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MAY 2023

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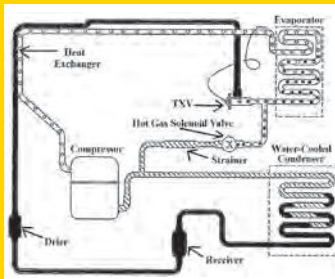
THE WEST'S LEADING MONTHLY NEWSMAGAZINE FOR THE AIR CONDITIONING, HEATING, REFRIGERATION, SHEET METAL AND VENTILATING INDUSTRIES



Editorial Focus

What's new? What's been improved? Find out here as ICN takes a look at the latest offerings in Motors and Drives, Compressors and Controls.

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Troubleshooting

In this month's troubleshooting problem, the equipment that needs servicing is an ice machine.

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Indoor People

ICN puts the spotlight on the movers and shakers in the heating and air conditioning industry.

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California News

San Francisco Latest City to Ban Gas Furnaces

NOx-emitting natural gas furnaces and water heaters will be phased out over time, beginning with water heaters in 2027.

The Bay Area Air Quality Management District board of directors adopted amendments to Regulation 9, Rules 4 and 6, to eliminate emissions of nitrogen oxides, or NOx, from residential and commercial natural gas furnaces and water heaters in the Bay Area by requiring new appliances to be zero-NOx.

Emissions from natural gas building appliances account for a similar amount of NOx pollution as passenger vehicles in the Bay Area. As a group, they are one of the largest emitters of nitrogen oxides of all stationary sources of air pollution, which the air district regulates.

"The 1.8 million water heaters and furnaces in the Bay Area significantly impact our air qual-

ity, resulting in dozens of early deaths and a wide range of health impacts, particularly in communities of color," said Dr. Philip Fine, executive officer of the air district. "This groundbreaking regulation will phase out the most polluting appliances in homes and businesses to protect Bay Area residents from the harmful air pollution they cause."

The rule amendments would apply only to new appliances and do not mandate the immediate change out of existing appliances, nor will they apply to appliances used for cooking, such as gas stoves. NOx-emitting natural gas furnaces and water heaters will be phased out over time, beginning with water heaters in 2027. The rule amendments will improve overall regional air quality from the outdoor venting of these appli-

Continued on Page 14

Industry News

Plastic Underground Duct Now Approved in All Model Mechanical and Energy Codes

By Jay Peters,
Principal Advisor, Codes
and Standards International

Plastic is the preferred material in the building industry for underground ductwork because it won't corrode and will remain air- and water-tight for the life of the assembly. Plastic ducts are preferred to fiberglass ducts because fiberglass is toxic to those assembling the duct and requires toxic disposal of unused assembly material.

Despite these health and safety advantages, underground ducts fabricated from plastic materials have been held to a misapplied standard by mechanical codes and received more scrutiny than is necessary. Plastic ducts deserve greater approval by the code industry – and recent revisions and clarifications to code have made this clear.

Codes Have Been Misunderstood and Misapplied

Two criteria have made it historically more challenging to utilize plastic underground duct systems. First, they have been unfairly restricted due to misinterpreted mechanical codes for

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PLASTIC DUCT READY TO BE INSTALLED AT A PROJECT SITE – PHOTO COURTESY OF AQC INDUSTRIES.

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CALIFORNIA



Nonprofit Launches Free Construction Camps for Children

San Jose, Calif. – The Rosendin Foundation, a 501(c)(3) nonprofit incorporated to positively impact communities, build and empower people and inspire innovation, is proud to announce the launch of TRF Camp Build, a unique summer program designed to inspire and empower middle school students to discover the joy of building with their hands. Recognizing the significant shortage of workers in the construction industry, The Rosendin Foundation aims to bridge the gap by providing students with invaluable hands-on experience and a new perspective on career options.

“Investing in the education and training of the next generation of builders is critical to the future success of the construction industry,” said Jolsna Thomas,

president, the Rosendin Foundation. “Through TRF Camp Build, we are excited to provide students with the opportunity to be exposed to working with their hands in a safe, supportive environment that will inspire and empower them to consider career options in the construction industry.”

TRF Camp Build is a summer program designed for current sixth to eighth graders who are interested in learning how to design and build projects using power tools. This free co-ed day camp offers hands-on construction experience and equips students with the necessary skills to continue building in the future. Under the guidance of skilled professionals, participants will learn essential skills, such as personal safety, concrete/rebar work, soldering, pipe bending, building information modeling (BIM), heavy equipment operation, framing/woodworking, roofing, and painting, while also exploring exciting career opportunities.

Throughout the program, students will engage in various interactive projects, such as wiring lamps, pouring concrete stepping stones, and building doghouses, which they will donate to the local community. Inspired by Rosendin’s participation in the national Camp NAWIC, TRF Camp Build provides students with a safe

environment to explore different career paths in construction and gain practical learning experience.

The TRF Camp Build program will take place at the following locations and dates:

- May 6: Sherman, Texas, (Electrical Mini-Camp) at MPS - 3007 Fallon Drive;
- June 5-9: Gallatin, Tennessee, at Rosendin - 359 Maple Street;
- June 10: Anaheim, California, (Electrical Mini-Camp) at Rosendin - 1730 S Anaheim Way;
- June 19-23: Tempe, Arizona, at Rosendin - 1315 W Drivers Way; and
- July 24-28: Austin, Texas, at Austin Electrical Training Alliance - 4000 Caven Road.

TRF Camp Build has received generous support from sponsors and in-kind donors, including diamond-level sponsorship from sister companies Rosendin and MPS. In-kind donors include Milwaukee Tools, Stanley Black and Decker, Border States, and Sunbelt Rentals.

The Rosendin Foundation supports community nonprofits around the country that promote emotional, nutritional, and occupational health programs. The Foundation is a 501(3)(c) of Rosendin Holdings, the parent company of Rosendin, one of the nation’s largest design-build specialty electrical contractors, and Modular Power Solutions (MPS),

one of the nation’s largest electrical manufacturing companies.

The deadline to apply for TRF Camp Build is March 31. For more information, visit <https://www.therosendinfoundation.org/camp-build>.

EPIC2024 Set for Anaheim, CA

Sacramento, Calif. – Contractor University and OPTIMUS Financing, both divisions of EGIA, are proud to announce next year’s edition of EPIC will occur March 11-12, 2024, at the Disneyland Hotel Convention Center in Anaheim, Calif.

After calling Las Vegas home for the last six years, EPIC2024’s location will provide an all-new environment for attendees to learn from celebrity keynote presenters, acclaimed industry trainers, and their fellow peers in the industry. Additionally, the new Monday-Tuesday conference schedule creates an opportunity for contractors to enjoy Disneyland with their families on the preceding weekend or during the less crowded weekdays following the event. Deeply discounted hotel accommodations at the world-famous Disneyland Hotel

along with reduced-price theme park tickets will be available to conference registrants.

The EPIC conference series has built a reputation for its commitment to education for home services contractors who want to build the businesses of their dreams along with unforgettable networking parties and opportunities to see once-in-a-lifetime keynote presentations. This past March, EPIC2023 saw 1,000-plus attendees gathered at Caesars Palace to view breakout presentations led by thought leaders – as well as keynotes by iconic personalities, including Steve Young, John C. Maxwell, Jillian Michaels, and David Garibaldi. EPIC2024’s keynote and breakout session presenters, to be announced at a later date, will continue the tradition of delivering an exceptional speaker line-up for all those who attend.

“We are thrilled to host EPIC2024 at the Disneyland Hotel Convention Center, one of the premier locations for conferences and a unique destination as it relates to industry events for the year ahead,” said Bruce Matulich, CEO of EGIA. “We’re committed to building on the momentum and unforgettable experiences EPIC has created over the years, having established itself as the ultimate educational experience for contractors.”

The Disneyland Hotel Convention Center offers exceptional facilities, amenities, and convenience between conference location and accommodations. Set in the heart of the Disneyland Resort, attendees will have easy access to all of the attractions and entertainment that the resort has to offer, including restaurants, bars, shopping, and one of the world’s most renowned amusement parks. For more information, visit www.epic2024.com.


Bluon, Sera to Integrate Platforms

Irvine, Calif. – Bluon Inc. and Sera Systems Inc., two HVAC software companies, announce their plan to join forces to modernize and bring a new level of productivity to the HVAC industry from OEM to distributor to contractor to technician and all the way to the consumer.

HVAC is a well-established \$150 billion industry, yet Gallup estimates that, on average, HVAC

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Industry News

businesses are operating at a staggering low 32% efficiency. Together, Bluon and Sera, for the first time, can materially impact these inefficiencies through the combined power of their next-generation platforms, which are both focused on creating far more efficient and effective technicians in the field.

