to have their product line compli-

Continued on Page 10

SAMSUNG

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WindFree™ for DVM S

What is WindFree™ Cooling Technology?

Samsung's exclusive WindFree™ Cooling technology maintains the desired temperature and eliminates cold drafts by delivering air through micro holes on the unit's fascia panel when the louver(s) are closed, producing a gentle flow of air defined as "still air." WindFree™ operation is available in cooling mode only.

WindFree™ Products:



WindFree™ Pro

- Available capacities: 5K, 7K, 9K, 12K, 15K, 18K, 24K, and 28K Btu/h
- Our new indoor unit design incorporates more interlocking components in place of threaded fasteners to reduce the time and effort it takes to install and service a system.
- Motorized vertical swing (up/down) and horizontal swing (left/right) louvers



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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*The WindFree™ unit delivers an air current that is under 0.15 m/s while in WindFree™ mode. Air velocity that is below 0.15 m/s is considered "still air" as defined by ASHRAE 55-2013 (American Society of Heating, Refrigerating, and Air-Conditioning Engineers). WFFL 03.2021-V1 © 2021 Samsung HVAC

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Industry News

Continued from Page 8

ant with federal HFC phasedown regulations known as the AIM act,” said John Rhodes, group president, Digital & Connected Technologies for Emerson. “The mandate shifts the industry from high-GWP to lower-GWP refrigerants, including mildly flammable A2L refrigerants.”

TEXAS



RectorSeal Announces New Product Warranty

Houston, Texas – RectorSeal now offers a three-year limited warranty

across an extensive product line. The three-year limited warranty represents the minimum coverage offered by RectorSeal.

“Our company is well known for offering innovative products, so it was natural to apply that thinking to our limited warranty coverage,” said Jeff Underwood, senior vice president of sales and marketing at RectorSeal. “Given the product quality control procedures we employ, we’re confident that offering a three-year limited warranty on select products demonstrates our dedication to provide our customers best in class products and support. The Limited Warranty coverage not only defines the products that we offer but is a reflection on the strength and innovation associated with the entire company.”

No registration is required to activate any of the limited warranties offered by RectorSeal.

“Along with providing outstanding limited warranty coverage, we

wanted to make the warranty claims process as easy as possible,” said Underwood. “Ours is not a multi-step process. The entire claiming process takes only a few minutes.”

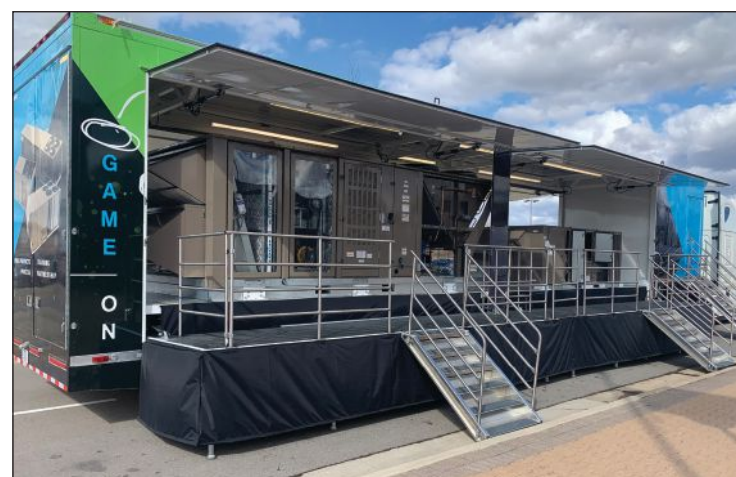
All standard warranty claims are administered by the local RectorSeal distributor or sales representative.

NATIONAL



Johnson Controls Launches Roadshow

Milwaukee, Wisc. – On September 8, Johnson Controls, kicked off its 2021 ‘Game On’ Roadshow in Milwaukee, Wisc., where almost 60 attendees participated in hands-on



THE JOHNSON CONTROLS ‘GAME ON’ ROADSHOW TRAILER.

learning experiences with commercial HVAC rooftop units from Johnson Controls, YORK, and TempMaster. The roadshow tour brings the newly extended rooftop unit portfolio to locations across the U.S., including Chicago, Denver and Phoenix, among others.

As part of the tour, the 53-foot ‘Game On’ trailer houses full-size

displays of the Choice 15-27.5 ton and Select 27.5-50 ton commercial rooftop units to give visitors hands-on interactions with the equipment. The agenda also includes interactive experiences, including augmented reality, featuring the Premier 25-80 ton rooftop units, variable air volume (VAV) products, and the Verasys building controls system – all part of Johnson Controls connect suite of OpenBlue technologies.

“The ‘Game On’ Roadshow is an immersive, mixed-use experience that brings cutting-edge Johnson Controls, YORK, and TempMaster products directly to our customers in a meaningful way and provides hands-on opportunities to learn about the latest technologies and innovations,” said Doug Schuster, Vice President and General Manager, Ducted Systems, Johnson Controls. “This is the culmination of years of planning and hard work to show our customers that Johnson Controls is here to help them win.”

.....

ARS to Honor Vets with Home Makeover Services

Memphis, Tenn. – ARS, one of the nation’s largest providers of air conditioning, heating, and plumbing services, announces its ARS Cares Saluting Our Veterans program. In special recognition of Veterans Day, ARS/Rescue Rooter and its network of brands are recognizing the heroes who bravely have or are currently serving our country by awarding free HVAC systems and water heaters to deserving men and women across the company’s network in 24 states.

ARS is requesting the help of the general public to nomi-

Continued on Page 12

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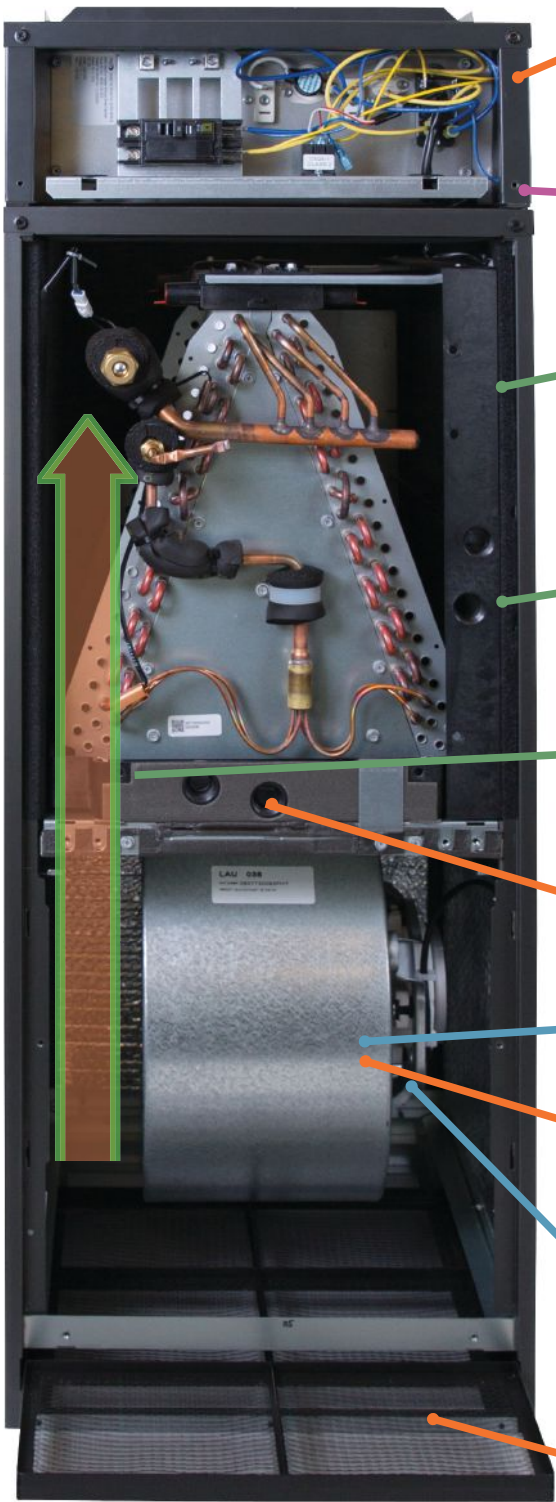
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Continued from Page 10

nate veterans who are in need of a new HVAC system or water heater, as individuals can make nominations for the ARS Cares Saluting Our Veterans Program via ars.com/ars-cares.

“Our Veterans have done everything asked of them in their mission to serve our country, and at ARS we consider it our privilege to give back to these courageous men and women,” said Scott Boose, CEO, ARS/Rescue Rooter. “These individuals and their families deserve to have their homes be a place of comfort and refuge, and we feel this program is a meaningful step in making that possible. In addi-

tion to the Saluting Our Veterans Program, ARS is also committed to the hiring of Veterans. Since 2017, ARS has hired at least 250 veterans annually, and we look to double that number in 2022.”

The nomination period closed on Friday, October 15, 2021. ARS’s national network of brands then selected recipients in each entry market, and selected veterans were notified the week of October 18, 2021 with installations happening in early November in honor of Veterans Day.

The ARS Cares initiative was launched in 2016 to cultivate positive relationships with communities where we live, work, and play. Since that time, more than

150 home services makeovers have been completed, donating more than \$1 million of HVAC systems and water heaters to deserving recipients.

To learn more about ARS Cares and view official Terms & Conditions, visit ars.com/ars-cares.

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Danfoss Honors Sheridan College with EnVisioneer of the Year Award

Baltimore, Md. – Danfoss has named Sheridan College in Oakville, Ontario, as its eleventh EnVisioneer of the Year. Sheridan College is using pre-engineered, factory-built Energy Transfer Stations (ETS) from Danfoss in its recently upgraded district heating system.

In 2016, Sheridan College began a three-year project to decommission its nearly 50-year-old steam plant that served six of its buildings with a new third-generation hot water district heating system capable of serving centralized heat to the entire campus. It elected to utilize energy transfer stations – the interconnected system of heat exchangers, valves, pumps, programmable controller, piping, and controllers that takes the central heat and transfers it into individual buildings.

“Our old steam plant was experiencing more than 65% heat loss throughout the system,” said Herbert Sinnock, Director - Sustainability, Sheridan College. “By converting to a hot water system, we have reduced our annual natural gas consumption by more than 280,000m³ – which equates to an annual carbon reduction of 530 tons. And we expect to further increase energy savings as we optimize and expand the system throughout the upcoming heating seasons. Plus, the Energy Transfer Stations from Danfoss allow for intelligent, granular control of the individual building supply water temperatures, delta T, and flow for both heating and domestic hot water.”

“Danfoss is excited about the success Sheridan College has found in environmentally-friendly district heating,” said Jeff Flannery, business development manager at Danfoss. “Danfoss has extensive history in district energy technologies around the world, and we’ve built on that knowledge to bring factory-designed and locally-built energy transfer stations to the North American market. This technology enables us to ensure

system uptime and performance, optimize efficiency, and facilitate code compliance, start-up and commissioning.”

The award was presented at Sheridan’s Trafalgar campus in Oakville by John Galyen, president of Danfoss North America. Herbert Sinnock, Sheridan’s director of sustainability, accepted the honor on behalf of Sheridan. The official presentation was postponed due to the pandemic.

“This is the first time we’ve presented our EnVisioneer of the Year award to an end user for their success in implementing new district heating technology,” said John Galyen, president – North America, Danfoss. “Danfoss has been engineering district energy systems and technologies for global installations for more than 80 years, but the potential in the North American market has only recently begun emerging and is greatest in campus and microgrid environments. District heating offers tremendous opportunity to look beyond the component or building to even greater levels of energy efficiency and decarbonization.”

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Diversified CPC International Urges EPA to Level Playing Field

Channahon, Ill. – Diversified CPC International (DCPC) is urging the United States Environmental Protection Agency (EPA) to empower domestic manufacturers of products with hydrofluorocarbons (HFCs) to fairly compete with foreign manufacturers during the HFC phasedown, which goes into effect January 1, 2022.

The phasedown is part of the American Innovation and Manufacturing (AIM) Act, which was enacted in December 2020 to reduce HFC production and consumption by 85% over the next 15 years through an allowance and trading program. However, the baseline for the allowance structure does not include imported products containing HFCs (IPC). A final rule establishing the trading system is expected before the end of September.

“We understand that the EPA is required by the AIM Act to restrict the supply of HFCs (including imports) in the U.S.,” said Bill Auriemma, president and CEO of DCPC, in his communication to the director of the EPA’s Office of Air and Radiation.

“Therefore, we suggest the EPA must also require allowances for IPC starting in 2022 to keep

with the intent of the AIM Act, which is to keep U.S. workers and manufacturers competitive with (imported) products which are sold in the U.S.

“To do otherwise, or to delay in addressing this key issue until 2024, will result in an unlevel playing field for U.S. manufacturers. The negative impact of this type of error will include the potential loss of tens of thousands of good-paying American manufacturing jobs and a substantial reduction in tax revenue for the U.S.”

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HARDI Announces Annual Conference Agenda, Speakers

Columbus, Ohio – Heating, Air-conditioning & Refrigeration Distributors International (HARDI) has released the complete agenda and speaker lineup for the 2021 Annual Conference: “Motion: Find Your Direction,” Dec. 4–7.


This year’s agenda focuses on three key themes: Catalysts: Forces Igniting Motion, Friction: Forces Slowing Progress, and Accelerants: Forces Enabling Quick Industry Response. Each day of conference presentations will focus on one of the three conference themes.

Kicking off the conference is keynote speaker, Lisa Bodell, who will present “The Great Reset.” This session will explain why some of the best innovations come from times of change and resource constraint.

The 2021 closing keynote speaker is Alex Banayan, international best-selling author of “The Third Door.”

“We’re seeing industry disruption at unparalleled rates,” said Emily Saving, HARDI’s executive vice president and curator of the Motion agenda. “With this conference, it is our intention to allow attendees to slow down and examine some of the major forces of change from multiple points of view. Are the forces impacting our environment positive, negative, or perhaps more nuanced? How will each member company respond? We feel our conference will give members the chance to examine the landscape of change and determine their best path forward.”

In addition to keynote speakers, the agenda will feature several additional featured speakers and panel sessions that will cover issues impacting the industry including industry mergers and acquisitions, government regulations, contractor needs, workforce shortage, supply chain disruptions, e-commerce, company culture, and more. In



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Industry News

addition, HARDI will feature multiple sessions that share its 2021 State of the Channel findings.

Malco Products Announces 2021 HVAC Trade-Pro of Year Winners

Annandale, Minn. – Malco Products, SBC, announced the winners of its annual HVAC Trade-Pro of the Year Award program.

The program recognized five top HVAC contractors and technicians from across the U.S.:

- S. Thomas Tobias, company engineer & vice president, Teleco, Dayton, Ohio

- Tim Hardy, owner, Quality Air Services, LLC, Hokes Bluff, Alabama

- Christopher Muhammad, owner & lead installer, Going Green Home Solutions, Chicago, Illinois

- Brock Reimer, HVAC installer, Waconia Comfort, Glencoe, Minnesota

- Mark Williamson, service manager, Shafer's HVAC, Dayton, Pennsylvania

"This year's HVAC Trade-Pro of the Year nominees are great representatives of excellence in the HVAC industry," said Malco president and CEO Rich Benninghoff. "Malco is proud to honor their commitment to providing the highest level of service to both their customers and local communities, even throughout some of the most challenging times we have ever faced."

Each of the winners will receive a Malco tool kit valued at \$1,000, awarded by their local distributor. Nominations for Malco's 2022 HVAC Trade-Pro of the Year program will open in February 2022.