Bluon, home of one of the largest HVAC communities on earth, supports HVAC contractors and their technicians in the field while connecting them with their local brick-and-mortar distributors increasing their quality of life, productivity, and bottom line. With Bluon, techs have a single source that is brand-agnostic for community interaction, equipment documentation, live 24/7 tech support, and acquiring parts and materials from their local distributors. Bluon provides the first data and transactional throughline from OEM to distributor to contractor to technician, providing material value to each.

Sera, a field service management software offering, partners with contractors to improve their bottom lines by optimizing key business levers: time management, tech efficiency, cash flow, and membership management. Sera's unique platform and consultative approach enables small, medium, and large contractors alike to see an enormous impact on their businesses in just a few months. As a result, Sera's customers are guaranteed to improve their margins by 50% or more within six months.

Bluon and Sera plan to integrate their two innovative platforms, which will create a comprehensive solution connecting contractors up and down the supply chain — bringing material value to all stakeholders, including OEMs, distributors, and end user customers.

"This integration is laying the foundation for a future where contractors, small and large, won't be charged a penny to have access to a suite of services and best-in-class software tools," said Peter Capuciati, CEO and founder, Bluon. "The idea of making these services and tools readily available to the small one-to-five-man shops — which make up 65% of the industry — is truly exciting."

Today, Bluon and Sera

announce their plans to begin integration while they encourage customers to adopt both platforms to gain immediate and meaningful benefit during the 2023 season.

This approach will not only bring substantial value to their shared contractor customers but will provide valuable insights and feedback to inform the full integration of their two innovative platforms.

For more information, visit www.bluon.com.

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Bigge, Empire Crane Form Partnership

San Leandro, Calif. — Bigge Crane and Rigging Co., one of the nation's largest crane sales and rental companies, is pleased to officially announce the acquisition of



the majority stake in Empire Crane Company. The alliance between Empire and Bigge's Perfect Fleet® of over 1,800 cranes and 21 maintenance facilities is now even more readily available to customers on the East Coast. This new partnership is an essential milestone for both companies, which will benefit crane buyers worldwide with a true coast-to-coast offering.

Empire Crane has a long-standing reputation in the crane business, known for its extraordinary sales support and crane service. Its partnership with Bigge and the resulting expansion of Empire into the Gulf, Mountain, and West

Coast regions will help bring even more robust sales support to its customers across the US and globally. Crane buyers will now access dealer pricing and priority ordering for leading crane manufacturers, including Tadano, Kobelco, Liebherr, Manitowoc, Potain, Peiner, Terex, Comedil, Broderson, Merlo, Magni, Xtreme, Manitex, and Jekko. This strategic relationship will give customers access to more inventory and reduce freight costs associated with shipping equipment nationwide.

"I've known Paul and Luke for over 20 years. They're the two most trusted Principals in the crane and equipment sales business," said Weston Settlemier, CEO of Bigge Crane and Rigging Co. "Furthermore, the Lonergans are the two best partners Bigge has ever had.

I personally have been promoting the benefits of principled partnerships for over 12 years and the Bigge/Empire collaboration will be the standard by which all future partnerships are judged."

Empire's President Paul Lonergan echoed Settlemier's sentiments saying, "We are thrilled to join forces with Bigge — the pillar of excellence in the crane business for over a century, and, like us, to be in business with a family-owned company with common business values. This strategic alliance provides our customers access to Bigge's extensive sales inventory and over a century's experience building and maintaining the Perfect Fleet of cranes."

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Continued on Page 6

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Harvest Thermal Makes “Most Innovative” List

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

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

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

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

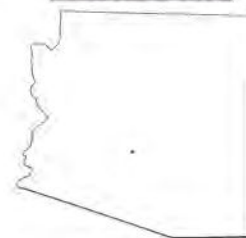
system cuts carbon emissions by 90% compared to gas and 50% compared to standard heat pump configurations. Homeowners also save up to 48% on monthly heating bills, enabling cost-effective adoption at scale.

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

For more information, visit www.harvest-thermal.com.



ARIZONA



ECM Technologies Named Finalist for Environmental Excellence Award

Phoenix, Ariz. – ECM Technologies, an HVAC efficiency and energy conservation company, has been named a finalist in the Arizona Forward Environmental Excellence awards for its signa-

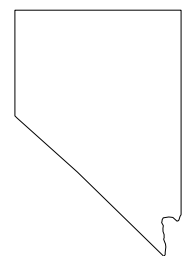
ture product, ThermaClear™, a nanotechnology HVAC treatment that helps decarbonize commercial buildings to accelerate a more sustainable future. The Environmental Excellence awards program, presented by SRP, is one of Arizona’s most prestigious recognitions related to statewide projects that impact quality of life and sustainability.

ECM Technologies’ ThermaClear treatment was selected from nearly 65 nominations as a leading innovation by a judging panel made up of leaders and experts in the community. Specially designed to help commercial facilities reduce their carbon emissions and energy consumption by up to 20% annually, ThermaClear also lowers the amount of power required to run HVAC equipment, which translates to less maintenance issues and extended equipment life.

The City of Phoenix Public Works department has implemented ThermaClear for up to 12 million square feet of conditioned space after running numerous, highly successful, long-term pilot programs over the past four years in the valley. With a 10% average energy reduction after ThermaClear treatment, the city of Phoenix is set to save more than 9,000,000 kilowatt-hours (kWh) per year. This equates to energy cost savings of over \$1 million per year.

For more information, visit <https://ecm-technologies.net>.

NEVADA



Ferguson Holds Day & Night Dealer Meeting in Las Vegas

Las Vegas, Nev. – The West HVAC team from Ferguson recently hosted their fifth annual Day & Night Elite Dealer Meeting in Las Vegas, and it was an event that left attendees raving. With over 400 people in attendance, including 350 dealers, the two-day conference was filled with informative presenta-

Continued on Page 8

	
	
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Continued from Page 6

tions and networking opportunities that were second to none.

The event was masterfully hosted by Calvin Merideth, who served as the MC for the conference. Calvin did an exceptional job of keeping the event on track, engaging the audience, and ensuring that everything ran smoothly. His contributions were instrumental in making the event a success.

One of the standout moments from the event was the keynote speech from Ferguson CEO, Kevin Murphy. Attendees praised his insights, which provided great value to the audience. The breakout speakers also delivered top-notch presentations, making the event an excellent opportunity for attendees to learn about the latest trends and best practices in the HVAC industry.

In addition, the sales managers from West HVAC also deserve recognition for their hard work and dedication in making the event a success. Their efforts were crucial in ensuring that the attendees had an excellent experience and that the presentations and networking opportunities were of the highest quality. The sales managers went above and beyond to ensure that the event was a success, and their contributions were greatly appreciated by all who attended.

However, the event wasn't just about learning. Attendees were also treated to a fantastic social event at Drai's Night Club on Thursday evening, sponsored by valued vendor partners. This gave attendees a chance to connect with each other and network with vendors in a fun and relaxed atmosphere.

Looking ahead, the Ferguson HVAC West sales and marketing



(ABOVE) FERGUSON HVAC RECENTLY HELD ITS DAY & NIGHT ELITE DEALER MEETING IN LAS VEGAS. KEVIN MURPHY, CEO, FERGUSON ENTERPRISES (RIGHT).

teams are already planning for next year's event, promising an even bigger and better experience in 2024. This annual event is a testament to West HVAC's commitment to excellence and their dedication to providing their dealers with the latest knowledge and resources in the industry.



Carrier Names Top Award Recipients

Austin, Texas – In a continued effort to help ensure its HVAC dealers and distributors are benefiting from industry-changing innovations and programs, Carrier hosted a three-day National Factory Authorized Dealer Meeting and awards celebration in Austin, Texas. Carrier is part of Carrier Global Corporation (NYSE: CARR), the leading global



provider of healthy, safe, sustainable and intelligent building and cold chain solutions.

Carrier inducted John Ferguson of Ferguson Veresh, Inc. of Wichita Falls, Texas into its Dealer Hall of Fame. Robert Madden of Robert Madden Industries from Lubbock, Texas received the Carrier Distributor Lifetime Achievement Award and more than 400 dealers received the Carrier President's Award. These awards were established to recognize dealers and distributors who exemplify exceptional leadership in business management, customer satisfaction, HVAC expertise and operational excellence.

Emmitt Smith, NFL Hall of Famer, businessman and entrepreneur, delivered the event keynote speech and discussed the principles that have helped him succeed both on and off the field.

The meeting featured education-packed training sessions led by industry experts. Each course provided credit hours toward participants' Carrier Factory Authorized Dealer designation, Carrier's rigorous standards and training program. Topics included:

- Workforce development to attract HVAC technicians.
- Transitioning from contractor to owner, leadership skills and finance management.
- Excellence in sales, from leads to closing conversations.