RIDGID Donates School Supplies to School District

Elyria, Ohio – As part of its ongoing commitment to support education, RIDGID®, a part of Emerson's professional tools portfolio, and its employees donated a variety of school supplies to the Elyria City School District as part of a back-to-school supply drive sponsored by Mosaic, an Emerson employee resource group

focused on serving the community, celebrating cultural diversity, and supporting future leaders through educational initiatives. The supplies, including writing utensils, glue sticks, scissors and backpacks, will be used in elementary school classrooms across the district so all students have the resources needed to learn and succeed.

"RIDGID is proud to be able to support Elyria students by providing additional school supplies to classrooms through our Mosaic school supply drive," said Manira-

jan Manivannan, sr. project manager, Professional Tools and Founder/Global Chair, Mosaic for Emerson. "One of our goals through Mosaic is to take part in activities that bring us together as a community and embrace how our diverse cultures make anything possible."

As part of the donation, Emerson's Mosaic team created special age-appropriate activity sheets for young students that encouraged them to welcome inclusive cultures within their classrooms. "We want to provide the next generation of lead-

ers with information regarding the benefits of cultural diversity and empathy," said Manivannan.

As part of RIDGID's ongoing commitment to education and fostering the skills of the next generation, employees regularly volunteer in the school district and demonstrate the role

Continued on Page 14



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Continued from Page 13

science, technology, engineering and math (STEM) plays in manufacturing through student tours at its state-of-the-art manufacturing center.

Over the years, RIDGID has also sponsored many other key projects with the school district, including a technology lab, new computer equipment for students, and the district's Maker Space – a learning area dedicated to fostering STEM education.

“We’re thrilled to have RIDGID’s support on such an important initiative. These extra supplies will go a long way in helping teachers and students focus on learning and eliminate concern over whether they will have the resources needed to make it through

the school year,” said Amy Higgins, communications director, Elyria Schools.

To learn more about RIDGID, visit RIDGID.com.

York Partners with Google to Donate Equipment to Homes of Injured Veterans

Milwaukee, Wisc. – The York brand of Johnson Controls has partnered with Google Nest Pro to donate smart home products in mortgage-free homes gifted to veterans through the non-profit organization, Building Homes for Heroes.

Through the newly established

partnership with Google, York contractors will donate their time to install various Google Nest products into the veterans’ homes to help create a safe, connected home they can live comfortably in despite their injuries. Google will be donating a variety of equipment to different Building Homes for Heroes veterans, including the Nest Learning Thermostat, Nest Protect smoke and carbon monoxide detector, Nest Hello Doorbell, Nest x Yale Locks, Nest Minis, and Nest Hub Max.

“We’re incredibly grateful to have the opportunity to provide heating and cooling to nearly 120 injured men and women who have served our country over the past eight years through Building Homes for Heroes,” said Doug Schuster, vice president and general

manager, Ducted Systems, Johnson Controls. “The new partnership with Google Nest Pro will give these injured veterans and their families even more customized amenities in their new connected homes.”

“Building Homes for Heroes is devoted to building better and brighter lives for our veterans who served and sacrificed so much for our great country,” said Andy Pujol, founder and CEO, Building Homes for Heroes. “This is something we could not accomplish without the support of like minded, patriotic companies like Johnson Controls for the last seven years, and our newest partner in Google Nest, to provide our heroes with a home that is beautified and customized for their needs. What a beautiful way to thank our heroic servicemen and women.”

Parts Town Launches E-Commerce Marketplace

Addison, Ill. – Parts Town announced the launch of its Parts Town marketplace. Through the new e-commerce marketplace, customers will have access to a shopping experience for OEM foodservice replacement parts, items, and products across a variety of new categories.

“Expanding our e-commerce marketplace to include additional product categories allows us to meet the needs of our customers by providing a one-stop shop,” said Steve Snower, CEO of Parts Town. “We’ll use our marketplace and digital business model to expand access to product categories within the foodservice space, but also genuine OEM parts in other industries.”

In addition to foodservice parts and products such as smallware, tabletop and light equipment, the new marketplace will also offer parts and other related products from adjacent market sectors including HVAC, janitorial, water filtration, technician supplies and residential appliances.

The marketplace was developed by Red Lightning Group, a division of Parts Town.

ACCA Announces Keynote Speakers for Conference

Alexandria, Va. – The Air Conditioning Contractors of America (ACCA) announced its lineup of keynote speakers for ACCA’s 2022 Annual Conference & Expo. Held at the St. Louis Union Station Hotel in St. Louis, Missouri, the ACCA Annual Conference & Expo will run from March 28 - 30, 2022.

“ACCA’s Annual Conference & Expo is a fantastic opportunity for all HVACR service members to network, connect with insightful speakers, and obtain valuable information and knowledge on overcoming the biggest issues in our industry,” said Matt Marsiglio, operations manager, Flame Heating, Cooling, Plumbing, and Electrical, in Warren, Michigan. “This is a must-attend event

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D&R International - Overcoming Installation Barriers for Residential HPWHs in Replacement Scenarios

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D&R International - HVAC System Testing

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Continued on Page 25

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CEC Workshops Discuss HVAC Quality Installation, Compliance, Refrigerants

IHACI introduces Visual Service Program.

By Ted Rieger
Northern Calif. Correspondent

The California Energy Commission (CEC), as part of its Integrated Energy Policy Report (IEPR) proceedings, held two recent workshops to gain input regarding issues involving HVAC system quality installation and building permit compliance, and the transition to alternative refrigerants with lower global warming potential (GWP).

The IEPR is used to develop state energy policies and goals in coordination with other agencies, and to guide and implement CEC programs and proceedings. The

CEC adopts an IEPR every two years and an update every other year. This proceeding (Docket #21-IEPR-01) is the 2021 update. These two workshops will support the report's section addressing "Building Decarbonization and Energy Efficiency."

HVAC Quality Installation

CEC Commissioner Andrew McAllister, who leads the 2021 IEPR process, commented on the complex issue of HVAC quality installation, code enforcement and building permit compliance, that has been under discussion for years without resolution. "This topic is one that's been long simmering. It's a relatively difficult topic to

address, one that has a lot of chefs in the kitchen, and it's a complex meal," McAllister said.

He referenced legislation signed in 2016--SB 1414 that authorized the CEC to collaborate with stakeholders to approve a plan to promote compliance with energy code requirements and adopt regulations to increase permit and inspection compliance in connection with HVAC system installations--a task that remains uncompleted.

Long-time CEC energy efficiency staff member Bill Pennington reviewed industry history about HVAC installation issues dating to the 1990s when research indicated that system installation problems could lead to unintended energy

losses of 30 to 40 percent. In addition, estimates at the time indicated that only 10 percent of the 350,000 annual HVAC residential system replacements were done with a required building permit. A later study by the California Public Utilities Commission (CPUC) in 2017 found only a 7.9 percent permit compliance rate for about 1 million annual HVAC system replacements statewide.

Pennington concluded, "We're going to have to rapidly expand electric heat pump (HP) installations in California as a result of new building standards requirements, and if they are not installed properly, this will greatly impact the state's decarbonization goals."

A panel of industry stakeholders during the online workshop reviewed previous recommendations that came out of SB 1414 compliance and enforcement workshops held in 2018, and provided updated input based on recent conditions and trends. Suggestions to increase contractor compliance and improve installations include: reduce barriers, costs, and time for obtaining permits, such as through online processing and more uniform statewide permitting standards; HVAC equipment registration and tracking; more contractor training; increased consumer awareness about permit requirements; and stronger enforcement by the Contractors State License Board (CSLB) and building departments.

HVAC contractor and member of the IHACI Board of Directors Bob Wiseman noted IHACI's long involvement with these issues. Wiseman said finding trained and qualified HVAC technicians is an industry problem, and it commonly takes 3 to 5 years of field experience for a tech to become a company asset. He introduced a new electronic remote inspection tool being developed with support from IHACI called "Visual Service."

"Visual Service was created by contractors for contractors," Wiseman said. Using smartphones and existing tools, the contractor service manager can watch the technician live at the jobsite and provide guidance to ensure proper and quality installation and service. Visual Service is designed with a Field Tech App and a Service Manager App. It provides benefits for technicians, the HVAC contractor, customers and regulatory agencies.

Wiseman explained: "All data collected is stored and archived. Our goal is to simplify the compliance process and get the installation and permit process completed in one day. Getting everything done at one time with the homeowner and building department is vital to save time and costs for all parties involved."

Alex Ayers representing Heating, Air-Conditioning & Refrigeration Distributors International (HARDI) said HVAC distributors already work with equipment manufacturers to train contractors to promote proper installation and service.

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He said training will become even more important in the coming years as the industry transitions to new refrigerants and HP equipment. Ayers said, "Quality installation is a lot about looking at equipment warranties and requirements. It is in the best interest of distributors and manufacturers to reduce repairs done under warranties."

Randy Young of Sheet Metal Workers Union Local 104 said, "This is a very complex problem that's been kicked down the road for a long time. The system is broken and a stronger response is needed. If you can get enforcement of permit compliance and inspection, you will get higher quality installations."

Representatives of building departments for Sonoma County and the City of San Jose highlighted new online and virtual inspection and permitting processes that have been implemented with the COVID-19 pandemic to make the process more efficient and convenient for all parties. The City of Davis was cited as an example of nearly 100 percent permit compliance because of a local requirement for a "Resale Inspection Program." At the time of a home sale, the realtor and homeowner must verify that the home was in code compliance at the time it was constructed, and when subsequent work was performed.

Although building departments are moving to online tools to expedite permitting and inspections, building officials cautioned that a statewide uniform system was unlikely, due to differences in local building ordinances, climate zones, and construction activity between jurisdictions.

CSLB Registrar David Fogt also participated in the workshop. "Permit compliance and working with the CEC on these issues has been a top priority of CSLB," Fogt said. He noted the CSLB has a new enforcement tool--issuing a "Letter of Admonishment" to contractors for certain violations--that can be used to encourage permit compliance. Fogt said, "CSLB can be a valuable partner, for enforcement, as well as the education of consumers and contractors on the requirements to obtain a permit."

McAllister summarized, "Our goal is to increase quality and accountability for every

installation. There is no one size fits all for the state, but we now have approaches and tools that weren't available a few years ago." He also believes that as the state moves toward all-electric homes, HP installation and new capacity electrical panels, this will likely result in increased compliance with permit and inspection requirements.

Refrigerants: Current and Future Issues

Another CEC IEPR workshop focused on the transition to lower GWP refrigerants as a decarbonization goal. McAllister observed, "The California Air Resources Board (CARB) has the main regulatory jurisdiction regarding refrigerants, so our job at the CEC is to have a productive sharing of ideas and collaborate across agencies so

we're all on the same page around these issues."

CARB staff member Aanchal Kohli noted that stationary AC and refrigeration systems are some of the largest sources of HFC (high GWP) refrigerant emissions and discussed CARB's HFC phase-out regulation adopted in 2020.

Although lower GWP refrigerants are available, and some are widely used worldwide including in Europe and Asia, they are classified as mildly flammable and face more opposition in the U.S. due to perceptions and building codes. Kohli explained, "Here in the U.S., our HVAC and refrigeration systems are commonly larger central systems and we use a higher refrigerant charge. In the U.S. there is a perception of risk with mildly flammable refrigerants."



A SCREENSHOT OF THE VISUAL SERVICE REMOTE INSPECTION TOOL AS PRESENTED DURING A CEC WORKSHOP.

Helen Walter-Terrinoni of the Air-Conditioning, Heating and Refrigeration Institute (AHRI) said the hold-up with transitioning to lower GWP refrigerants is related to state codes and industry standards over the flammability issue.

AHRI's Safe Refrigerant Transition Task Force has developed a comprehensive resource page on the AHRI website with information, fact sheets, and a series of webinars

Continued on Page 34



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EPA Issues Highly Anticipated Rule on Hydrofluorocarbons Phasedown

U.S. will use new program aimed at chemicals used in air conditioning, refrigeration.

The United States Environmental Protection Agency (EPA) issued a final rule establishing a comprehensive program to cap and phase down the production and consumption of climate-damaging hydrofluorocarbons (HFCs) in the United States. HFCs are potent greenhouse gases commonly used in refrigeration and air conditioning equipment, as well as foams and many other applications. A global phasedown of HFCs is expected to avoid up to 0.5 °C of global warming by 2100. This final rule will phase down the U.S. production and consumption of HFCs by 85% over the next 15 years, as mandated by the American Innovation and Manufacturing (AIM) Act that was enacted in December 2020.

In addition to implementing this phasedown program, the Biden-Harris Administration is marshalling a whole-of-government approach to prevent the illegal trade, production, use or sale of HFCs; support the transition to HFC alternatives through research and purchasing; and encourage the

reclamation and recycling of HFCs from retired equipment, thus reducing further HFC production.

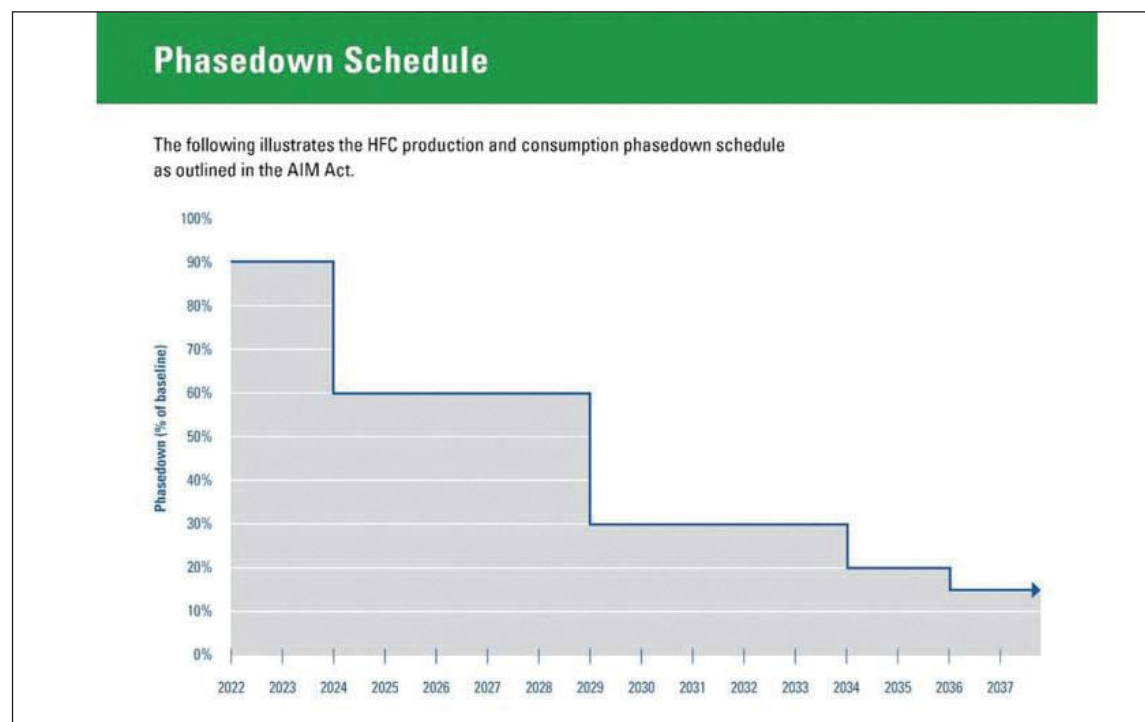
“Today EPA is taking a significant step forward to advance President Biden’s bold agenda to tackle the climate crisis,” said EPA Administrator Michael S. Regan. “Cutting these climate ‘super pollutants’ protects our environment, strengthens our economy, and demonstrates that America is back when it comes to leading the world in addressing climate change and curbing global warming in the years ahead.”

AIM Act to Foster American Innovation as Phasedown Begins

Backed by a broad coalition of industry and environmental groups, the AIM Act not only phases down HFCs, but it also ushers in the use of more climate friendly and energy efficient alternatives.

Saving Money, Reducing Emissions

EPA estimates that the present value of the cumulative net benefits of this action is more than \$272 billion from 2022 through 2050, and that the rule will yield cumulative compliance savings for industry. In 2036 alone, the year



the final reduction step is made, this rule is expected to prevent emissions of the equivalent of 171 million metric tons of carbon dioxide (CO₂) – roughly equal to the annual greenhouse gas emissions from one out of every seven passenger vehicles registered in the United States. The total emission reductions of the rule from 2022 to 2050 are projected to amount to the equivalent of 4.6 billion metric tons

of CO₂ – nearly equal to three years of U.S. power sector emissions at 2019 levels.

As extremely powerful greenhouse gases, HFCs accelerate climate change, which threatens society with costly health and environmental impacts such as floods, wildfires, drought, and increasingly severe weather events. EPA conducted an environmental justice analysis that determined overall reductions in greenhouse gas emissions from this rule would benefit populations that may be especially vulnerable to damages associated with climate change, such as the very young, elderly, low-income, disabled, and indigenous populations.

Interagency Task Force to Prevent Illegal HFCs

To help ensure the integrity of the program and a rigorous and timely phasedown, EPA will work with the Department of Homeland Security to prevent the illegal import and trade of HFCs through an interagency task force. The task force will be led by experts from U.S. Customs and Border Protection, U.S. Immigration and Customs Enforcement, Homeland Security Investigations, and EPA to detect, deter, and disrupt any attempt to illegally import HFCs into the United States. This coordination builds on and is informed by the agencies’ long experience collaborating to prevent illegal imports, including imports of ozone-depleting substances and vehicles that fail to comply with Clean Air Act standards.

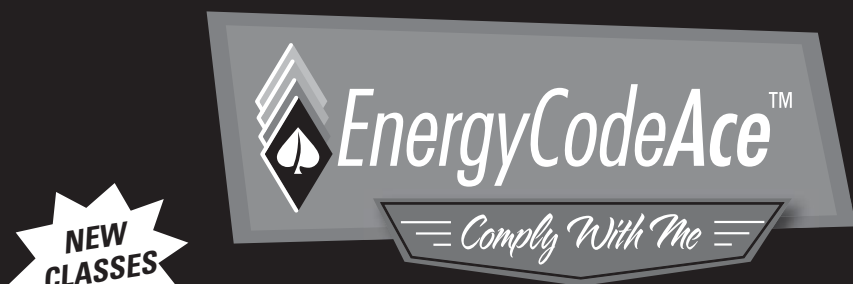
Broad Coalition Backs Super Pollutant Phasedown

The phasedown rule and whole-of-government approach have received support from a broad coalition of stakeholders, including environmental groups, industry leaders, Members of Congress, and state and local partners across the country.

“Today marks an important leap forward in our efforts to tackle the climate crisis and kick start our economy. Putting the AIM Act into action will create good-paying jobs for the American people and help position our nation for a brighter future. This is a slam dunk, plain and simple: phasing down HFCs will support American leadership in manufacturing and innovation, bring down global temperatures, strengthen our economy, and help save our planet,” said Senate Committee on Environment and Public Works Chairman Tom Carper.

“For years, critics have claimed that acting on climate would weaken our economic growth. Today’s announcement is proof positive that they were wrong. I was proud to author the bipartisan American Innovation and Manufacturing Leadership (AIM) Act in the House to tap into the powerful opportunity for growth that a U.S.-led transition away from HFCs could bring,” said Congressman Paul Tonko, chairman of the Energy & Commerce Subcommittee on Environment and Climate Change. “This legislation and today’s rule position U.S. manufacturers as worldwide leaders in the green economy of

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Continued on Page 20

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California Supreme Court Narrows Coverage of Prevailing Wage Law

From the Law Offices of
Atkinson, Andelson, Loya,
Ruud and Romo

The Supreme Court clarified that the statutory definition of “public work” generally is limited to work on fixed structures and land, and not rolling stock. Separately, the Supreme Court held “public work” must be expressly defined under the Labor Code.

On August 16, 2021, the California Supreme Court decided a pair of cases addressing California’s prevailing wage law – *Busker v. Wabtec Corporation* (No. S251135) and *Mendoza v. Fonseca McElroy Grinding Co., Inc.* (No. S253574). The Court rejected in both cases the plaintiff employees’ reading of the law that would have significantly expanded the kinds of work for which prevailing wages must be paid. The cases are important to the construction industry companies engaged in public works, and construction unions.

In *Mendoza*, the Court addressed whether prevailing wages must be paid for mobilization (e.g., work transporting heavy machinery to and from a public

works site). The plaintiff employees in *Mendoza* did not contend that their work was a “public work” under Labor Code section 1720; they argued only that, under section 1772, their work was covered because it was performed “in the execution” of a public works contract.

The Court rejected that reading, concluding that section 1772 did not enlarge coverage beyond that delineated by the coverage sections of the Labor Code including section 1720 (“... construction, alteration, demolition, installation, or repair...”) but simply confirms that the law extends to employees employed by contractors or subcontractors. In reaching that conclusion, the Court abrogated prior judicial decisions that had adopted a multifactor test for determining whether work ancillary to a construction project, such as hauling or off-site fabrication, falls within the statute under section 1772. Now, prevailing wages must be paid for such work only if it falls within one of the categories of covered work specified in sections 1720 through 1743. We can

now expect more litigation and “new” interpretations by Department of Industrial Relations (DIR) as to the meaning of terms such as “preconstruction,” “repair” and “maintenance.”

For example, while the *Mendoza* Court made clear that section 1772 does not itself make mobilization a public work for which prevailing wages must be paid, it expressly did not address whether certain types of mobilization efforts might fall within the scope of the categories of “public works” as defined in section 1720 (e.g., “preconstruction,” “street improvement work,” etc.). This issue will undoubtedly be addressed legislatively or in subsequent court decisions. It does reverse years of precedent by the DIR to cover certain types of work including travel time and yard time.

In *Busker*, the Court addressed whether publicly funded work performed on rolling stock, such as a train, is a covered “public work.” Wabtec, an equipment and services company, hired the plaintiff to perform work on rail cars as part of a broader project to prevent train collisions. The plaintiff was not paid prevailing wages. Other workers,

not employed by Wabtec, were used for installing equipment in the railyard itself and were paid prevailing wages.

On a certified question from the Ninth Circuit, the California Supreme Court held that the plaintiff’s work was not on a public work and therefore the prevailing wage law did not apply to the plaintiff. Defined in Labor Code section 1720(a), “public work” includes “construction” and “installation.” Examining the statutory context, and dictionary definitions, the Court concluded that those terms referred to work performed on fixed structures (like buildings, roads, and dams) but not work on rolling stock. The statute’s coverage provisions have been amended many times, the Court observed, but never to embrace work on rolling stock. The Court also noted that the DIR has consistently excluded rolling stock from coverage.

The Court also rejected the plaintiff’s reliance on section 1772, which, as the Court explained in *Mendoza*, does not expand the definition of “public works.”

Earlier this year, the Court held in *Kaanaana v. Barrett Business*

Services, Inc., 11 Cal. 5th 158, 165 (2021), that the law applies to work done for special government districts, even if not traditional construction work on fixed structures. These latest decisions rejecting the plaintiffs’ effort to expand coverage show that *Kaanaana* was a narrow ruling based on a specific statutory provision. Beyond such special situations, the Court has now reaffirmed that the traditional definition of a “public work” is the governing definition that triggers the obligation to pay prevailing wages.

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HFC Phasedown

Continued from Page 18

the future while also being the most significant action taken by Congress to reduce greenhouse gas emissions in a decade. Simply put, it’s a win-win. I want to thank Administrator Regan and the EPA

staff for prioritizing this rulemaking to get the AIM Act up and running. My colleagues and I stand ready to help ensure the successful implementation of this critical climate legislation.”

“The Biden Administration’s action today is a critical step in our ongoing efforts to combat the catastrophic climate crisis by

phasing down hydrofluorocarbons, an extremely potent greenhouse gas,” said House Energy and Commerce Committee Chairman Frank Pallone, Jr. “Congress took a major step in passing the AIM Act in the end-of-year omnibus package last year. I’m very pleased with the Biden Administration’s robust implementation of the law, and the whole-of-govern-

ment approach it is taking to lead the global transition to cleaner alternatives.”

“The U.S. Climate Alliance welcomes the EPA’s finalization of this rule to phase down highly-potent HFCs across the country. National standards will ensure all communities have access to higher quality products, and that we are giving

U.S. industry the best opportunity to innovate and lead the global transition to HFC alternatives,” said U.S. Climate Alliance Policy Director Taryn Finnessey. “Alliance states have been leading the charge in reducing HFC emissions in recent years and now have a strong federal partner in this push. It’s a win for jobs, a win for our economy and it will help us achieve our bold state and federal climate goals.”

“We have repeatedly seen how environmental crime can fundamentally undermine the best efforts to protect our climate,” said Avipsa Mahapatra, Climate Campaign lead at the Environmental Investigation Agency. “This is a groundbreaking effort to fight crime in climate pollutants by combining the latest technology with the broad cooperation necessary to deliver on U.S. climate goals.”

“This rule is the critical first milestone in the implementation of the AIM Act, which became law in December 2020. We applaud the EPA and the entire Biden Administration for its effort to meet the first statutory deadline for its promulgation,” said Karen

Continued on Page 22



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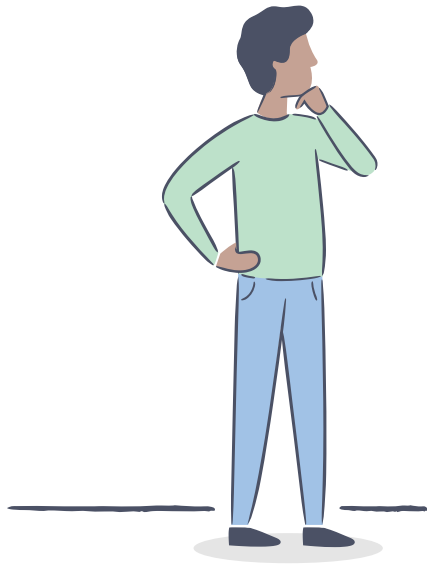
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Troubleshooting

An Electric Furnace That's Not Performing

By Jim Johnson
Contributing Editor

The equipment in this month's troubleshooting problem is an electric furnace that has been in service for "at least ten years" according to the customer who is reporting that the unit is running almost constantly, but not keeping the building comfortable. Also, according to the customer, this unit has no service history.

When you arrive, you get additional information from the customer. They tell you that they considered calling near the end of the previous heating season because they weren't sure that the system was performing like it should, but they put it off. Their description of the problem is that it is worse than it was last year. You also find that while this equipment could serve as

an air handler for comfort cooling in the summer, it's not being employed as such, used only as a stand-alone straight heating system. The cooling equipment for the building is a separate system.

As your first step, you confirm that the filter is clean. And, when you check the wiring diagram shown in **Figure One**, you note that the indoor blower motor is wired to ORG and RED and is operating normally. After confirming that the temperature rise is insufficient, you check the electrical system, and find 240 VAC applied to terminals L and R on each of the 4 heating element connections. Your subsequent ammeter tests show a current draw within the manufacturer's specifications on two of the elements, while at the top element (ORG from Circuit Breaker #1) and the bottom element (BLK from

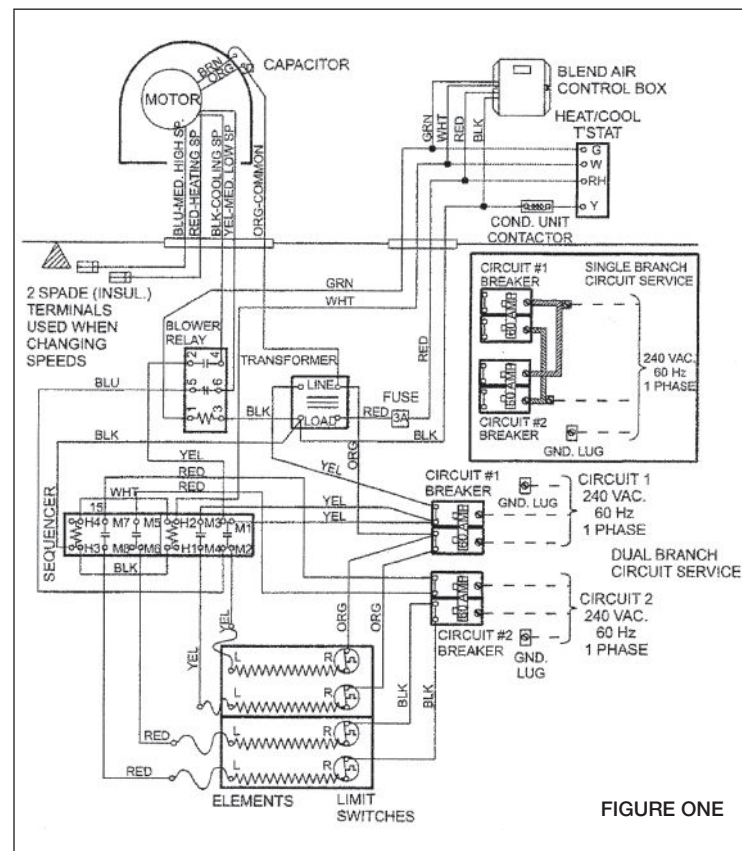
Circuit Breaker #2) show 0-Amps.

Your troubleshooting question: *What is your next step in servicing this equipment?*

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

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

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



Answer to Last Month's Troubleshooting

1. The Logic Board needs to be replaced.
2. Failure to operate the DR contacts prevented the proper operation of the outdoor fan motor that allows efficient thawing the outdoor coil.

HFC Phasedown

Continued from Page 20

Meyers, chairman of the Board for the Alliance for Responsible Atmospheric Policy and Vice President of Rheem Manufacturing.

"We look forward to reviewing the final allocation rule in full detail and working with EPA to achieve a smooth phasedown as it also initiates efforts on user sector rules and refrigerant management," said Kevin Fay, executive director for the Alliance for Responsible Atmospheric Policy.

"AHRI and its member manufacturers that produce and use hydrofluorocarbon (HFC) refrigerants are pleased that the EPA finalized the allocation rule on time, as required by the American Innovation and Manufacturing Act. Predictability is a very important aspect of the manufacturing process, and this timely rule ensures that our member companies are aware of this regulatory terrain for the coming years," said Air-Conditioning, Heating & Refrigeration Institute (AHRI) President & CEO Stephen Yurek.

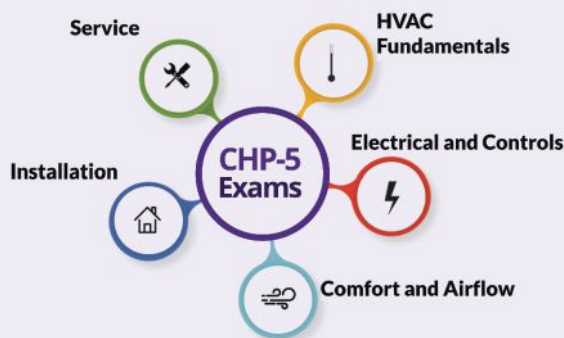
"This rule is a critical step in the 15-year industry-supported process of phasing down HFCs

and represents a win for both the climate and the American economy. We are hopeful that the administration will soon submit the Kigali Amendment to the Montreal Protocol – the treaty that underpins the AIM Act – to the United States Senate and continue the process of putting the United States on record with the majority of the world's nations in support of this global phase down."

The HFC Allocation final rule establishes the HFC production and consumption baseline levels from which reductions will be made, establishes an initial methodology for allocating HFC allowances for 2022 and 2023, and creates a robust, agile, and innovative compliance and enforcement system. EPA used the approach established through this rulemaking to issue allowances for 2022 on October 1, 2021 and plans to revisit the approach for subsequent years in a later rulemaking.