"Our National Factory Authorized Dealer Meeting reminds us that we truly have the best in the business," said Justin Keppy, President, NA Residential and Light



JUSTIN KEPPEY, PRESIDENT, NA RESIDENTIAL AND LIGHT COMMERCIAL HVAC CARRIER, AT THE COMPANY'S RECENT DEALER MEETING.

Commercial HVAC, Carrier. "The training sessions underscore our commitment to being the industry leader not just in manufacturing, but also in customer service. Congratulations to John Ferguson, Robert Madden and all our President's Award winners."

To learn more about Carrier's Factory Authorized Dealer program and awards, visit www.carrier.com/residential/en/us/why-carrier/carrier-authorized-dealers/.



Fexa Acquires Refrigerant Software Company Trakref

Mullica Hill, N.J. – Fexa, a facilities management enterprise SaaS solution company, acquired Trakref, a refrigerant tracking and management software provider.

With looming regulation from the U.S. Environmental Protection Agency (EPA) and the U.S. Securities and Exchange Commission's (SEC's) new carbon reporting requirements that are expected to be announced this year, companies must navigate once-in-a-lifetime cost and compliance pressures in the face of economic headwinds, increasing sustainability goals, and rapidly changing customer needs that are pushing facilities and assets to their limits.

"Fexa was founded on the principle that innovative technology can play an essential role in helping companies maximize the potential of their facilities," said Kurt Smith, CEO of Fexa.

"We felt uniquely positioned to help the industry solve the immediate challenge of tracking and managing refrigerants. We did an exhaustive search for the best solution to solve this problem, and it became clear that there is no equal to Trakref's rules engine in terms of providing a fully compliant, audit-ready solution. Ensuring a seamless transition for all customers and partners is our top priority."

Typically, cost management and compliance are addressed separately, but these growing challenges demand a holistic approach. With these added capabilities, Fexa will deliver a comprehensive solution that empowers facility owners, operators, and service providers to manage facilities efficiently, maximize the longevity and performance of assets, meet compliance regulations, and deliver against sustainability goals.

"We have seen how the Fexa CMMS platform has helped multi-site businesses manage their facilities more cost-effectively," said Chris Jernigan, executive managing director, Cushman & Wakefield Facilities Solutions. "The Fexa platform is extremely efficient and created more than a 35% reduction in clicks to process a work order within my organization. The addition of Trakref is a natural evolution of their platform, as refrigerant compliance will require tight coordination between facilities managers, service providers, and HVAC/R assets. I have first-hand experience with both platforms, and the possibilities of this partnership are very exciting for our clients. It's the true definition of synergy being created between two great solutions. Fexa should be commended for listening to the market in terms of the real needs of facility managers and taking action to bring this solution together all within one platform."

"The combined company will continue to make its unique products and services available independently to customers and

Continued on Page 10

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partners across the retail, grocery, health care, financial services, data center, real estate, and food services industries as they rapidly innovate to deliver new, integrated capabilities,” continued Jernigan.

Hiller Named ACCA Residential Contractor of Year

Alexandria, Va. – The Air Conditioning Contractors of America (ACCA) named Nashville, Tennessee-based Hiller Plumbing, Heating, Cooling, Electrical its 2023 Residential Contractor of the Year.

Each year, ACCA’s Residential Contractor of the Year Award is presented to a contracting company that demonstrated an extraordinary commitment to contractor excellence. Finalists are judged on a range of qualities, including community involvement, industry involvement, and a commitment to training and certifications. A panel of ACCA past board chairs judge the finalists and select the winner.

“ACCA applauds Hiller Plumbing, Heating, Cooling, Electrical for their proven greatness in HVACR,” said Barton James, ACCA president and CEO. “From humble beginning to the powerhouse regional contractor they are today, Hiller is an excellent example of how working in the trades is a quality career choice.”

Jimmy Hiller, founder and CEO, and his son, Jimmy Hiller Jr., COO, of Hiller Plumbing, Heating, Cooling, Electrical, received the Residential Contractor of the Year Award at the ACCA Awards & Welcome Reception on April 2, part of the ACCA 2023 Conference & Expo in New Orleans.

“We are so proud to have been named ACCA’s 2023 Residential Contractor of the Year,” said Jimmy Hiller. “At Hiller, we strive to be industry leaders with a vision for elevating the HVAC field. So this prestigious honor, awarded for innovation and positive impacts in the HVAC industry, means so much to our entire team. We are grateful to be a part of an organization like ACCA, which provides countless resources and support to contractors across the country.”

“Our organization prides itself on continual improvement, growth, and innovation in order to provide the best experience to those we serve,” said Jimmy Hiller Jr. “To be awarded ACCA’s



THE AIR CONDITIONING CONTRACTORS OF AMERICA (ACCA) NAMED NASHVILLE, TENNESSEE-BASED HILLER PLUMBING, HEATING, COOLING, ELECTRICAL ITS 2023 RESIDENTIAL CONTRACTOR OF THE YEAR.

Residential Contractor of the Year award, which recognizes our commitment to elevating the HVAC trade, is an extreme honor for each of us at Hiller. We are truly humbled to have been selected from among our deserving peers.”

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

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

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

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

One of the LG products evaluated for the AHRI Performance

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

Also tested was the air-cooled Inverter Scroll Chiller, which leverages LG’s advanced inverter technology to obtain a high level of operational efficiency. In addition to impressive performance, the chiller has a compact design that takes up little space, affording customers greater installation flexibility.

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

For more information, visit www.lghvac.com.

Newsweek Names Franklin Electric to Most Trustworthy Companies List

Fort Wayne, Ind. – Franklin Electric Co., Inc. (NASDAQ: FELE) has been named to Newsweek magazine’s list of America’s Most Trustworthy Companies 2023 – the Company’s second consecutive win. This national recognition is presented by Newsweek and Statista Inc., the world-leading statistics portal and industry ranking provider.

Newsweek selected and ranked America’s Most Trustworthy Companies based on three key performance pillars: customer trust, investor trust and employee trust. Compiling the data for these indicators included surveying 25,000 U.S. residents, completing 95,000 company evaluations and conducting a Social Listening analysis. This involved researching over 270,000 social media mentions and rating them as positive, neutral or negative. In the end, 700 companies were identified across 23 industries.

“At Franklin Electric, we take great pride in helping individuals and communities access and protect some of our most important natural resources,” said Gregg Sengstack, Chairperson of the Board and Chief Executive Officer. “Knowing that we have the trust and confidence of our employees, our customers and our shareholders is important in all that we do. It assures that we are keeping our promises and helping people move forward in their lives, in their careers and with their businesses.”

The company often conducts its own employee engagement surveys to assure its workforce is engaged and satisfied. During the most recent survey, conducted in 2021, employees overwhelmingly ranked themselves as “extremely satisfied” with their careers at Franklin Electric, praising the company’s commitment to training, safety and overall managerial support.

Trane Celebrates Inaugural Class of Trade Warriors

Davidson, N.C. – Trane Technologies’ residential HVAC brands (Trane Residential and American Standard Heating & Air Conditioning) celebrated the inaugural graduation of its first cohort of Trade Warriors to train at Fort Bragg. This cohort includes the program’s first two female graduates, Rosheen Pennant and Tavares “Talia” Moreno; two Golden Knights, Derrick Coleman and Jared Zell; and a Master Sergeant, Fred Adams. Since Trade Warriors started in 2021, Trade Warriors has successfully educated seven cohorts and has helped facilitate nearly 40 job placements for its graduates. Today, the program continues to fuel the skilled labor force by creating a pipeline of HVAC talent, providing hands-on training and job placement opportunities for America’s service men and women to pursue careers in the HVAC industry.

Originally launched at Fort

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

Registration Open for Greenbuild Conference in D.C.

Washington, D.C. – The U.S. Green Building Council (USGBC) announced that registration for the 2023 Greenbuild International Conference and Expo is now open. This year, Greenbuild will take place Sept. 26-29 in USGBC’s hometown of Washington, D.C., at the Walter E. Washington Convention Center. With new education, events, partners, and experiences, the Greenbuild conference will mark a significant milestone in the green building movement, as the site of USGBC’s 30-year anniversary celebrations.

“We have a lot to commemorate at Greenbuild – not only is it USGBC’s 30th anniversary, we also plan to debut the next version of the LEED green building program – LEED v5, to support the built environment in addressing critical imperatives including decarbonization, equity, health, biodiversity, and resilience,” said Peter Templeton, president and CEO, USGBC. “Along with our partner, Informa Connect, we are bringing together experts from around the world to share best practices, technologies, and solutions that enhance sustainability, performance, and quality of life throughout the built environment.”