In addition to establishing a general HFC allowance pool and a set aside pool (e.g., for new market entrants), the rule outlines how EPA is issuing allowances for specific applications listed in the AIM Act that the agency was directed to provide allowances for, such as mission-critical military applications.

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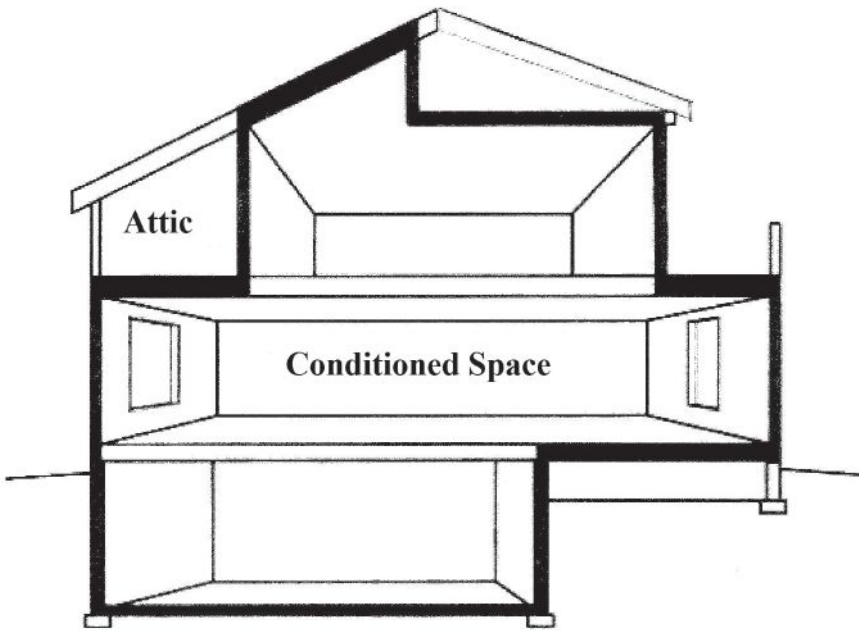


FIGURE ONE

Growing Green Technicians

Part 145: Blower Door Testing and the Building Envelope

By Jim Johnson
Contributing Editor

During the winter months, technicians responding to customer concerns about the performance of their heating system, and what it costs to operate it, consider more than just the BTU capacity of the system itself, but also the integrity of the thermal envelope of a structure. (See **Figure One**, image courtesy of ESCO Group)

The function of the thermal envelope as we're showing here with the dark line indicating the separation between the conditioned space and the segment of the building structure that is not heated, must be properly established, and maintained for heating equipment to perform properly, keeping the conditioned space comfortable while minimizing energy costs.

From a technician's perspective, being aware of building envelope issues breaks down into two fundamental areas:

Infiltration: Whether a building is one year old or was built 50 years ago doesn't matter. Any structure can be leaking and allowing the in-

filtration of outside air into the thermal envelope, preventing the equipment from operating at its intended capacity. If a customer's explanation of the problem is that the system seems to run in long cycles, then cycles off for what seems to be a short time, technicians need to consider the possibility that the source of the problem could be a high level of infiltration into the conditioned space.

Insulation: Again, the age of the building doesn't matter. Of course, updated building codes and construction practices could be a factor in an older building being more susceptible to problems, but as a troubleshooter, a technician is always following the approach of systematically eliminating the possibilities to find the source of the complaint, and understands that literally anything is possible, even if the building is recent or new construction.

When considering insulation, some possible problems in this area can be identified with a simple visual inspection, such as surveying an attic and finding insufficiencies there. When it comes to infiltration issues, however, evaluating the level of possible leakage into a building requires precise measurements with specialized equipment, an example of which is shown in **Figure Two**. (Courtesy of Retrotec)

When a blower door assembly such as this is installed in an exterior door, the fan depressurizes the building to enable locating small openings in the structure responsible for infiltration into the building. The dual port manometer simultaneously measures two different pressures on its "A" and "B" channels of connection. One tube is connected to the blower door assembly and the other is allowed to sense the pressure outside the building. This is done to establish what is known as the WRT (With Reference To) which refers to pressure difference from inside the structure to the outside. The precise scale of measurement employed to accomplish the evaluation of the tightness of a building is the pascal (Pa).

To appreciate how fine a

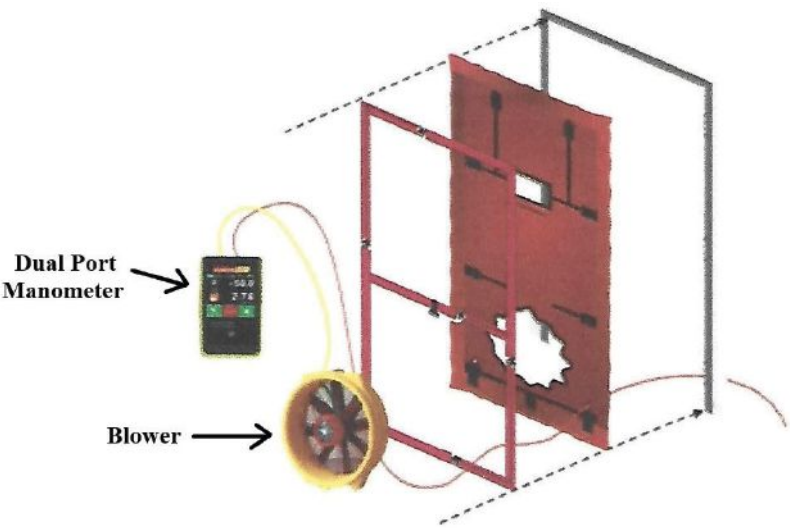


FIGURE TWO



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Continued on Page 39

Carrier Reduces its Customers' Carbon Footprint by 68 Million Metric Tons in 2020

Carrier Global Corporation has reduced its customers' carbon footprint by 68 million metric tons in 2020, which is equal to the energy use of more than 8 million U.S. homes in one year. Carrier also reported gains in diversity among its senior leadership, including 43% global executive diversity and 31% global women executives, up from 27% and 20% in 2015, respectively. Also, Carrier began tying its executives' incentive compensation to progress against Environmental, Social & Governance (ESG) goals, including progress against its diversity goals and strategic initiatives.

These accomplishments and more are outlined in Carrier's 2021 ESG Report, which details the company's ESG performance in 2020 and progress toward its

2030 goals announced last year.

"The urgency of climate change requires us to be bold, to innovate, and to disrupt – the future demands it," said Dave Gitlin, chairman & CEO, Carrier. "At Carrier, our focus on ESG is fundamental to our culture and our business, and we have an opportunity to make a profound impact on some of the most pressing environmental and social challenges of our time. Expanding on three decades of environmental targets, we're making meaningful progress against our 2030 goals around the areas of people, planet, and our communities. Our goals are intentionally ambitious, because challenging ourselves to think bigger and be better is what we do every day."

Other highlights from the report include a commitment to

setting company-wide science-based emissions reduction targets aligned with the goals of the Paris Agreement, achieving carbon neutral operations and the implementation of a supplier sustainability program to help reduce Carrier's environmental footprint.

The company is also focused on achieving a diverse workforce and launched a comprehensive diversity and inclusion strategy that included the launch of programs for the recruitment and development of Black talent.

"Transparency is a key driver of our ESG performance, which is why we're committed to sharing where we are doing well – and where we need to focus more attention and resources," said Jennifer Anderson, chief sustainability officer, Carrier. "We're proud of our progress, but also resolute in making advancements in our operations, people management, solutions,



CARRIER'S U.S. HEADQUARTERS IN PALM BEACH GARDENS, FLA.

and community engagement."

The full report is available on Carrier's website at www.carrier.com.

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building controls and automation, and fire and security systems. It operates 51 factories and 39 research & design centers worldwide with more than 53,000 employees serving customers in more than 180 countries.

LG Sets Goal to Utilize More Than Half Million Tons of Recycled Plastic

LG Electronics (LG) announced its goal to use almost 600,000 tons of recycled plastic by 2030 in a concerted effort to reduce greenhouse gas emissions in the value chain. The goal is a part of LG's larger initiative to create a take-back ecosystem for electronic waste and increase the use of post-consumer recycled (PCR) materials in its consumer electronics and home appliance products.

In 2020, LG utilized approximately 20,000 tons of recycled plastic in its products, which it plans to increase more than tenfold by 2025. While recycled plastic is currently used inside LG TVs, PC monitors, speakers,

washing machines, refrigerators and air conditioners, LG will expand the use of recycled plastic to the exterior of its products as well. In addition to utilizing more recycled plastic, LG is reducing the use of virgin plastic throughout its operations as well. This year, 18 OLED TV models will be produced using less virgin plastic, an increase from 14 models in 2020, for a reduction of up to 10,000 tons of plastic.

LG is also increasing the target amount of take-back electronic waste from its 2006 figure of 4.5 million tons to over 8 million tons by 2030, with 3.07 million tons having been collected by the end of 2020.

Industry News

Continued from Page 14

that has something for everyone who works in HVACR."

The opening keynote speaker for the ACCA 2022 Annual Conference & Expo is Gerry O'Brien, What Big Brands Know founder and the creator of The Power of Because framework.

ACCA's 2022 Conference & Expo also features general sessions, including the Manufacturers Leadership Forum, the Contractor Forum Live: Ask the Experts, ACCA Town Hall - Contractors Lead the Way, The Distributor's Breakfast Club, and the Closing Session: Lessons in Leadership.

Other must-attend breakout session speakers include:

- Dan Weis, Weis Comfort Systems
- Steve Schmidt, Frederick Air, Inc.
- Ishan Heru, Community Connections
- Edward McFarlane, Haller Enterprises Inc.
- Susan Frew, Sunshine Plumbing & Heating

The Expo will be open March 29 - 30, and will provide the opportunity for attendees to connect with businesses that specialize in consulting, staffing, insurance, HVACR design, HVACR training, legal services, financial services, and more. Registration is open at www.acca.org.



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Orange, CA 92867
714-634-1844 Ext. 204
Booth(s) 317

Flaretite, Inc.
7723 Kensington Ct.
Brighton, MI 48116
(810) 750-4140
Booth(s) 117

**Fluorofusion Specialty
Chemicals**
3950 Powhatan Rd.
Clayton, NC 27520
(919) 608-2728
Booth(s) 418

- G -

Geary Pacific Supply
1360 N. Hancock St.
Anaheim, CA 92807
714-279-2950 Ext. 1024
Booth(s) 501

Global The Source
1648 Northlake Pass
Universal City, TX 78148
210-226-8100
Booth(s) 302

**GoGreen Financing /
Frontier Energy**
600 Wilshire Blvd. Ste. 500
Los Angeles, CA 90017
213-213-1960 ext. 119
Booth(s) 527

Gree / Tradewinds
10300 NW 19th Street
Doral, FL 33172
754-707-4220
Booth(s) 503

- H/I -

HERS Raters, Inc.
7647 Saint Clair Ave.
North Hollywood, CA 91605
818-518-8555
Booth(s) 305

Howard Industries
8855 Washington Blvd.
Culver City, CA 90232
310-837-9100
Booth(s) 318, 320, 322, 324,
326

IHACI
454 W. Broadway
Glendale, CA 91204
818-551-1555
Booth(s) 627, 629, 726

**Inaba Denko, A Division of
Patlite (U.S.A.) Corp.**
20130 S. Western Ave.
Torrance, CA 90501
310-803-4568
Booth(s) 713

iPermit ERaters
31225 La Baya Dr. #213
Westlake Village, CA 91362
818-735-7876 Ext. 205
Booth(s) 704

- J/L -

J. B. Warranties
2221 Justin Road PMB-151
Flower Mound, TX 75028
214-682-3266
Booth(s) 510

L. H. Dottie
6131 Garfield Ave.
Commerce, CA 90040
(323) 725-1000 x 127
Booth(s) 109

2021 EXHIBITOR DIRECTORY

LG Electronics USA
4300 N. Point Pkwy, Ste. 200
Alpharetta, GA 30022
(770) 356-7014
Booth(s) 513

- M/N -

**Mainstream Engineering
(QwikProducts)**
200 Yellow Place
Rockledge, FL 32955
321-631-3550
Booth(s) 801

MarketAir, Inc.
P.O. Box 10330
New Brunswick, NJ 08906
866-372-0990
Booth(s) 229

**National Comfort Institute
(NCI)**
P.O. Box 147
Avon Lake, OH 44012
800-633-7058
Booth(s) 511

NEBB
8575 Grovemont Circle
Gaithersburg, MD 20877
301-977-3698
Booth(s) 521

**North American Technician
Excellence (NATE)**
2311 Wilson Blvd. #410
Arlington, VA 22201
877-420-6283
Booth(s) 702

- O/P -

Olimpia Splendid USA
66 White Street Ste. 501
New York, NY 10013
951-534-8901
Booth(s) 403, 405

Pacific Systems Group
3855 PCH #16
Torrance, CA 90505
310-373-7175
Booth(s) 703, 705, 707

Packard, Inc.
2700 Barrett Lakes Blvd.,
Suite 100
Kennesaw, GA 30144
770-427-5140
Booth(s) 709

Panasonic Life Solutions
11252 Big Cone Drive
Lakeside, CA 92040
951-348-5855
Booth(s) 113

**Parker Hannifin - Sporlan
Division**
206 Lange Dr.
Washington, MO 63090
636-392-3386
Booth(s) 311

Particles Plus
31 Tosca Dr.
Stoughton, MA 2072
408-828-5521
Booth(s) 813

PHCC Los Angeles
2869 Glenview Ave
Los Angeles, CA 90039
323-913-7335
Booth(s) 507

**Profit Rhino Powered by
Callahan Roach**
320 N. Jensen Road #4D
Vestal, NY 13580
855-710-2055
Booth(s) 208

- R -

R.E. Michel Company
One RE Michel Dr.
Glen Burnie, MD 21060
410-553-3745
Booth(s) 413

Rahn Industries
2630 Pacific Park Dr.
Whittier, CA 90601
800-421-7070
Booth(s) 112

Rapid Duct Testing
401 N. Verdugo Rd. #B
Glendale, CA 91206
818-552-2050
Booth(s) 509

Resideo
1635 N. Batavia Street
Orange, CA 92867
657-255-0332
Booth(s) 221

Robertshaw
1222 Hamilton Pkwy.
Itasca, IL 60143
800-304-6563
Booth(s) 804

Rodman Drill
7210 Jordan Ave. D-5
Canoga Park, CA 91303
800-685-8665
Booth(s) 108

Rotobrush
612 E. Dallas Rd. #400
Grapevine, TX 76051
800-535-3878
Booth(s) 310

Rottiers Sales Associates
3117 Fite Circle Ste #104
Sacramento, CA 95827
916-723-7130
Booth(s) 211, 213

Royal Service Supplies
1712 S. New Ave.
San Gabriel, CA 91776
626-281-8848
Booth(s) 618

Royal Truck Body
24200 S. Main St.
Carson, CA 90745
562-633-9951
Booth(s) 429

RSES/CARSES
10357 Los Alamitos Blvd.
Los Alamitos, CA 90720
310-600-8800
Booth(s) 504

- S -

Service Roundtable
750 Canyon Dr. #230
Coppell, TX 75019
877-262-3341
Booth(s) 502

**Sigler Wholesale
Distributors**
205 S. Puente St.
Brea, CA 92821
714-578-5292
Booth(s) 701

Sirris Abatement
12303 Woodruff Ave.
Downey, CA 90241
562-401-1122 Ext. 231
Booth(s) 306

**SoCal P.I.P.E. Trades
HVAC/R**
501 Shatto Pl. #200
Los Angeles, CA 90020
800-457-7473
Booth(s) 313

SoCal Sheet Metal Local 105
633 N. Baldwin Park Blvd.
City of Industry, CA 91746
626-968-3340
Booth(s) 508

SoleusAir
9645 Telstar Ave. #C
El Monte, CA 91731
626-626-4060
Booth(s) 101

**Southern California Gas
Company**
9241 E. Firestone Blvd.
Downey, CA 90241
562-803-9240
Booth(s) 803

Style Crest, Inc.
2450 Enterprise St.
Fremont, OH 43420
419-333-5794
Booth(s) 203

**SUPCO
(Sealed Unit Parts Co., Inc.)**
2230 Landmark Place
Allenwood, NJ 08720
(800) 333-9125
Booth(s) 329

- T -

TapeGuys, LLC
3418 S. 48th St, Ste 3
Phoenix, AZ 85040
480-966-1988
Booth(s) 210

TECH Clean California
600 Wilshire Blvd. Ste. 500
Los Angeles, CA 90017
213-213-1960 ext. 119
Booth(s) 409

Testo North America
40 White Lake Road
Sparta, NJ 07871
862-354-5001
Booth(s) 408

Thermaflex
381 Carwellyn Rd.
Abbeville, SC 29620
864-344-6648
Booth(s) 608

TruTech Tools, Ltd
3425 Gilchrist Rd. Suite B
Mogadore, OH 44260
412-721-5544
Booth(s) 425

TSI, Inc.
500 Cardigan Road
Shoreview, MN 55176
651-490-3852
Booth(s) 100

- U/V -

Uniweld Products
2850 Ravenswood Rd.
Fort Lauderdale, FL 33312
954-584-2000
Booth(s) 613

**US Air Conditioning
Distributors**
16900 Chestnut St.
City of Industry, CA 91748
626-854-4500
Booth(s) 401

**Vanderbilt Mortgage and
Finance**
1725 Campfire Dr.
Knoxville, TN 37931
940-613-3011
Booth(s) 802

**Visual Service by IHACI
(VS)**
454 W. Broadway
Glendale, CA 91204
818-551-1555
Booth(s) 623, 625, 722, 724

- W/Z -

**Walter's Sprinter of
Riverside**
7979 Auto Drive
Riverside, CA 92504
951-552-2201
Booth(s) 129

Wright Sales Co.
112 Harvard Ave. #281
Claremont, CA 91711
760-634-7601
Booth(s) 526, 602, 603, 604,
605, 606 607, 611

ZONEFIRST
6 Aspen Drive
Randolph, NJ 07869
201-794-8004
Booth(s) 609

2021 EXHIBITOR DIRECTORY

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.

AC Pro Booth 617

AC Pro is a family-owned wholesale distributor that has been delivering outstanding customer service while supplying HVAC equipment, parts, and supplies to Southern California, Nevada, and Arizona markets for over 30 years.

Our unwavering commitment to add value drives us to launch products, services, and locations to help your business grow. We provide the latest technologically advanced equipment and product, easy returns, instant warranty credits, extended hours at no charge, custom sheet metal, and free trash drop off.

At AC Pro, we are committed to integrity, quality craftsmanship, and long-term relationships with our customers. Visit acpro.com for more details!

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.

Airex Manufacturing Booth 417, 419, 518

Airex Manufacturing engineers evolutionary products to enhance the performance and quality of the HVAC system and installation. Their innovative products provide energy savings, sustainability,



and aesthetic value for building systems. Airex's commitment has made them the #1 choice in the wall refrigerant piping penetration outlet seal and outdoor refrigerant piping insulation protection categories.

Airzone North America Booth 304

At 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!

Allied Restoration Services Booth 103

Allied Restoration is a certified Minority Owned Business specializing in indoor air quality and Duct Cleaning for Commercial, Industrial and Residential/HOA customers. Most of our referrals come from HVAC Contractors and related companies to ensure their customers have the highest indoor air quality to NADCA standards.

American Coil Booth 626

American Coil is a leading manufacturer of replacement & OEM Commercial/Industrial HVAC coils including AmeriCoat anti-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.



2021 EXHIBITOR DIRECTORY

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 Ap-

pliances' (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 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 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 711

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® Booth 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 residen-

tial 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 products 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.



2021 EXHIBITOR DIRECTORY

Continued from Page 29

Global The Source Booth 302

Global is a leading master distributor of HVAC/R components to wholesalers throughout the United States, offering superior products and outstanding service. Our line offering continues to broaden, featuring an array of products including our exclusive line of USA Made Capacitors and Turbo200 products, relays, transformers, contactors, disconnects, whips and more.

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 homeowners 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!

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.

NEBB Booth 521

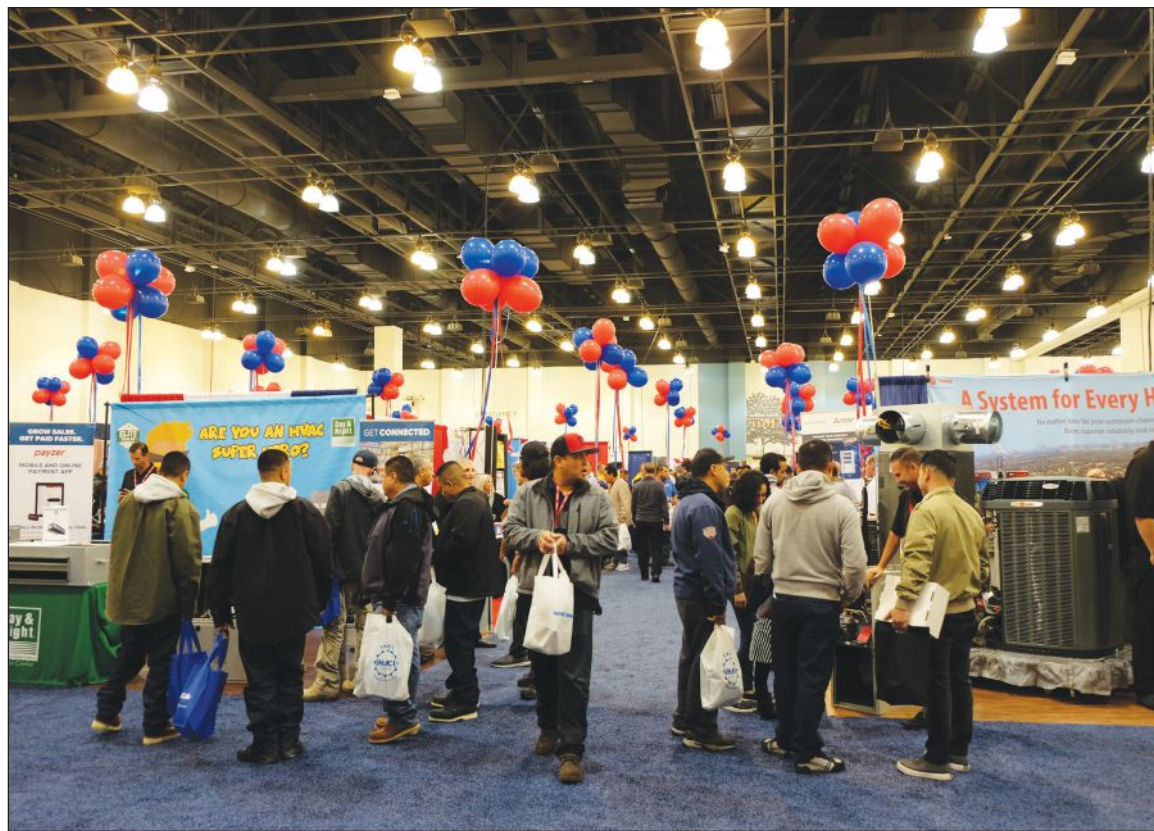
Building owners are concerned about the cost-effective performance of the environmental systems within their buildings. This "green" goal can be best accomplished by having a building's environmental system properly tested, balanced and/or commissioned by a NEBB Certified Professional. Find out how we can help you at nebb.org.

North American Technician Excellence (NATE) Booth 702

North American Technician Excellence (NATE) is the largest nonprofit certification organization for heating, cooling, ventilation, air-conditioning and refrigeration (HVACR) technicians. NATE tests represent real-world working



2021 EXHIBITOR DIRECTORY



knowledge of HVACR systems and validate the competency of service and installation technicians. Leading contractors, manufacturers, distributors and educators partner with NATE to develop skilled, certified technicians.

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 manufacturers 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 environmen-

tal solutions.

Manufacturers Represented: Carrier Ductless, Toshiba-Carrier VRF, Carrier VRF, Magic Aire, iAire, Aldes, Beckett, HMAX and Hi-Velocity. Contact: www.psghv.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 Refrigerant Fittings. 10 Seconds. Connected.

ZoomLock flame-free refrigerant fittings install in ten seconds with no more flames, no more nitrogen purging, no more fire watch, and no more leaks.

With over 3.5 million ZoomLock fittings installed, contractors

report 40-60% time and cost savings per job putting more money directly on their bottom lines. Visit www.zoomlock.com.

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 Micro-channel 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.

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.

Resideo Booth 221

Resideo is a leading global manufacturer and distributor of

technology-driven products and solutions that provide comfort, security, energy efficiency and control to customers worldwide. Our line-up includes, Smart thermostats, combustion, water, IAQ, and even security. Stop by and see our newest and most innovative product offerings for your Residential and Commercial comfort needs.

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.

Rodman Tools Booth 108

Our Reaper High Speed Steel Drill Bits are made of a high-molybdenum alloy giving user more holes than any other bit on the market. 135-degree split point allows for no-walking hole starts. Precision ground flutes and wider web design facilitates fast chip removal allowing for cooler drilling. Reaper Bits cut stainless steel and grade 8 bolts with ease.

Continued on Page 32





Continued from Page 31

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.

Royal Truck Body Booth 429

The first Royal Service Body to roll off the line dates to 1971 and it immediately set a new benchmark for quality workmanship and innovation.

Whether it's a single vocation work truck or an on-highway fleet, every heavy-duty Royal truck body delivers enhanced engineering, greater adaptability, and top-quality materials.

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.

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 compli-

ance with regulations and provides the highest standard of control methods when dealing with asbestos and lead.

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.

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 Show. To view our full product catalog, please visit www.soleusair-west.com.

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/>



2021 EXHIBITOR DIRECTORY



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.

TapeGuys, LLC Booth 210

We specialize in branded tape for companies and franchises - our tape is always in stock! HVAC and IAQ pros trust our three high-performing tape formulas for duct cleaning, testing, sealing openings, encapsulating mold and more. Questions? Contact geary@TapeGuys.com | 800.272.3123 | TapeGuys.com.

Technology and Equipment for Clean Heating (TECH) 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!

Testo North America Booth 408

Testo is a world leader in the design, development, and manufacturing of portable test and measurement instrumentation. With 60 years of engineering experience, our mission is to provide the best quality, service, and value in the industry. Testo is the recognized leading manufacturer of HVAC refrigeration instrumentation, and combustion analyzers.

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.

Uniworld Products Booth 613

Since 1949 Uniworld has employed over 300 workers who help design, manufacture, and distribute quality U.S. made products! Stop by the Uniworld 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 Conditioning 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.

Vanderbilt Finance Booth 802

Vanderbilt Finance is the simple, affordable option for both you and your customers. Low rates, minimal fees, and strategic partnerships to get you products faster; so, you can get paid faster. If you are interested,

visit us at www.vmf.com/ce or call 888-893-8792 and ask for David.

Visual Service by IHACI (VS) Booths 623, 625, 722, 724

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

Continued on Page 34



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Continued from Page 33

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.WaltersMercedes-BenzSprinter.com.

Wright Sales

Booths 526, 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, Smooth-glide technology, Zinc-coated rivets, and no spotweld marks make 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.



CEC Workshops

Continued from Page 17

to inform and train the industry on the use of alternative, low-GWP refrigerants.

Walter-Terrinoni said, "The industry needs at least two years to transition equipment to new refrigerants for manufacturing and for training of service people. California could be one of the last states to go to more readily available low-GWP refrigerants because of the bottleneck in fire and building codes."

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Product Spotlight

Flexible Parking Garage Gas Monitoring Design Key to Safe, Profitable Development

A vendor that offers engineering support up front and as needed, along with advanced modular systems, can speed compliance and construction project completion.

Whether new or retrofit construction, parking structures and shipping/loading bays are often crucial to the viability and efficient use of residential, commercial, industrial and multi-use developments. But to comply with building codes for life safety in confined spaces, parking structures require gas monitoring to prevent the dangerous accumulation of gases such as carbon monoxide and nitrogen dioxide.

However, design changes are almost inevitable because such structures are often built first, particularly if underground, and utilized as development occurs in stages. Specifications written at the start of a project can evolve, and as they do the requirements change. Also, local buyers, jurisdictions, and code officials may have different demands that must be accommodated.

Consequently, for building owners, general contractors, HVAC contractors, and engineers, work-

ing with a vendor with expertise in gas monitoring systems, along with utilizing advanced modular systems that offer flexibility, can significantly speed project completion while facilitating design changes later, if required. So too, can new and more reliable wireless detection systems that promise to speed installation and reduce wiring costs when retrofitting or expanding detection in existing structures.

For large parking garage projects where interest on multi-million-dollar loans can quickly escalate due to completion delays, not to mention late penalties that can run in the hundreds of thousands, using this approach can simplify the completion of code compliant work without impacting other trade professionals.

"On almost every project, design changes occur so we choose to work with expert vendors that help us quickly adapt," says Adam Hitchen, President of Atlantis Comfort Systems, a Rhode Island-based HVAC contractor that provides residential and commercial service across the East Coast. The company contracts up to 5,000 apartment units a year and is involved with about 30 major multi-unit housing projects at this



ACME'S MGMS SYSTEM INCORPORATES WI-FI CAPABILITY SO USERS CAN RECEIVE FEEDBACK FROM THE GAS DETECTION NETWORK REMOTELY.

time.

In regard to installing parking structure gas monitoring systems on a range of projects when requirements and specifications are prone to change, Atlantis Comfort Systems usually relies on a vendor that can provide engineering expertise.

Richard D'Amico, a project manager for the company says, "When we order a gas monitoring panel at the very beginning of a project, Acme Engineering always gives us the wiring diagram, the schematics, and the sequence of operations. We provide this to the fire department, to electricians, to

plumbers, to whichever trade professional needs to see how it works, which helps to speed project completion."

Acme Engineering is an ISO 9001:2015 certified manufacturer of environmental controls and systems with integrated mechanical, electrical and electronic capabilities. The company has expertise providing equipment for monitoring a variety of gases such as carbon monoxide, nitrogen dioxide, carbon dioxide, hydrogen, ammonia, and refrigerants.

When designing a gas detection network, after receiving a floor plan the company creates performance-based specifications, identifies the optimal sensor locations, elaborates the most energy efficient activation sequence for the ventilation system, and prepares a job specific wiring diagram, usually within a day or two.

According to D'Amico, when design changes occur the gas monitoring company reacts quickly. "They start with the intent of the design engineer and when project requirements change, they rapidly revise it and provide what is needed. This helps with code compliance," he says.

D'Amico points to an example of a parking garage change on a recent multi-residential project. "When the size of car spaces was changed in the parking garage, that altered the



NEW ADVANCED WIRELESS SYSTEMS ARE IDEAL SOLUTIONS FOR RETROFITS OR EXPANSIONS OF EXISTING GAS DETECTION NETWORKS.

gas monitoring coverage," he says. "So, their engineering department sent us a revised plan with the radius of their gas sensor coverage overlaying the parking garage, showing what could be done. They also added the additional sensors that were necessary, which made the change very easy."