Greenbuild hosts one of the largest annual events for green building professionals worldwide, featuring informative sessions, dynamic speakers, innovative products, and networking opportunities for professionals from all sectors of the building industry.

Continued on Page 12



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MAY 2023

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

JUNE 2023

**System Performance
Module
(Four-Night Class)**
Instructor: Mitch Bailey
Wed., June 21 – Part 1
Thurs., June 22 – Part 2
Wed., June 28 – Part 3
Thurs., June 29 – Part 4

MAYO 2023

**Nueva Contratación
NATE HVAC/R
(Clase-Cuatro Noches)**
En-Persona/Seminario Virtual
Instructor: Rene Aguinada
Miércoles, 10 Mayo – 1a Parte
Jueves, 11 Mayo – 2a Parte
Miércoles, 17 Mayo – 3a Parte
Jueves, 18 Mayo – 4a Parte

JUNIO 2023

**Capacitación de Apoyo
NATE HVAC/R
(Clase-Cuatro Noches)**
Seminario Virtual
Instructor: Rene Aguinada
Lunes, 5 Junio – 1a Parte
Martes, 6 Junio – 2a Parte
Lunes, 12 Junio – 3a Parte
Martes, 13 Junio – 4a Parte

All classes are currently held 6:00 pm to 8:00 pm.

Webinars are FREE of charge and online registration is required.

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



Continued from Page 10

Registration for Greenbuild is now open. Industry professionals who register by April 21 will secure the lowest prices for the 2023 conference program.

The week of Greenbuild will also feature the annual WELL Summit hosted by USGBC partner the International WELL Building Institute (IWBI), spotlighting the role of buildings and organizations in people's health and well-being. The WELL Summit will provide a deep dive into WELL strategies and feature thought leaders on its MainStage and education program, all focused on delivering well-being at the enterprise level. Greenbuild attendees can register for both the Greenbuild conference and the WELL Summit.

"Attendees coming to Greenbuild can take advantage of an extraordinary week of inspiration, networking, and learning," added Templeton.

For more information, visit <https://informaconnect.com/greenbuild>.



ABB to Expand Robotics Factory

Auburn Hills, Mich. – ABB strengthened its commitment to one of its largest customer markets – the U.S. – with construction starting on the expansion of its existing North American robotics headquarters and manufacturing facility in Auburn Hills, Michigan. The project is expected to be completed in November 2023 and represents an investment of \$20 million. The expansion will create 72 highly skilled new jobs in the

area and is supported by a \$450,000 Michigan Business Development Program performance-based grant.

"Our investment is a significant step in accelerating ABB Robotics' global leadership in developing and manufacturing cutting-edge robotic solutions in the U.S., for the Americas," said Sami Atiya, president of ABB robotics and discrete automation. "As the global mega trends of labor shortages, uncertainty, the near and reshoring of production, and a desire to operate more sustainably accelerate, more businesses are turning to automation to build resilience while improving efficiency and flexibility. Our expanded facility will help us to better serve customers in the U.S. and across the Americas, giving them access to innovative automated solutions."

Adding to the \$14 billion ABB has already invested in the U.S. since 2010, the latest investment in its robotics headquarters and factory will benefit customers in the Americas, particularly those in growth sectors including electric vehicles, health care, packaging, and logistics. With the expansion set to significantly increase the factory's production capacity, it responds to the increased demand for automation from 70% of U.S. businesses looking to bring production closer to home, as revealed by ABB Robotics' survey of 1,610 executives in the U.S. and Europe in June 2022.

"ABB's \$20 million investment creating 72 jobs will build on our economic momentum and help us continue leading the future of robotics and automation," said Michigan Gov. Gretchen Whitmer. "Thanks to companies like ABB Robotics and the support of our local partners, we can keep bringing jobs and investment to every region of our state, revitalizing communi-



ABB'S MANUFACTURING FACILITY IN AUBURN HILLS, MICH.

ties, and building an economy of the future."

ABB Robotics moved into the 538,000-square-foot building in 1993 and opened the manufacturing plant in 2015, becoming the first global industrial robotics company to fully commit to a North American robotics production footprint. The expansion and increased use of automation in the factory will create new jobs, supporting the ABB Robotics Packaging & Logistics Headquarters in Atlanta, and the Robotics Lifesciences and Healthcare Hub, located at the Texas Medical Center in Houston. ABB already has a workforce of approximately 350 employees at Auburn Hills.

ABB's footprint in the U.S. is more than 20,000 employees over more than 40 sites nationally.

"The expanded facility will feature the most advanced technology available, with AI-enabled robots and smart digital manufacturing systems supporting the production and manufacturing of state-of-the-art customer solutions," said John Bubnikovich, president, ABB U.S. robotics division. "Almost every aspect of the site will be upgraded to enrich our efforts to attract, retain, and nurture the best automation talent while creating a U.S. manufacturing hub and headquarters befitting of a global leader in automation."

This investment aims to utilize the latest digital and automation technologies to manufacture next-generation robots in the U.S., for the Americas, streamlining the delivery process and reducing lead times. Close to 90% of robots delivered to customers in the U.S., Canada, Mexico, and South America will soon be made in Auburn Hills. The plant will utilize flexible, modular production cells that are digitally connected and networked, and served by intelligent autonomous mobile robots. AI-powered robotic systems will take on tasks such as screw driving, assembling, and material handling, relieving people from these tasks and enabling more rewarding work. For more information, visit www.abb.com.



Totally Safe Air Expands Offerings

North Chicago, Ill. – AirAnswers® has announced a new partnership today with Totally Safe Air. AirAnswers and Totally Safe Air join forces to identify and eliminate indoor biological contaminants that could lead to serious health complications. Measuring biological contaminants in the air allows Totally Safe Air to provide targeted solutions tailored specifically to their clients' individual indoor environmental needs.

AirAnswers® is the only commercially available comprehensive air sampling system that detects, identifies, and measures all biological particles including molds, mycotoxins, bacteria, viruses, and allergens, down to 0.1 microns in size. AirAnswers technology provides users the ability to assess, remediate, and monitor indoor spaces for biological contaminants. By identifying the indoor airborne contaminants with AirAnswers, Totally Safe Air can now provide targeted remediation and monitoring services to detect and remove viruses, molds, mycotoxins, bacteria, viruses and allergens from indoor environments.

"The AirAnswers air sampling device is an innovative breakthrough in the indoor air quality industry," said David Saggio, CEO of Totally Safe Air. "It can capture airborne mycotoxins and allergens that could not be properly identified up until now, which will close the gap in getting complete and relevant data to the appropriate people who can help solve it."

"I am excited for this partnership with AirAnswers and being able to offer this comprehensive service to our clients. As undefined health problems continue to rise, I have seen a growing need for more detailed airborne testing. With this new and unique technology, we can now provide so much more informa-

tion and a solution that will better the indoor air quality and our clients health," said David Saggio.

"I'm happy to welcome Totally Safe Air as a partner with AirAnswers," said Jim Koziarz, CEO of AirAnswers. "This is another major step forward in our Air Quality Program that emphasizes Assessment-Remediation-Monitoring as the best way to ensure healthier indoor air. Identifying and measuring airborne biological contaminants is an essential element in providing cost-effective remediation. Combining measurement and remediation is a game changer in the indoor air quality industry and I'm looking forward to a very successful collaboration with Totally Safe Air."



HARDI, EGIA Form Partnership

Columbus, Ohio – Electric & Gas Industries Association (EGIA) and Heating, Air-conditioning & Refrigeration Distributors International (HARDI) announced a partnership with the express goals of strengthening the relationship between the associations and promoting profitable, high-quality, two-step growth in the North American HVACR industry.

For decades, the two associations have served the HVACR industry in different capacities, HARDI being focused on serving wholesale distribution companies, and EGIA primarily serving a contractor constituency.

"The decision to enter into a formal partnership will help unify efforts previously being made independently by each association into targeted and cohesive strategies designed to deliver enhanced energy efficiency services and training to contractors, distributors, and manufacturers," said Talbot Gee, CEO, HARDI.

The goals of the partnership, designed to have the greatest positive impact on contractors, distributors, and the general public, are as follows:

- Advocacy for mutually-beneficial incentive programs for the products the memberships sell and install;
- Successful execution of mutually beneficial incentive programs for the products the memberships sell and install;
- Growth in contractor utilization and effectiveness of consumer financing programs;
- Increasing the number of high-performing contractor businesses and the growth of those high performing contracting businesses;

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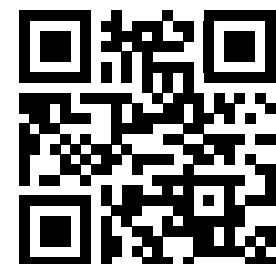
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Plastic Underground Duct Now Approved in All Model Mechanical and Energy Codes

Continued from Page 1

flame and smoke ratings as per the UL 181 standard. Secondly, they have been held to a higher- than-necessary minimum insulation requirement. Both conditions exist because underground ductwork has often been mistakenly regulated to the same standards as ducts installed within the building envelope structure.