Saving Weeks on a Resort Construction Project

For John Rainone, a senior project manager with Automated Logic, a Carrier company, the main benefit of working with a vendor with gas monitoring expertise was expediting a multi-million-dollar project, a 5-star resort & casino on the East Coast. The vendor provided certified engineering drawings up front and as needed.

"No one waited for us on the parking structure job, which was key because the project carried a significant per day late penalty. Altogether, the design expertise probably saved us between two to four weeks," says Rainone.

The Multi-Gas Monitoring System by Acme, installed on the project to prevent excess carbon monoxide and nitrogen dioxide accumulation, is a gas detection network capable of communicating in real time with any smart device. The system utilizes industry-standard communication protocols like Ethernet and BACnet that allow remote supervision and reporting to building automation systems.

The four-level underground parking structure is approximately 100,000 sq. ft. Although the original specifications called for 300+ carbon monoxide and nitrogen dioxide detectors, Rainone says Acme produced engineered drawings that proved the coverage only

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Continued on Page 38

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Product Spotlight

Acme Gas Monitoring

Continued from Page 36

required 257 sensors. This turned into a cost savings for the project.

According to Michael Follo, a project manager from Automated Logic involved with the parking structure portion of the resort project, the modular nature of the gas monitoring system provides needed design flexibility.

"You want adaptability to accommodate change. For example, if an office is added in a garage, that changes the requirements for the carbon monoxide and nitrogen dioxide gas sensors," says Follo.

In the case of the resort parking garage, an enclosed car wash station was added in the structure so it was necessary to add an ad-

ditional sensor.

"As long as you keep good wiring diagrams, you can add a sensor and tie into the system," says Follo. "That was a key piece of Acme doing the engineering up front to ensure that we had extra slots available per channel."

Follo also points out how such a system can typically save energy from the intermittent operation of ventilation equipment.

"If you did not have the detectors to check air quality, the ventilation would need to run continuously to change the air. Instead, the gas detection system checks the air quality and only runs ventilation when it is necessary," says Follo.

According to the ASHRAE Applications Handbook, this type of advanced, variable, CO-based de-

mand ventilation control strategy can decrease energy costs by over 60% compared to continuously operating ventilation. Additionally, wear and tear and maintenance on the mechanical and electrical equipment is reduced.

Next Generation Wireless

Although wired installations have long been utilized to install gas monitoring networks in parking garages, new advanced wireless systems are ideal solutions, particularly for retrofits or expansions of existing systems.

Acme, for its part, has developed a wireless version of its MGMS system that incorporates a unique Wi-Fi capability so it is not necessary to have a control panel as the sole point to receive feedback from the gas detec-

tion network. With the wireless MGMS users can observe current conditions via their computers, tablets, and phones, with real-time alarms in case of emergency.

For large garages that are more than 100,000 square feet, the wireless capability is extremely advantageous from an installation point of view by reducing installation time and costs. Gas detection networks, generally speaking, are installed by licensed electricians and labor costs are fairly high. With wireless gas detection networks, all that is required is mounting the sensors and establishing the connection with the system.

"[Wireless gas monitoring] is cost effective because a lot of the installation costs on a carbon monoxide system are the running

of the wires," says Rainone.

"Obstructions such as steel beams and concrete walls make it difficult to run wiring, and cause delay," adds Rainone. "A truly reliable wireless system could make it unnecessary to drill through a wall or penetrate a steel beam to run wire. In some cases, this approach could eliminate some of the electrical costs, while expediting the project."

For more info, visit Acme Engineering Prod. Inc. at acme-prod.com or in the U.S. Phone: 518-236-5659; Fax: 518-236-6941; mail them at Trimex Building, Route 11, POB 460 PMB 10, Mooers, New York. In Canada Phone: 514-342-5656; Fax: 514-342-3131; mail them at 5706 Royalmount Ave., Montreal, Quebec, H4P 1K5.

New Products

Nu-Calgon Mini-Split Cleaning Solution



Nu-Calgon has launched a new Complete Care Mini-Split Maintenance Kit that contains everything a contractor needs to clean up to four mini-split units. This easy-to-use kit ensures mini-splits can be cleaned of dirt and debris, while protecting surrounding walls and floors of the living space. Each kit includes these

quality Nu-Calgon products:

- 2 cans of Tri-Pow'r® HD Aero-sol coil cleaner
- 2 packs of Gel Tabs™ Mini condensate pan treatment
- 1 Clean Guard mini-split maintenance bag
- 1 Nu-Calgon service bucket

The Complete Care Mini-Split Kit makes cleaning and servicing mini-splits easy by providing a complete line-up of necessary chemicals and tools. The Clean Guard bag ensures that the surrounding area is protected from potential over-spray or water splashes. The provided Tri-Pow'r HD guarantees the mini-split is properly cleaned and brought back to peak efficiency, while the Gel Tabs Mini provide lasting protection from clogs and costly over

flows.

More information: www.nucalgon.com.

Bell & Gossett CRS



Bell & Gossett, a Xylem brand, has announced the expansion of the CRS Coalescing-Style Air & Sediment Separator product line. The extended CRS line – available for use in any HVAC system – helps break entrained air and suspended solids out of system fluid, efficiently removing these contaminants and improving heat transfer and energy efficiency.

"This expansion to our CRS product line provides our customers next-level adaptability for commercial systems," said Chris Kerback, Bell & Gossett product line manager, Engineered Specialties. "Now with even greater variety of sizes, connections and configurations, the Bell & Gossett CRS line improves contaminant control in any HVAC system design."

With lower energy use and its robust design, the CRS helps protect pumps, boilers and other components, improving and prolonging the life of a system. The CRS separator's internal coalescing media efficiently removes up to 100 percent of fluid contaminants – including entrained and

free air and suspended solids out of HVAC systems, improving heat transfer capabilities and resulting in energy efficiencies.

Features and benefits of the Bell & Gossett CRS line include:

- Lifting Lugs – makes moving and installing easier
- Threaded Connection – provides optional air vent or can be used for connection to an expansion tank
- Optional Skim Valve – removes large volumes of air during system fill

- Stainless Steel Coalescing Media (patent pending) – helps break the surface tension within the system fluid to release air and allow bubbles to rise to the top of the tank for removal or direct to the expansion tank

- Tank Body Design – is twice as large as the inlet and outlet nozzles providing a reduction in fluid velocity, easing the removal of entrained air and suspended solids

Bell & Gossett CRS Coalescing-Style Air & Sediment Separators are available in a number of models to best fit a system's requirements. Models are available for air-only, sediment-only, and air/sediment combo separation, with the option for a removable or non-removable coalescing media, and for standard or high velocities.

More information: www.bell-gossett.com.

BOLT Locks

Award-winning technology specifically designed to help protect valuable equipment is the latest "must-have" tool for construction companies, contrac-



tors, landscapers or any business who tows a trailer. The patented "Breakthrough One-Key Lock Technology" of **BOLT Locks** is a convenient security option for protecting hitches, utility or enclosed trailers, equipment and more, all while reducing key clutter on a keychain.

BOLT Locks use specially crafted tumblers to memorize a vehicle's ignition key the first time it is inserted into the lock. One complete turn of the key moves the tumblers to fit that one specific key, resulting in a uniquely programmed lock. The days of having to use different keys for each lock are gone.

"BOLT Locks are truly unique in that they are a useful solution to reducing key clutter because the ignition key is used to operate any BOLT lock. Anyone that tows will find our One-Key Lock Technology both innovative and practical," explained Jason Buckles, BOLT Sales Account Manager. "Commercial fleets can make duplicates of the master ignition key if they have multiple drivers."

BOLT's stainless steel coupler pin lock fits couplers from 1/2-inch to 3 3/8-inches in 1/8-inch

Continued on Page 39

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New Products

Continued from Page 38

increments, providing a snug fit. BOLT's coupler pin lock secures the locking lever from any movement and serves dual purposes: locking a trailer ball when hitched to a vehicle or making the coupler unusable when off of the vehicle. When the trailer is not hitched to a vehicle, the coupler pin lock secures the locking lever so that it cannot be moved in order for a different vehicle to attach a ball mount to the trailer.

BOLT Lock's Receiver Lock is the other dual purpose lock for towing. Designed to lock the ball mount receiver onto the vehicle's hitch, the Receiver Lock comes in two sizes: 1/2-inch and 5/8-inches. BOLT Lock's 1/2-inch Receiver Lock fits Class 1 and 2 hitches while the 5/8-inch Receiver Lock fits Class 3, 4 and 5 hitches. The receiver locks work by locking the ball mount to the receiver. When the ball mount is attached to the receiver hitch of the vehicle, the receiver lock is inserted and locked into place. This specific lock can be used whether or not a trailer is hitched to the vehicle. The receiver lock prevents the ball mount from being stolen from the vehicle as well as preventing the trailer itself from being

stolen with the ball mount receiver.

Market demand for a lock to protect unattended trailers led to the design and creation of the company's hardened steel Off-Vehicle Coupler Lock. Featuring bold red BOLT brand coloring, the robust device serves as a visible theft deterrent when placed on the trailer's coupler to prevent a trailer from being stolen and secured to another vehicle.

More information: www.bolt-lock.com/store.

Brass Knuckle SmartSkin

Why double dip? Usually because you want more of something good. In the case of **Brass Knuckle** SmartSkin™ nitrile gloves (BKNITR2), double-dipping them in nitrile butadiene rubber (NBR) gives wearers twice the protection and twice the grip. Nitrile stands up to chemicals, oils, most harmful cleaning solvents, and resists bodily fluids and waste. If you have to work in unpleasant substances and it's vital that you hang



onto your tools, SmartSkin is the right choice.

SmartSkin starts with a thin gauge, 18 mil nylon shell with a full NBR over coat. Then a second

coat of NBR is added to full fingers and palm – and this coat has a sandy finish that's extra grippy, even when wet. In addition to added grip, the second coat provides extra resistance to abrasions, tears, and punctures in critical wear areas (nitrile has three times the puncture resistance of latex).

SmartSkin gloves are also the barrier of choice for workers in the oil and gas sector. These workers need

Continued on Page 40

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Technical Training

Continued from Page 24

measurement the pascal is, we'll first consider a scale of measurement HVACR technicians are familiar with, the water column inch (w.g.) scale. When we consider standard pressure in PSIG (Pounds Per Square Inch Gauge:

27.70" w.g. = 1 PSIG

When measuring in water column inches and comparing it to standard gauge pressure we are measuring in a fine scale, and often accomplishing a measurement in fractions of a water column inch. Now, to fully appreciate the pressure measurement employed in blower door testing (the pascal), consider:

25 Pa = 0.1" w.g.

Simply put, performing a blower door test to evaluate the tightness of a structure is so precise, the process will identify problem areas that could not be found through any other process.

MERV 13 pleated air filters are ideal for improving indoor air quality, effectively capturing tiny particles in the 1 - 3 micron size range. Parker offers a complete line of MERV 13 filters with 100% synthetic media that's resistant to moisture, mechanical damage, and microbial growth. Our consistent pleat shape delivers low resistance, full-depth dust loading, and longer service life. And with independent testing, our MERV 13 filters are verified to match their published status right out of the box.

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New Products

Continued from Page 39

impermeable gloves that protect against skin exposures when working around any oil operations and when transferring process fluids. Durable nitrile is ideal protection for these applications and more.

More information: www.brassknuckleprotection.com/products/smartskin-bknitr2.

• • • • •

RectorSeal Solvent Cements

RectorSeal®, Houston, announces the release of enhanced solvent cements and primers in a wide variety of sizes and formulas for welding PVC, CPVC, and ABS pipe installations while offering customer requested convenience features and enhanced



performance benefits.

RectorSeal primers properly etch the pipe surfaces to ensure a consistent and robust weld every time. Several RectorSeal primers are now ATSM F656, LEED, and NSF 61 Certified, including Jim PR-1L, Clear PR-2L, and Bill PR-3.

Jim PR-1L is a fast-acting, high-etch, purple primer for PVC

and CPVC pipe, tubing, and socket-type fittings. Low-VOC, LEED Compliant, and NSF approved for potable water systems, and it offers a shelf life of up to 3-Years. Its purple color ensures an easy visual check to ensure complete coverage. Clear PR-2L offers similar features as Jim PR-1L but is transparent. Bill PR-3 is also a clear primer that etches and penetrates surfaces, increases the bonding strength on PVC and CPVC systems, and helps to make a clean, professional-looking joint. Manufactured from high-quality 100% virgin materials, it has a shelf life of up to 2-years.

In response to customer requests, the following solvent cements are now available in wide-mouth gallon cans:

- Gold 844L – No Primer

Needed Medium body CPVC solvent cement

- Homer 828L – Gray, Heavy Body PVC solvent cement
- Pete 602L – Fast Setting, Clear, Medium body PVC solvent cement
- Arctic 616L – Clear, Fast Setting, Medium body solvent cement for cold weather application
- Hot 203L – Very Fast Setting, Blue, Medium Body PVC solvent cement

- PVC Electrical Conduit 633L – Fast Setting, Medium body, Electrical PVC conduit solvent cement

In addition, Arctic 616L and Gold 844L are now reformulated, offering an improved viscous formula designed to provide a smoother application and stronger bond.

More information: www.rectorseal.com.

• • • • •

Fieldpiece Instruments MG44



Fieldpiece Instruments introduces a new wireless vacuum gauge, model MG44. Stepping in to replace the SVG3 vacuum gauge, the MG44 wireless vacuum gauge features a large LCD screen with three user-selectable data views as well as hi and low alarms, all housed in a durable no-slip grip case. With the addition of wireless capability, the new vacuum gauge allows HVACR professionals to view vacuum readings with the Fieldpiece Job Link® System App, or on the SMAN™ Refrigerant Manifold.

The new Wireless Vacuum Gauge MG44 can be used three ways: 1) as a standalone vacuum gauge 2) with a Job Link enabled device to monitor up to 1000' away from the gauge or have a Job Link live look-in consultation and 3) monitor the external gauge through the SMAN SM380V/ SM480V digital refrigerant manifold. With this up to the minute information, the HVACR professional knows when an extra nitrogen purge is required, a leak is suspected, or if the process is proceeding normally. Professional Job Link reports can be generated from this data as well.

The large LCD screen on the unit can be easily seen in bright or low light and from a wide angle. The user can select one of three unique views, including a new Rate Meter that shows the real-time change per minute, a Bar Graph that has a range up to atmosphere, or the Rate that shows the change per minute.

The reversible angled coupler as well as the new cylindrical shape, makes it easy to orient the gauge so that it is out of the way and yet easy to see. Built for demanding field use, the patented, over-molded case design resists damage from physical impact and water ingress.

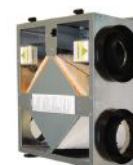
More information: www.fieldpiece.com/product-category/recovery-and-vacuum/.



For more information, please go to www.gearypacific.com/IAQ

With the current pandemic, it is imperative to know how best to protect ourselves and those around us. Studies are showing that HVAC systems have been found to play a role in how well we're protected against COVID-19. Because of that, ASHRAE, (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) has given some direction of what should be done with HVAC systems to better protect against the spread of COVID-19.

- 1. Ventilation** - COVID-19 has the potential to be recirculated through a building by the air conditioning system. By bringing in more outside air, we can dilute contaminated air. Depending on your location, increasing outside air as much as possible could bring in very hot or cold air or polluted air, which is bad for energy efficiency and respiratory health. There are ventilation options available for wall mount units, rooftop units, and standard split systems.
- 2. Filtration** - Increase the HVAC air filters to a minimum of MERV 13 efficiency or higher if the system can handle a more restrictive filter. The MERV rating of a filter tells us how efficient it is at capturing particles of varying sizes. As the MERV rating increases, the filter gets better at capturing smaller particles. The downside to filters with high MERV ratings is that they become restrictive on the systems airflow. Reducing airflow means we are exposed to the same stale, stagnant, sick air found in buildings for a much longer time. Higher rated filters are able to be added to most HVAC systems.
- 3. Ultraviolet Purification** – Use UV lights in the HVAC equipment to neutralize any potential airborne viruses. UV light has been used for decades in destroying microbes. UV light has the most proven track record in destroying viruses on surfaces and in the air. We have UV systems that can be added to roof top units, wall mount systems, and even ductless air conditioning systems.