Two model mechanical codes are implemented and enforced in the United States – the Uniform Mechanical Code (UMC) and the International Mechanical Code (IMC). Both have strict requirements for supply air and return air ducts based on the material of the ductwork, the temperature of the air within it, and the installed location. Typically, model codes are the basis for all other amended state and local codes across the country.

In the past, codes regarded all duct systems equally, regardless of whether they were located within the fire-rated confines of a building. The provisions require nonmetallic ducts to meet the proper minimum flame spread and smoke development ratings per UL 181 (specifically flame 25 and smoke 50).

Unfortunately, this section has been incorrectly applied to ducts outside the building structure. For

example, California restricted the installation of polyethylene plastic ducts for many years due to a misreading of the above-ground duct requirements in the codes.

Code Clarification from UL

A recent letter obtained from Underwriters Laboratories clarifies the intent of the UL 181 Standard for Factory- Made Air Ducts and Air Connectors. Within the letter, two of UL's respected engineers state:

"The scope and original intent of UL 181 [...] does not specifically cover factory made air ducts intended for installation underground. The requirements within UL 181 were not developed with the intent of addressing construction, performance, or other requirements for underground duct applications. Our UL certification category Guide Information for air ducts and air connectors states that air ducts are intended for indoor use only, unless otherwise indicated (ALJX)."

This letter has been critical in helping inspection departments (AHJs) better understand the installation requirements for different types of underground

ducts.

Confirmation of Plastic for Underground Ducts

To clear up confusion, Uniform Mechanical Code (2021) added section 603.5 to expressly state: "plastic air ducts and fittings shall be permitted where installed underground and listed for such use."

Since it has been clarified that the UL 181 flame and smoke standard is not applicable for underground ducts, the International Code Council's ES PMG Listing Criteria for Underground Plastic Air Ducts (LC-1014) has become the premier criteria for testing and certifying underground plastic ducts by third-party testing and listing agencies.

Recently, IAPMO, developer of the UMC, which is the basis for the California Mechanical Code (CMC), provided an Answers and Analysis response to clear up the matter in their codes. The committee issued a code analysis reiterating that the flame and smoke rating section only applies to the materials that may be added inside an underground duct but not the duct itself. The IAPMO Evaluation Report and California Supplement reinforce this outcome.

Despite these health and safety advantages, underground ducts fabricated from plastic materials have been held to a misapplied standard by mechanical codes and received more scrutiny than is necessary. Plastic ducts deserve greater approval by the code industry – and recent revisions and clarifications to code have made this clear.

Ducts constructed from High Density Polyethylene (HDPE) are now accepted in the Uniform Mechanical Code, International Mechanical Code, International Energy Conservation Code and the International Residential Code, as well as several local and home grown codes, including California's Energy, Mechanical and Residential Codes. IAPMO's Accredited Uniform Evaluation Service has created a California Supplement to verify compliance.

New Measurement for Thermal Efficiency

In addition to the minimum safety provisions being clarified, a new section of the International Energy Conservation Code allows for the typical R value of a duct to be assessed using a new scientific method – Thermal

Distribution Efficiency (TDE). This method was developed by NSF and is more thorough and practical than using a simple R value for underground ducts.

The TDE method is based on the actual performance of an underground duct system. It considers the tightness of the duct, the friction loss, and the energy consumed and lost, and compares that measurement to an externally insulated metal duct with a known R value. If the duct loses the same amount of energy within a few percent range, the duct is assigned an equivalent TDE.

AHJs and contractors can now rest assured that a plastic duct listed for underground use has an equivalent R value performance rating or TDE, is labeled accordingly, and meets all minimum safety and energy code requirements.

S.F. Gas Furnace Ban

Continued from Page 1

ances, lower exposure to particulate matter, particularly in communities of color, and avoid up to \$890 million per year in health impacts due to air pollution exposure. NOx emis-

sions impact local and regional air quality and contribute to the formation of ozone and particulate matter, or PM2.5.

Exposure to NOx has been linked to coughing, wheezing, difficulty breathing, asthma, and increased susceptibility to respiratory infections. Exposure to

particulate matter has been linked to asthma and other respiratory conditions, neurological disease, heart attack, stroke, lung cancer, and premature death. The new amendments will safeguard public health against the hazards of these pollutants and prevent an estimated 85 premature deaths, as well as

dozens of new asthma cases, in the Bay Area each year.

The air district released a draft environmental impact report and solicited comments to the proposed rule amendments through a 45-day public comment period, which ended on Feb. 6. Compliance dates are between 2027 and

2031, dependent on equipment type, use, and size. The Bay Area Air Quality Management District is the regional agency responsible for protecting air quality and the global climate in the nine-county Bay Area. For more information, visit www.baaqmd.gov/building-appliances.

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Bosch Thermotechnology Undergoes Major Rebranding

Bosch Thermotechnology, a leading global source of high-quality heating, cooling, and hot water systems, has been renamed to Bosch Home Comfort Group.

Effective as of April 1, the decision to rebrand the business group was seen as the next logical step in its evolution to combine a sustainable lifestyle with a high level of comfort through an innovative product portfolio, which includes heat pump and air conditioning systems, water heaters, gas furnaces, boilers connected to thermostats and other accessories.

"Bosch has always been an innovator since our founding and for many years now, we have led the way in developing green technology. We invent energy efficient

solutions that not only make the home more comfortable, but more sustainable for our climate as well," said Dr. Alexander Wuthnow, President and CEO of Bosch Home Comfort North America. "Now, we are excited to evolve our company through the Bosch Home Comfort brand and collaborate with our partners and industry leaders to advance toward a greener future – both for the home and our planet."

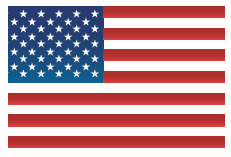
The new name also embraces the global megatrend toward electrification, with Bosch announcing last month an investment of \$737.6 million in electrification to further accelerate heat pump ramp up, specifically as high demand for climate-

friendly solutions continues globally. In the U.S., Bosch was also one of the first manufacturers ready to market with a SEER2/HSPF2 product line that meets the 2023 federal minimum energy efficiency standards.

Bosch Home Comfort saw a 68 percent increase in business growth in the U.S. last year, where Bosch has a highly competitive product portfolio of continuously variable, and thus very energy-efficient, inverter devices.

Total global investments in research and development also increased by 13 percent to \$227.6 million.

For more information, visit www.bosch-homecomfortgroup.com.



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Introducing the New EZ FIT® 6K BTU Ceiling Cassette

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



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

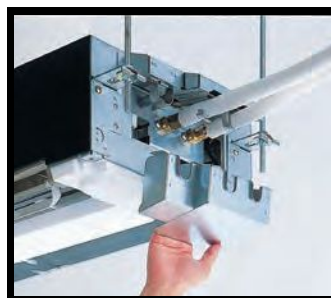
Compact Design

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



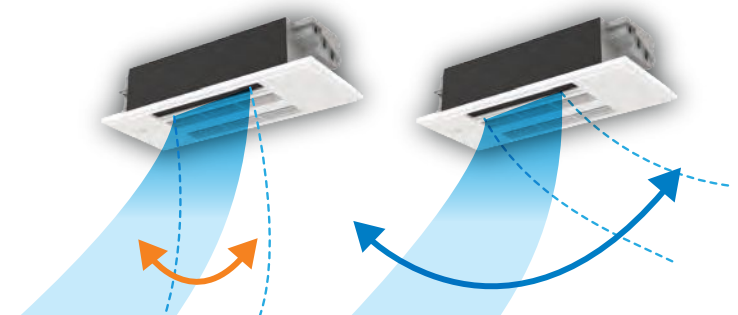
Serviceable from the Bottom

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



Auto Vane Controller

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

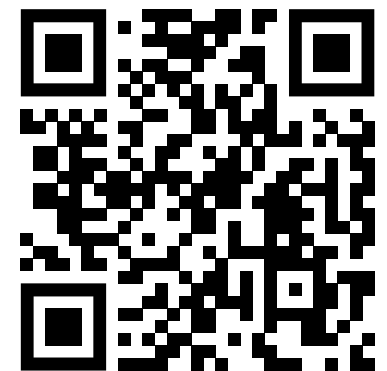




Key Features of the MLZ-KY06NA

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

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



Motors and Drives, Compressors and Controls

Heatcraft intelliGen



The intelliGen™ Refrigeration Controller by Heatcraft Refrigeration Products delivers unmatched temperature control. It reduces temperature fluctuation, brings the system to optimal temperature faster and optimizes cooling time through the fan cycling. Additionally, it detects when the system needs defrosting, which automates the defrosting cycles and saves energy costs. With a reduction in energy costs of up to 30%, the intelliGen Controller can pay for itself in as little as one year.

Ensuring consistent temperatures is not only essential to keeping food fresh and safe, but it's also necessary to prevent costly food loss from spoilage. A key benefit of intelliGen is its remote monitoring capabilities. Users can monitor their refrigeration system remotely or locally on any smart device, such as a tablet, smartphone or computer with a webservice card installed. They can receive alerts via the web, BMS, text or email to notify them of any potential refrigeration system issues. For operators with multiple cooling units in a system, up to eight unit coolers can be chained together and controlled as a single system with just one intelliGen webservice card or BMS integration card.

intelliGen provides faster system setup and smarter servicing compared to conventional controls. It offers:

- Quick, simple two-minute system setup
- Reduced installation, diagnosis, servicing and downtime
- Instant notifications of system status locally and remotely
- Remote access anywhere, anytime with smartphone, tablet or laptop

The intelliGen user interface has an intuitive design to alert operators to any problems. A colored light bar shows the system status at a glance, and a full-text display makes setup and servicing easy. The system can be configured or changed in just seconds by using the front-mounted menu buttons and turn-and-press knob.

More information: <https://intelligen.heatcraft.com/>



Johnson Controls FMS-2000C

Johnson Controls (NYSE: JCI), the global leader for smart, healthy, and sustainable buildings announces the release of the improved FMS-2000C Critical Environment Controller. The FMS-2000C helps ensure laboratory and healthcare settings are safe for occupants by continuously verifying room pressure, airflow and other important room parameters.

“Monitoring and controlling airflow in critical spaces is a vital component of any healthy buildings strategy,” said Tyler Smith, VP, Healthy Buildings for Johnson Controls. “The FMS-2000C provides industry-leading features and functionality so lab managers, nurses and other stakeholders can rest assured that their spaces are safe and healthy.”

One controller can precisely control and monitor up to six parameters across four spaces including differential pressure, temperature, humidity, CO2, air flow and air changes per hour. If designated parameters fall outside of the set range, the FMS-2000C immediately generates an audible signal as well as a yellow (warning) or red (alarm) visual alert.

The FMS-2000C features 360° Safety Halo edge lighting that is easily visible down long corridors. Ease-of-use features, such as a snooze button that can silence an alarm for a set time to help reduce audible alarm fatigue and an easily accessible tutorial video, to help support frequent nursing staff changeover.

The FMS-2000C offers an updated user experience with an intuitive navigation menu, and an easily customizable home screen with enhanced graphics including a five-inch touchscreen display that offers high-definition resolution and operates even when wearing rubber gloves. The updated menus feature larger, easier to read status and sensor readings. The interface is also available in 17 languages.

The FMS-2000C utilizes BACnet® MS/TP for easy installation, commissioning, control, monitoring and data analytics. It seamlessly integrates into Johnson Controls Metasys and third-party building automation systems.

More information: www.johnsoncontrols.com.



Lennox S40 Smart Thermostat



Lennox Industries, a trusted home comfort solutions and energy efficiency innovator for over 127 years, announced the latest additions to its industry-leading suite of smart products with the launch of the Lennox S40 Smart Thermostat and accessories, including the Lennox Smart Air Quality Monitor and the Lennox Smart Room Sensor.

With 82% of homeowners saying they prioritize good air quality in their homes more now compared to a year ago, indoor air quality continues to be an increasingly important consideration for homeowners. The Lennox S40 Smart Thermostat and accessories go beyond “smart” to ensure the most perfect air and peace of mind for homeowners by detecting air pollutants, customizing comfort by room, providing maintenance reminders and service alerts, and more.

According to the “State of the Air” 2022 report from the American Lung Association, despite decades of progress on cleaning up sources of air pollution, more than 40% of Americans – over 137 million people – are living in places with failing grades for unhealthy levels of particle pollution or ozone. Combined with the almost two-thirds of homeowners that have pets and over one-third with household members with allergies, the demand for clean indoor air is more important than ever. To combat poor quality air resulting from outdoor air pollution and other allergens, the Lennox Dave Lennox Signature Collection digital HVAC system, when paired with the S40 thermostat and the Smart Air Quality Monitor, has the exclusive ability to detect air pollutants and trigger air cleaning on demand to ensure the healthiest air possible.

The suite of technologically advanced smart accessories launching alongside the S40 Smart Thermostat – the Lennox Smart Air Quality Monitor and the Lennox Smart Room Sensor – expand the sensing and automation abilities, and the interconnectivity of the technology for an unparalleled home comfort experience.

The Smart Air Quality Moni-

tor detects and tracks particulates, carbon dioxide and volatile organic compounds (TVOC's) inside the home. When poor-quality air is detected, it triggers the system to circulate and clean the air to ensure the healthiest air possible. The monitor is the only one on the market that enables on-demand ventilation, purification and filtration based on real-time air quality readings.

The Smart Room Sensor provides accurate temperature and humidity readings to the S40 Smart Thermostat and tells it how to balance temperatures across the rooms where the sensor is placed. When a room is in use, occupancy sensors keep the set temperature. When it's not, the sensors revert to a more energy-efficient temperature. Of the 37% of homeowners who work from home more often now than they did pre-pandemic, comfortable room temperature and clean indoor air are cited as the top factors that create an optimal work-from-home environment.

More information: www.Lennox.com/Residential.



Franklin Electric Co., Inc. Little Giant 5-MSP



Franklin Electric Co., Inc. (NASDAQ: FELE) recently announced the launch of the next generation of Little Giant® 5-MSP compact submersible utility pump. The new pump offers the same compact size yet features a new motor designed to boost the pump's overall performance and efficiency.

The 5-MSP, originally launched in 1980, is considered a workhorse among landscape professionals, homeowners and hobbyists, who trust it for general water circulation in ponds, fountains, water displays and hydroponics. Among the most compactly sized and highest pumping capacities of any submersible pump on the market, it delivers proven power along with dependable operation.

Now, Little Giant is improving these iconic features with the next generation of the 5-MSP. “Our goal was to offer the same little stature that Little Giant is known for but create a bigger impact in

terms of performance and value,” says Jeff Wilder, North American plumbing product manager. “The new 5-MSP is nearly identical in core features and aesthetics to the original, but at the heart of it is much more powerful and built for the future.”

This new “heart” is a permanent split capacitor (PSC) motor that operates without oil—creating a more environmentally stable unit that is better suited for outdoor living applications. It also runs more efficiently, delivering the same or better pumping capacity than the original 5-MSP, but at greater depths, and offers continuous-duty rated for reliable 24/7 operation.

Core features such as the stainless-steel motor shaft and an epoxy powder coated aluminum body, mirror those found in the original 5-MSP. Also much like the original, the next generation of the 5-MSP is still the pump of choice to be used for any commercial, industrial, and home applications where water must be transferred or recirculated.

More information: www.littlegiant.com.



Nidec/U.S. MOTORS

Nidec's research investments over the last decade to develop highly energy efficient electrical motors are paying off for the HVAC industry. Under increasingly stringent requirements from the U.S. Department of Energy (DOE), the industry is finding that Nidec's U.S. MOTORS brand of integrated motors and drives offer efficiency levels that often exceed even the newest regulations.

Nidec motors and drives are essential components in the operation and efficiency of air conditioning and heating equipment including furnaces, air handlers, heat pumps and condensers, as well as compressors in refrigeration. Nidec serves original equipment manufacturers and retrofitters; the company also provides aftermarket replacement motors.

Nidec's new, award-winning, premium IE4/IE5 SynRA™ motor is now available integrated with the Nidec ID300 drive, allowing commercial HVAC contractors or building maintenance staff to connect to building automation. Called the ID300 Perfectspeed™, the product provides significant energy savings and low lifetime operation costs.

The company is also increasing its focus on IAQ (indoor air

Continued on Page 20

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- Built-in Wi-Fi, Bluetooth, and Sub-GHz radios
- Displays IAQ levels on free mobile app and website
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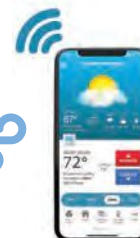
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Motors and Drives, Compressors and Controls

Continued from Page 18



quality) initiatives in 2023. Nidec's electronically commutated motors (ECMs) allow for a significant increase in air filtration, while also offering the benefit of up to 75 percent better energy efficiency when operating in continuous mode.