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Home Depot Foundation Expands Trades Training Initiatives with Path to Pro Program

The Home Depot Foundation is expanding its \$50 million trades training commitment with the launch of the Path to Pro scholarship program to train the next generation of skilled tradespeople.

The scholarship program will grant \$250,000 in financial assistance to high school seniors and graduates entering or currently enrolled in building construction trade programs. Scholarships will be awarded

by The Home Depot Foundation's nonprofit partner, SkillPointe Foundation, and will be selected based on requirements including:

- Candidate must be a current high school senior, high school graduate, or have a GED equivalent planning to attend an accredited building construction trade college or postsecondary program in the U.S.
- Candidate must be intending to enroll or currently enrolled in an accredited building construction



trade college or postsecondary program in the U.S.

To learn more about The Home Depot Foundation's Path to Pro scholarship program and to apply, visit www.myscholarship.app/home-depot-foundation.

"Over the past three years, we have introduced more than 15,000 to the

skilled trades and certified more than 5,000 to work in the trades," said Shannon Gerber, executive director of The Home Depot Foundation. "Through financial assistance to aspiring students, expanded grants to our existing program and exciting new partnerships to support social equity through career readiness, our commitment to filling the skilled labor pipeline is stronger than ever."

Presently, the growing labor shortage in the construction

industry has nearly 300,000 career openings offering competitive incomes. The Path to Pro scholarship program is intentionally designed to help remove financial weight for students entering the skilled trades while preparing them for the diverse available career paths.

Earlier this year, The Home Depot Foundation granted \$30,000 in scholarships for SkillsUSA's National Signing Day to celebrate students who have chosen to pursue a career in the skilled trades.

Emerson Donates Unique Refrigeration Technology

Emerson donated a unique, sustainable refrigeration architecture that was developed at its Helix Innovation Center in Dayton, Ohio, to the city's Gem City Market – a collaborative grocery store that provides fresh food amid a local food desert.

The Gem City Market is a Dayton Foundation cooperative market initiative to help address food insecurity in downtown Dayton, which has been designated a "food desert" by the U.S. Department of Agriculture Economic Research Service. Food deserts are defined as regions with a 20% or greater poverty rate and where a third or more of the residents live more than one mile from retail outlets selling healthy and affordable food.

To help ensure safe, high quality food at the market, Emerson donated its Copeland™ scroll booster refrigeration architecture – the first technology to be commercially developed at Emerson's Helix Innovation Center in Dayton. Emerson's scroll booster technology enables Gem City to combine a low-pressure, low GWP refrigerant with a distributed architecture, which is emerging as a sustainable alternative to large centralized systems.

While its design flexibility lends itself to store formats of varying sizes, the distributed scroll booster technology addresses various modern supermarket refrigeration priorities, including:

- Sustainability: Low-GWP, A1 refrigerant (e.g., R-513A) and reduced refrigerant charge.
- Serviceability: System familiarity with technicians and end users.
- Stability: Low total cost of ownership; from lower annual

energy consumption and lifecycle climate performance, lower leak rates due to lower-pressure system and lower utility costs.

- Security: Secure remote facility monitoring capabilities.

In the future, as even lower-GWP refrigerants (such as A2Ls) are approved for use by applicable codes and standards, the Copeland scroll booster can be adapted for use with alternative refrigerants (less than 150 GWP).

"Creating innovative technologies that help the communities we call home is fundamental to our identity and purpose as a company," said Jamie Froedge, executive

president of Emerson's Commercial & Residential Solutions business. "We are proud to put this technology to work and meet a community need in Dayton, where we researched and developed this leading-edge solution."

Emerson, along with business partners Hussmann and Chemours, donated refrigeration equipment in service of the Gem City Market collaborative initiative. Donations include assembly components and 10 low temperature booster systems from Emerson; the assembled refrigeration system from Hussmann; and low-GWP refrigerant Opteon™ XP10 (R-513A) from Chemours.



REPRESENTATIVES FROM EMERSON, CHEMOURS, HUSSMANN, AND THE GEM CITY MARKET BOARD GATHER IN FRONT OF THE NEW STORE.

Johnstone Supply – Oakland Group

We are honored to be part of this large 60,000 sq ft., 840-ton WSHP- cooling tower project. With a set of incomplete blueprint drawings and client seeking assistance, they turned to Johnstone Supply. With the help of our Technical Service Manager, Rich Aldrich, and many vendors, we were able to coordinate this project for our client and make them happy.

The system design is comprised of 176 Climate Master variable-speed water-source heat pumps, 4 open loop cooling towers, with a closed-loop process water system sharing Mueller plate and frame heat exchangers. We also added system water treatment and a Niagara 24hr BACnet, 22-point monitoring control system with complete automatic redundant on demand variable speed operation.



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Michigan Cannabis Grow-Op Increases Yields with HVAC System Retrofit

Fabric duct combined with VRF pinpoint temperature/humidity is partially responsible for Real Leaf Solutions' 20-percent harvest increase.

Like most North American cannabis industry grow-ops, Real Leaf Solutions (RLS), Kalkaska, Mich., is still refining its growing methods, but the two-year-old company may have finally found a state-of-the-art HVAC design that will help it reach optimum yields in the near future.

Tom Beller, RLS' co-owner and chief operations officer, believes his latest HVAC retrofit for two 1,500-square flowering rooms is a major step toward optimum

harvest goals. It consists of fabric duct supplied by six and eight-ton variable refrigerant flow (VRF) systems; a combination he'll use when doubling the operation this year from 12,000 to 24,000 square feet. Beller's confidence is backed by last harvest's 20-percent yield improvement, which he attributes partially to the new HVAC design.

Beller's HVAC retrofit design team was headed by mechanical contractor, Marc Burnette, president, Superior Heating and Cooling (SHC), Traverse City, Mich.; Brad Bonnaville, regional sales manager at fabric duct manufacturer FabricAir, Lawrenceville, Ga.; the Fujitsu VRF team at Johnstone Supply, Traverse City; and Jeromy LaRock, outside sales



A CLOSE-UP VIEW OF FABRICAIR'S FABRIC DUCTING.

West Michigan at manufacturer's representative, Major Lozuaway, Grand Blanc, Mich.

Prior RLS HVAC challenges revolved around getting airflow to the plants and their soil-less peat/coca mix at the right velocity, uniformity, temperature and relative humidity (RH). The fabric duct solution incorporates a linear orifice array at the 4 and 8 o'clock positions on each 20-inch-diameter. The Combi 70 fabric also disperses approximately 12-percent of the airflow through the duct's permeable surface to prevent condensation. The factory-engineered permeability and linear dispersion result in a uniform 2,500-CFM air distribution per duct

run that helps plants thrive.

Meanwhile, each flowering room's four ceiling-hung V-II Airstage Fujitsu evaporator units supplied by two outdoor heat pump condensers can maintain Beller's preferred 77°F and 56-percent RH within a tight ± 1 tolerance. SHC's Burnette set up each room to provide cooling/dehumidification and heating from any of the four evaporators simultaneously, if needed. The design is invaluable when latent and sensible heat load shifts during light/dark room cycles create environmental changes unsurmountable by conventional HVAC air handling equipment. Beller said the VRF stabilizes and pinpoints temperature/RH settings without adding portable dehumidification or humidification equipment that other grow-ops depend on.

Finding the Best HVAC Combination

When opened in February 2019 as one of the first recreational and medical marijuana grow-ops certified and licensed by Michigan's Marijuana Regulatory Agency (MRA), RLS struggled to maintain optimum growing conditions resulting in yields "we knew could be improved upon," according to Beller. The all-metal building's flowering rooms were supplied with conventional DX split systems. The ceiling-hung air handlers' metal spiral ductwork with registers every 10 feet created drafts, hot spots and air stratification that affected yields.

The new HVAC environment however, not only raises yields, but the enhanced air comfort is also increasing staff productivity. "It (the flowering room with the fabric duct/VRF system) is a totally different environment; you get a very strange sensation when entering compared to the other rooms," said Tyler Pickard, RLS's lead cultivator, who upon entering the first time immediately gathered his cultivation team to experience the air comfort difference.

RLS will save energy costs as well, because fabric duct's more uniform air distribution was proven more efficient than metal duct/register systems, according to a study conducted by the Iowa State University Mechanical Engineering Department. Improved air dispersion leads to narrow temperature room gradients, decreased HVAC



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Case Studies

run-times and up to 24-percent less energy consumption versus metal duct, according to the study.

Furthermore, metal duct is prone to condensation formation in humid environments. Metal duct's galvanization process contains toxic silver oxides that drip into the soil with condensation, get absorbed by the plants and ultimately infiltrate the cannabis-user. State governments regularly check for heavy metals and can mandate a failed cannabis harvest's destruction. "Using antimicrobial fabric duct is an advantage for us, because Michigan's MRA has the strictest heavy metal and mold test standards in the U.S.," said Beller.

Maintaining Sanitary Environments

RLS cleans every flowering room after harvesting. Disassembling and commercially laundering the fabric duct, which requires less than a half-day for one employee, is also part of the disinfection process even though the fabric is antimicrobial. "Cleaning metal duct is difficult in place, and taking them down would require the added costs of a contractor with the correct equipment," said Beller. "Laundering the fabric duct just makes a more sterile environment."

Other disinfection efforts include the air handlers' 100-percent return air bipolar ionization modules manufactured by AtmosAir Solutions, Fairfield, Conn., which floods the rooms with positive and negative-charged ions. The ions disinfect and electrically attach to airborne contaminants thereby making them large enough for entrapment in the air handlers' MERV-8 media filters.

Fabric duct's lighter weight and installation ease enabled SHC's two-person crew to install five 35 to 38-foot-long duct runs in less than three days and without heavy-duty lifting equipment or removing the facility's dozens of 1,000-watt, double-ended, mixed spectrum, high pressure sodium light fixtures. Each run is suspended on a PVC-coated metal cable hung two foot below the 14-foot-high ceilings. Metal duct would have required twice the time, a larger installation crew and interfered with post-cleaning fast-track planting.

RLS's future plans include doubling its space by spring 2021, installing more efficient

lighting with variable spectrums and retrofitting the current third and fourth flowering rooms with fabric duct and VRF.

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MARK S. INGRAO

The Plumbing-Heating-Cooling Contractors–National Association (PHCC) announced that **Mark S. Ingrao**, CCP, CAE, has been selected as its new CEO. PHCC CEO Michael Copp will retire from PHCC in December 2021, and Ingrao officially assumed duties as CEO on October 22 during PHCC’s annual business meeting at PHCCCONNECT2021 in Kansas City, Missouri.

Ingrao brings more than 18 years of executive-level association management experience, most recently serving as CEO of the Northern Virginia Building Industry Association. Prior to that, he was president and CEO of the Greater Reston Chamber of Commerce. He also has served as principal of Aspen Strategies, LCC and vice president of government affairs for the National Apartment Association. He began his association career with the Apartment and Office Building Association.

“Mark has a solid record in association management, a keen eye for small business having served as a local chamber executive, and experience working with construction industry stakeholders,” said PHCC President Hunter Botto. “We welcome him to our team, confident that he will continue to expand the services we offer our

member contractors, strengthen our industry partnerships, and build a better future for PHCC and the industry.”

Ingrao has been exposed to the building trades his entire life; his father was a carpenter and owned a construction company specializing in high-rise multifamily and commercial complexes. Prior to his association positions, he was an associate with the executive recruiting firm of Heidrick & Struggles, manager of recruitment for the National Business Development Practice of Arthur Andersen, LLP, and held various positions at Washington Gas.

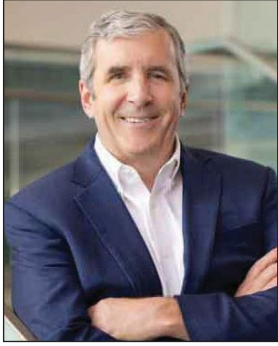
Ingrao also is active with several professional and community organizations, having served on boards for the Fairfax County’s Economic Advisory Commission, Reston Hospital Center, Northern Virginia Transportation Alliance, and the University of Mary Washington, among others.

He earned a Bachelor of Arts degree in Economics from the University of Mary Washington and is a Certified Association Executive (CAE) and a Certified Compensation Professional (CCP).

.....

Trane Technologies announced that **Dave Regnery**, current president and chief operating officer, has been named CEO and will join the board of directors. He succeeds Mike Lamach, who will serve as executive chair of the board until his planned retirement from the company sometime in the first half of 2022.

“Dave Regnery is the clear choice to lead Trane Technologies into the future, consistent with our comprehensive succession plan,” said Lamach. “Dave has worked



DAVE REGNERY

alongside me to shape nearly every aspect of our global business – from our business operating system, to our sustainability and innovation leadership, to the development of our culture of inclusion and engagement, which has led to a deep pool of leadership talent. Dave was the co-architect of our transformation as a focused climate innovator. He is an exceptional leader with a deep understanding of our industry, the sustainability megatrends affecting our businesses, our customers’ needs, and how to create value for our stakeholders. I have complete confidence in Dave as he becomes CEO and leads Trane Technologies forward.”

As president and chief operating officer, Regnery has had direct responsibility for the company’s three regional reporting segments and full portfolio of businesses and brands, including Trane and Thermo King. He also has had oversight of the company’s global business operations, including supply chain, engineering, and information technology.

Regnery has been with Trane Technologies for his entire career, beginning in the company’s financial leadership development program, then progressing through financial and commercial leadership and general management roles. Throughout his tenure, Regnery has led all of the company’s businesses around the world, including the Commercial HVAC, Residential HVAC, and Transport Refrigeration businesses.

“I’m honored to serve as CEO for Trane Technologies, as we continue to push the boundaries on climate innovation,” said Regnery. “We have the best team, strong customer relationships, and a passion to innovate, grow, and create value for all our stakeholders – our team members, customers, communities, and shareholders.”

Lamach, who was named CEO in February 2010 and elected chair of the board of directors in June 2010, will become executive chair. In this role, Lamach will continue to chair the board and work closely with Gary Forsee,

incoming lead independent director, on governance matters, and with Regnery on the company’s long-term strategic plans, until his retirement sometime in the first half of 2022.

In 2019, Lamach was named one of Harvard Business Review’s top performing CEOs and listed by Forbes among America’s 100 Most Innovative Leaders. He has served as chair of the National Association of Manufacturers since June 2019. Lamach also serves on the board of directors of PPG Industries.

.....

The ECCO Group announced the creation of the ECCO Sales and Distribution business unit and the appointment of **Ray Newstead** to head the Canadian division as division vice president.

“I am confident that with the addition of Ray to our team of exceptional leaders, we will continue building and ultimately executing ECCO’s goal to be the top choice for HVAC supplies and building products for our customers and vendor partners,” said Bill Davis, vice president and general manager of The ECCO Group. “We are a fast growing company and are better positioned for the future with the changes we are making.”

Ray joins ECCO as a senior executive, with many years of building products and HVAC industry experience, most recently in the role of CEO and prior to that in the roles of vice president of operations and chief financial officer. He will be responsible for the oversight of Canadian operations that includes ECCO Supply and the National Accounts sales team.

“I’m very excited to join ECCO at this transformative time,” said Ray Newstead. “It’s my pleasure to lead this new division that includes ECCO Supply, already an established leader in the Western Canadian HVAC wholesale market. We look forward to building on our strengths to better help our customers succeed with the best products and service and winning together in the weeks and months ahead.”