More information: <https://acim.nidec.com/motors/us-motors/>.



Siemens 1PH8



After considerable research and product refinement, as well as extensive field contacts with end-users, **Siemens** Industry, Inc. introduces the new 1PH8 family of high-performance induction motor drives and servomotors. Available in a wide power range, from 2.8 kW up to 1340 kW, these new motors provide excellent dynamic response, smoother operation and lower vibration levels.

This new line combines induction and high-powered servo technologies to give machine designers and end-users a greater degree of efficiency and more precision in the production process. A single stator and rotor design enables the modular adaptation of the many motor options to provide design flexibility and cost containment.

Designed for the specific performance and environmental requirements of a main spindle tool, these new Siemens induction motors have myriad applications in other heavy-duty markets, such as print unit drives on printing presses; rolls and web handling on converting and packaging machinery; crane and hoist elevation; extruders and injection molding machines; metal-forming and welding machinery; assembly line robotic articulation; materials

handling gantries and more.

The modular motor platform concept offers designers various options for selecting the optimum unit for an application:

- Assorted bearing designs for increased cantilever forces or increased speeds up to 20,000 rpm
- Shaft designs in a solid or hollow configuration to match the mechanical interface
- Forced-air or water-cooled models for choosing the better method to suit the job
- Induction or synchronous servomotor design for mating the right motor to the size requirements and dynamic response needs; both styles feature the same mechanical and electrical interface to simplify engineering
- Absolute or incremental encoders built-in for high-resolution feedback and enhanced motion control in high power level applications

The 1PH8 motor spindle line is fully compatible with the popular Siemens Sinamics® S120 drives platform to achieve faster commissioning and improved control response. All motors in this new family feature the Drive-Clig® serial interface and electronic nameplate recognition for plug-n-play start-up.

More information: www.usa.siemens.com/motioncontrol.



Taco Comfort Solutions 0026e



Taco Comfort Solutions has expanded its family of easy to use, high-efficiency ECM circulators with the addition of the 0026e. With a maximum of 26 feet of head and 44 GPM, the new variable-speed circulator offers up to 85 percent energy savings over a conventional circulator.

The 0026e circulator is available with cast iron or NSF/ANSI 61 & 372 certified stainless steel volutes, ideal for either closed-loop heating systems or domestic hot water systems. It also offers a convenient, rotatable control box for a professional look, no matter the orientation of the installed circulator.

The easily-installed, easily-programmed 0026e circulator features five simple settings; low, medium, high, Taco's exclusive

activeADAPT® self-adjusting proportional pressure, and 0-10v control. Its variable speed performance curves are equivalent to Taco's 0010, 0011, 0012, 0012 and 0014 models.

Hydronic system designers and installers will find that the new circulator is ideal for large residential and light commercial heating, chilled water cooling and domestic hot water systems. The 0026e is dual-voltage 115V/230V, and the 6.5" rotated flange-to-flange dimension retrofits most circulators in its class.

The new circulator includes exclusive features that make Taco's ECM high-efficiency circulators easy to use, including SureStart® automatic unblocking and air purging, BIO Barrier® black iron oxide protection, dual electrical knockouts, and recessed flange nut-grabbers for easier fit up.

More information: www.TacoComfort.com.



Unico, Inc. EC Motors

Unico, Inc., a leading manufacturer of small-duct central heating and air conditioning systems, has announced its commitment to mitigating climate change by making highly efficient electronically commutated (EC) motors standard for all blower models within its modular air handling units.

While the government has mandated all U.S. manufacturers of interior air conditioning components equip fan coil and blower units with EC motors by the end of the calendar year 2022 to receive efficiency ratings such as SEER and HSPF, Unico is making this change immediately.

"From the basics of our design – smaller, tightly-sealed ducting with less thermal energy loss or leakage – to our Green Series air handling units, Unico is a proud leader of energy efficient, environmentally friendly, superior indoor comfort products" said Ashton Gavelek, marketing manager for Unico. "We're excited to once again be ahead of the curve in the industry by making EC motors standard in all our fan coil unit and modular blower offerings."

Gavelek notes that while Unico is not discontinuing use of permanent split capacitor (PSC) single speed motor-equipped blowers, they will only be made available upon specific request for like-for-like replacements and/or installations involving hydronic coils (chilled or hot), as no efficiency regulations currently exist for these



applications.

"Our installing contractors are the best in the industry," adds Gavelek, "they are the early adopters of innovative, highly efficient technologies that ecologically conscious homeowners increasingly demand, so we know our excitement will extend to them in making these motors standard for most Unico System installations."

More information: www.unicosystem.com.



Watts W561



Watts has launched the Watts W561, a smart and connected WiFi thermostat that provides precise temperature control of a single-stage heating system.

When connected to the Internet, the W561 thermostat can be controlled remotely using the Watts® Home mobile app. It offers a 7-day, 4-event programmable schedule and an early start feature that automatically heats up a room by the scheduled time.

An "away" mode can be quickly and easily accessed to provide energy savings when the space is unoccupied. In addition, the thermostat supports radiant floor heating with a floor sensor that can be installed to enhance comfort and protect floor coverings.

More information: www.watts.com/w561.



White-Rodgers 50M56X-843 Control

The **White-Rodgers** 50M56X-843 Universal Single Stage Hot Surface Ignition (HSI) Integrated Furnace Control offers a single-stage universal replacement that can be configured for either PSC or ECMx blower motors.

The control is equipped with features including near field communication (NFC), which creates a wireless connection between



the control and a mobile device. Using the White-Rodgers Connect mobile app, the control allows contractors to configure the control, without power, and provide accurate diagnostics with full fault code text and troubleshooting tips. A new feature within the app is called Auto-Set, which allows users enter the replacement part number to automatically configure the HSI furnace control to the replacement part's original settings. Hundreds of OEM settings have been preloaded into the app to take the guesswork out of configuration.

More information: www.emerson.com.



Emerson Copeland ZPSK7

Emerson's next-generation Copeland ZPSK7 two-stage scroll compressors are available in 1.5- to 5-ton single-phase models, along with three-phase compressors.

These compressors are regulation-ready and will offer low-GWP compatibility while being optimized for the R410A refrigerant.

The Copeland ZPSK7 two-stage scroll compressor platform is ideally suited for customers and end-users to apply across a wide array of residential and light commercial HVAC applications including heat pumps, split air conditioning, packaged systems, rooftops, and geothermal systems.

Usage of the two-stage compressors in heat pump applications assists with building decarbonization goals for heating and cooling while also consuming less energy.

With more than 200 million scroll compressor installations and a history of rigorous product testing and extensive research, Copeland compressors offer a reliable solution to enhance system efficiency.

More information: www.climate.emerson.com/en-us.



Marketing Your Way to Success in Residential HVAC

By Lawrence Castillo
IHACI Board Member

Today's residential HVAC marketplace is more competitive than ever, and as contractors, we all spend our marketing money each month trying to jump around and wave our arms so that potential customers see and choose us over hundreds of other companies. Difficult task, and while a few companies are great at it, others don't know where to begin.

Some contractors have cracked the code, and their phones ring, their employees are busy, and they can sleep at night. Meanwhile, others are laying people off, don't have enough work for their staff, and are behind on their bills because there is very little revenue coming into the business. Regardless of which of those describes you, success in marketing requires a plan, just like anything else.

Let's take a look at a few things that can help get you on the road to a more successful marketing system:

1. Talk to your Friends

Start by talking to your friends who own businesses. If you are in a best-practices group, you have a large network to lean on. If not, you should consider joining our IHACI Peer Groups, our newest member benefit. This will be extremely beneficial to you as you grow your business (read more about IHACI Peer Groups at the end of this column). Bottom line is that you will have friends that spend 5% and some who spend 15% of sales as their marketing budget. Talk to them about what is working/not working for them and start to formulate your plan.

2. Create a Marketing Plan

As I have said before, everything in your business needs to have a process. Your Marketing Plan should include the mediums, dates, frequency, and expected return. There should be a way to track performance, and that performance should be reviewed monthly at a minimum. Your approach should be layered, as diversification helps as a hedge against risk. As well, as Jim Abrams used to preach to me many years ago, test everything that you do. Commit to a small sampling to gauge your response and ROI before

adding something to your plan.

3. Establish Your Marketing Budget

This is where many contractors get into trouble. Your marketing budget should be a reflection of where you WANT to be, not where you currently are. You should be spending your budget with the intention of meeting the growth goals of your business. As well, contractors should ever go into a month of the year not knowing what they are spending on marketing. Your tracking of your cost per booked call is easy to achieve in most CRM's. You should also be tracking the revenue that each campaign generates so that you can decide if you should renew the campaign from month to

month.