RAY NEWSTEAD



DAVID BURKS

Diversified CPC International (DCPC) announced that **David Burks** has been appointed chief operating officer.

Burks joined the Diversified CPC International Team as executive vice president in September 2018, after a 25-year career at Worthington Industries. While at Worthington, he held several management roles in sales, commercial, and manufacturing operations. He also led the integration of several key strategic acquisitions in the company’s refrigerant and industrial gas cylinder business.

“David has a proven record of achieving consistent year over year top and bottom-line growth,” said DCPC President and CEO Bill Auriemma. “Since joining the DCPC executive management team, he has demonstrated the skills and foresight to execute our long-term growth targets while maintaining a focus on safe manufacturing and logistics operations, quality customer service, and sustainable business practices.”

“I am thrilled to take on this new challenge and to help the company strengthen its position as a global leader in the design, production, and distribution of the highest quality aerosol propellants, hydrocarbon refrigerants, and specialty applications,” Burks said. “DCPC will continue to distinguish itself in the marketplace by offering value-added services including product innovation, outstanding operational and technical excellence, and unmatched end-to-end customer service. I look forward to working with the entire team to identify new opportunities for continuous improvement and future growth.

Burks has also served on several boards and industry trade groups throughout his career. Most recently, he was appointed to the Household and Consumer Products Association board of directors and the Alliance for Consumer Education board of trustees. He is a former member of the Air Conditioning, Heating, and Refrigeration Institute (AHRI); the Gas and Welding Distributors Association; and the Heating, Air Conditioning, Refrigeration Distributors International (HARDI) group.

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“Luis brings a track record of sales achievement in a variety of

Atlantic Westchester Inc. announced a new hire, **Thomas J. McCarthy**, as vice president of business operations. McCarthy brings more than 25 years of experience in sales and management to the team at Atlantic Westchester.

"I'm excited to join the team at Atlantic Westchester," said Tom McCarthy. "I've spent many years assembling successful teams of sales professionals, so I know a good team when I see one. This is a group of dedicated people I can strategize with, create with, and grow with. I'm happy to bring my leadership and management experience to Atlantic Westchester and be a part of the company's



McCarthy will create and manage the company's annual business plan; expand the salesforce; develop a customer service department; monitor all billing to assure optimum cash flow; and train, direct, and evaluate staff in various forms of efficiency.

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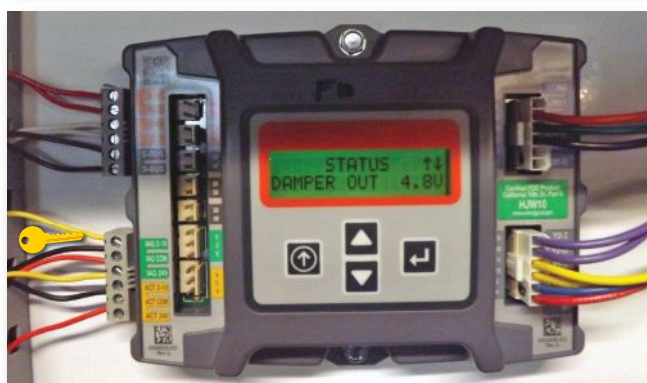
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- ▶ How to determine that the controls are operating properly, including thermostats, outdoor ventilation and demand controlled ventilation.
- ▶ How to determine if the Economizer is working properly. Functionally testing an air economizer cycle to verify that an HVAC system uses outdoor air to satisfy space-cooling loads when possible.
- ▶ How to verify proper fault detection and reporting for automated fault detection and diagnostics systems for packaged DX units.



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These tests will represent the most popular tests which are NRCA-MCH-02-A – CAV, NRCA-MCH-03-A, NRCA-MCH-05-A, and NRCA-MCH-12-A.

With this hands-on demonstration, you will have a much better understanding of what the most popular Mechanical Acceptance Tests are all about as well as see what tools will be required and how they are to be used to take these measurements.

HONORING OUR HVAC ESSENTIAL WORKERS

IHACI'S 41st Annual HVAC/R/SM – Performance Contracting Product and Equipment Trade Show

TUESDAY November 16, 2021

Pasadena Convention Center • 11:00 a.m. - 7:00 p.m.

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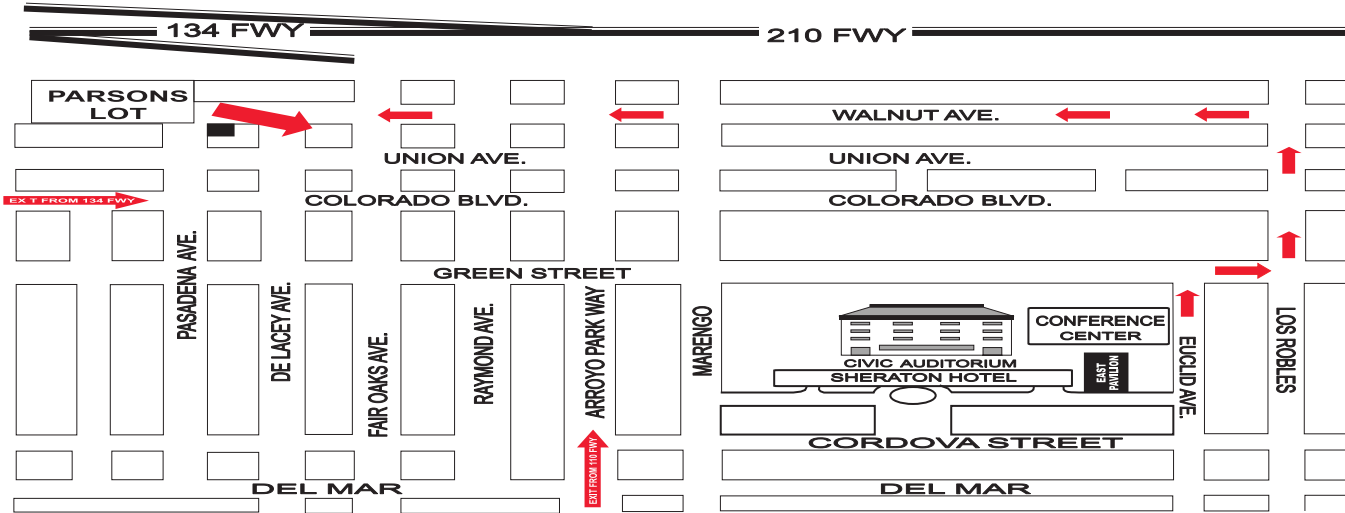
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PRESENTATION AREA		129		229		329		429		529		629		729	
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ENTRANCE

ENTRANCE

IHACI's 41st HVAC/R/SM TRADE SHOW FLOOR PLAN

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SEMINAR SCHEDULE

SEEKING A CAREER IN HVAC/R/SM PERFORMANCE CONTRACTING?

Time: 11:00 a.m. – 12:30 p.m.
Location: Ballroom A/B

This seminar is targeted to students seeking a career in HVAC as well as existing employees seeking career direction and educational opportunities. Employers will have a candid conversation with attendees regarding what they are looking for in future employees as well as the different job opportunities available in the HVAC/R/SM Performance Contracting industries. The question and answer period will allow students to ask questions about their career opportunities, advancement, growth, development, and longevity in the HVAC field.

This is a panel presentation that includes industry leaders: Mark Ramirez, President, IHACI, and President, Comfort Climate Control, Azusa, CA; Dean Gilford, Vice President, IHACI, and President, Kilowatt Heating, Air Conditioning & Electric, Sherman Oaks, CA; Bob Wiseman, Board of Directors member, IHACI and President, Canoga Park Heating and Air Conditioning Company, Canoga Park, CA; John Dalton, CM, Co-Chair, IHACI's Education Committee, Universal Air Conditioning, Bell Gardens, CA.

COMMERCIAL ACCEPTANCE TESTING WENT INTO EFFECT OCTOBER 1, 2021

Time: 1:30 p.m. – 3:00 p.m.
Location: Ballroom A/B

Building Energy Efficiency Standards, Title 24, Part 6, Acceptance Test Technician Certification (ATTCP) Program: As of October 1, 2021 "ALL" commercial equipment replacement and installation projects will be required to be tested, certified, and registered through the ATTCP Program! This presentation covers a brief introduction, status, and compliance requirements related to the ATTCP Program from both an Acceptance Test Employer (ATE) and Acceptance Test Technician (ATT) standpoint. IHACI has been working with the California Energy Commission (CEC) for the past four and a half years to stay abreast of these regulations and will continue to work with utilities and the California Energy Commission (CEC) to keep you informed. IHACI will also continue to work with Energy Code Ace as they fulfill their mission to do outreach to the building departments throughout California on all aspects of Title 24, including the ATTCP Program.

This panel presentation includes the following industry leaders: Mark Ramirez, President, IHACI, and President, Comfort Climate Control, Azusa, CA; Bill Brown, Director, Brownson Technical School, Anaheim, CA; Lori Schiavo, Executive Vice President, Refrigeration Service Engineers Society (RSES), Rolling Meadows, IL; John Dalton, CM, Co-Chair, IHACI's Education Committee, Universal Air Conditioning, Bell Gardens, CA.

A CLOSER LOOK AT A2L REFRIGERANTS

Time: 3:30 p.m. – 5:00 p.m.
Location: Ballroom A/B

The global transition to low-global warming potential (GWP) refrigerants has already begun and is affecting both residential and light commercial air conditioning and refrigeration. R-410A and other HFC refrigerants will begin to be phased down on January 1, 2022. Similarly, equipment manufactured for HFC refrigerants will be phased down as well. The HVAC/R industry will transition to new equipment, and new refrigerants, many of which are Low GWP Refrigerants. These refrigerants include A2Ls (slightly flammable) types and are the topic of this important seminar.

Presenters: Jeff Warther of The Chemours Company ("Chemours"), formally DuPont, the inventor of Freon refrigerants, will be presenting this informative and fact-based navigation of the current and future rules, regulations, and proposed timelines as it applies to both the residential and commercial HVAC/R installer, service technician, and HVAC/R contractor. John Dalton, Educational Committee Co-Chair will be joining him during this presentation.



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Advertiser Index

ADVERTISER.....ICN PAGE
AHR Expo - International Exposition Co.....34
Airex Manufacturing5
American Refrigeration Supplies (ARS)10
Arkema, Inc.45
Baker Distributing Company16
Carrier Corporation37
Dial Manufacturing23
Emerson Commercial & Residential Solutions43
Energy Code Ace18
Ferguson HVAC2
Ferguson HVAC3
Fieldpiece Instruments12
Geary Pacific Corporation40
GoGreen Financing.....24
Goodman.....52
GREE Electric35
IHACI Membership Ad50
Inaba Denko America.....19
Johnstone Supply41
Mitsubishi Electric11
North American Technician Excellence (NATE).....22
Olimpia Splendid, USA13
Pacific Systems Group, Inc.....4
Pacific Gas & Electric (PG&E)17
Parker Hannifin.....39
Pro-Source38
Rapid Duct Testing25
R.E. Michel Company.....42
RGF Environmental Group, Inc.....15
Rotobrush International8
San Diego Gas & Electric (SDG&E).....14
Shurtape.....6
Sierra Chevrolet33
So Cal Gas.....7
S & P USA Ventilation Systems.....20
Spunstrand36
The Chemours Company21
USACD.....9
Vent Cap Systems44

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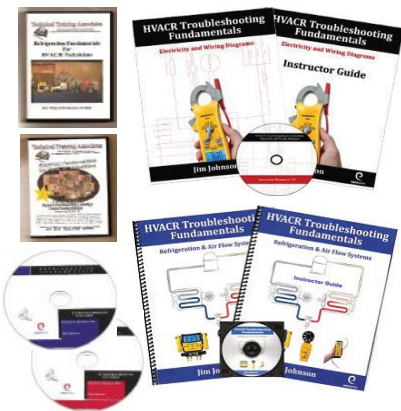


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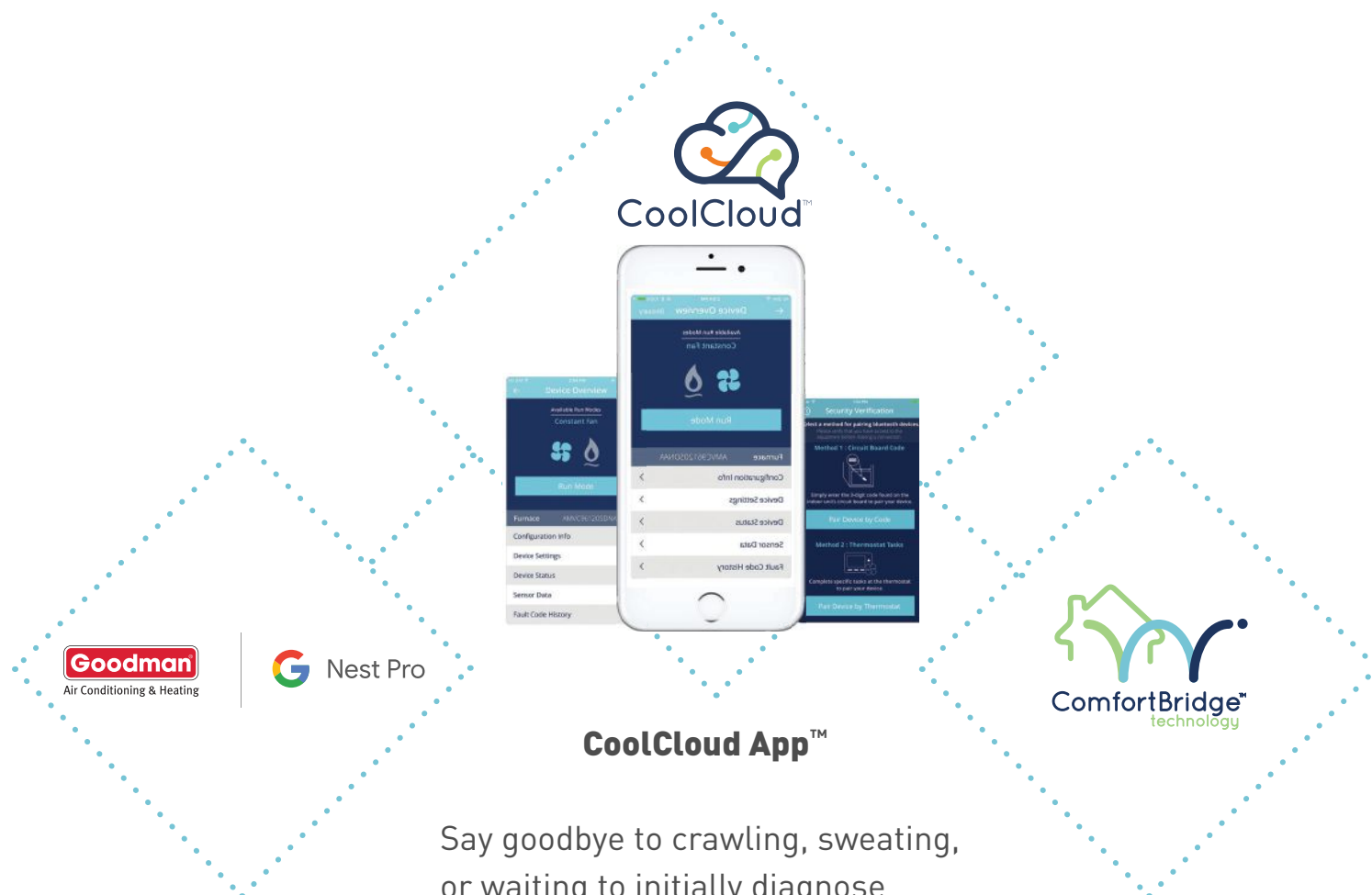


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