I realize that for some of California's sophisticated contractors, all of their marketing expenses well accounted for.....but for every contractor who is well organized, there is another that has never read the words that I just typed. We all must start somewhere.

4. Choose a Marketing Partner

Once you are able to look in the mirror and be honest about the fact that you don't have any personal Google Certificates, or that you don't know the success of search terms in your city, you can begin your search for a Marketing Partner. The monitoring of your digital reputation, the creation of engag-

ing content, and the generation of new leads is a full-time job. Some businesses keep it in-house, while many choose to find a Marketing Partner to manage their efforts.

If you choose to find a Marketing Partner, then you must speak with their references. In today's world, everyone says they are an expert, while few rightfully hold the title. Your Marketing Partner should meet with you weekly and provide reporting on the success of your website traffic, your online campaigns, your direct mail calendar, email campaigns to your service base, social media campaigns and engagement, and all other mediums that you use and their success rates.

We all get so busy running our businesses.... don't let your growth plan suffer. A Marketing Partner can help to keep you on track, especially if you lack the knowledge and experience of where and how to spend your budget.

5. Don't Wait! Begin Working on Your Company Reputation Now

If you are a 2-star or 3-star rated company, your marketing spend shouldn't be designed to drive people to your Google My Business or Yelp pages. In that case, you would actually be spending money to help people decide they shouldn't do business with you. Until you clean up your act, and that should be someone's full time job, then you need to use other

Continued on Page 31

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Design Paths to Earning Water Conservation Credits for Evaporative Cooling Towers

By Neal Walsh and Robert Downey, Baltimore Aircoil Company

Evaporative cooling towers play an important role in green buildings by significantly reducing energy consumption when they supplement or replace traditional air conditioning systems, thereby reducing carbon footprint and operating costs. Although evaporative cooling is great at saving energy, it does consume some water but the benefits on energy savings outweigh the water usage, which in some places is a scarce resource.

Water conservation is therefore a high priority in designing and operating water-cooled equipment and plays an important role in US-GBC's Leadership in Energy and Environmental Design (LEED) certification and other sustainability programs. LEED assigns credit points to reduce water usage.

Two Design Paths

The LEED options for reducing potable water consumption in cooling towers can be separated into two strategies:

Get more use from the potable water. The first strategy is directed at maximizing the use and value of each gallon of potable water used in evaporative cooling by optimizing the cooling tower's cycles of concentration (COC). The success of this strategy and the ease or difficulty of implementing it is highly dependent on the quality of the available potable water.

Substitution of non-potable water. The second LEED recommended strategy – which can be combined with the first – is to substitute non-potable water, such as HVAC condensate or rainwater, for some portion of the total water consumed. Analogous to the use of solar and wind as “alternative energy” sources to replace or supplement fossil fuel consumption, the use of non-potable water acts as an “alternative water” source, replacing potentially scarce drinking water. Obviously, the viability of this approach depends on the types of available non-potable water sources.

For some of these design paths, achieving the desired reduction of potable water use comes with some potential side effects and new challenges that must be evaluated and addressed. For instance, increasing the COC is more difficult when the local water has high hardness. Another example is HVAC condensate and rainwater that are often great naturally-soft options for non-potable water. It should

be noted that these introduce the potential problems of airborne particulates that foster biological growth and of corrosiveness to the cooling equipment.

Water Consumption in a Cooling Tower

To understand the principle of COC, we must step back and understand the causes of water loss in a cooling tower.

Evaporation (See **Figure One**). Water vapor is a major byproduct of evaporative cooling, and the Environmental Protection Agency (EPA) estimates that about 1.8 gallons of water are evaporated for every ton-hour of cooling. According to the EPA, “evaporation is the primary function of a cooling tower and is the method that removes heat from the cooling tower system. The quantity of evaporation is not typically targeted for water efficiency, as it is responsible for the cooling effect.”

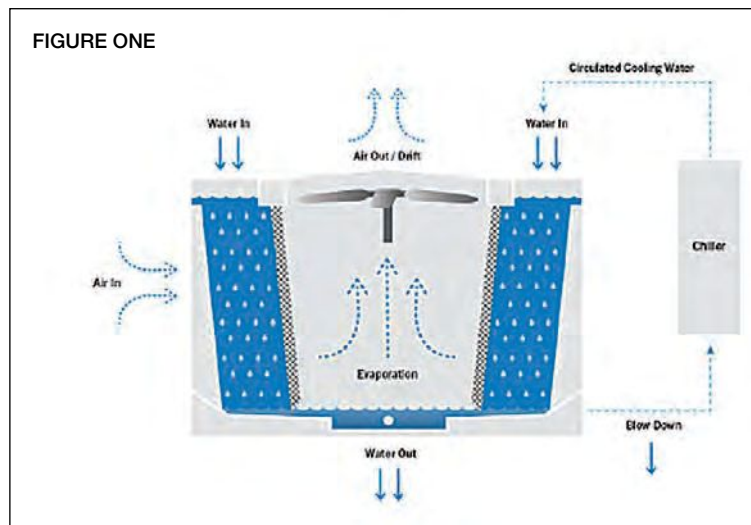
Drift, leaks and overflow.

While evaporation is considered a necessary and acceptable cause of water loss, other means of water loss must be carefully controlled.

Drift is the small quantity of water in the form of mist or water droplets that is blown off the cooling tower with little or no beneficial cooling effect. Equipment manufacturers address this by including drift eliminators, which control drift loss between 0.05-0.2 % of the water flow rate through the cooling tower. For a 500 nominal ton application with 1500 gpm flow, drift loss could be up to 3 gpm, which is typical for crossflow units and represents around 1% of the total water usage.

Leaks or overflow should not regularly occur in a properly operated and maintained cooling tower. Overflow alarms should be installed at the overflow drain, as is typically required by plumbing and building codes, in order to quickly correct any leak or overflow issues.

Blowdown. This leaves one remaining cause of water loss. Blowdown, also known as bleed, is the water that is bled from the system to keep the concentration of dissolved solids in the circulating cooling water within acceptable limits. As water evaporates, the water escapes but most of the other molecules are left behind. This process elevates the concentration of total dissolved solids (TDS) remaining in the system water, including calcium, magnesium, chloride, and silica. High concentrations can cause scale to form or lead to corrosion, resulting



in system inefficiencies, failures and maintenance headaches. The concentration of suspended solids from airborne particulates and other sources also increases, facilitating biological fouling and risking bacterial growth.

Simply put, the concentration of TDS and suspended solids is controlled by the removal of blow-down water. To maintain the optimal volume of water in the system, the total volume of water that is lost through this blowdown and through evaporation is replaced by “make-up water” (assuming no loss from drift, leaks, and overflow).

Maximizing Cycles of Concentration

A fundamental measure of cooling tower efficiency is cycles of concentration, also known as concentration ratio. Cycles of concentration (COC) is defined as the ratio of the dissolved solids (conductivity) in the tower water to the dissolved solids (conductivity) in the makeup. This is easily and commonly determined by taking the specific conductance of the cooling water and dividing it by the conductance of the makeup. The calculation can also be done using minerals that are not affected by the chemical treatment regime, such as chloride or silica.

An alternate, equally accurate method, of calculating COC is to take the make-up water volume and divide it by the bleed volume. This is easily done if the tower is equipped with water meters on the make-up and bleed lines, a practice that is highly recommended.

The better the quality of the make-up water – in other words, the lower the TDS, suspended solids, and corrosiveness – the higher the COC that can be achieved and less blowdown is required to maintain the desired COC to keep the system water quality within acceptable limits. Below, we look at various methods for improving the

quality of the make-up water.

TDS, and specifically water hardness, is by far the most significant factor affecting strategies to conserve water by increasing the COC. Increasing COC is much easier to implement in locations where water is naturally soft, such as portions of the Northeast, Southeast, and Northwest of the United States.

In LEED version 4.0, achieving at least 10 COC earns 2-4 credits, depending on whether the system is for new construction, an existing building, or a data center. Water reduction programs achieving less than 10 COC will earn only 1-2 credits (unless at least 20% of the make-up water is recycled non-potable water, in which case 2-4 credits can be earned).

LEED version 4.1 is somewhat different. It removes the 10 COC threshold and instead awards credits based upon exceeding COC by a percentage. The percentage compares the COC before and after measures are taken to improve the quality of the make-up water. For BD+C and core and shell projects, exceeding the baseline COC by 25% earns 2 credits, and for core and shell an additional point can be gained if the baseline COC is exceeded by 30%.

Non-Potable Water as an Alternative Source

Where available, non-potable water sources can be a great way to conserve potable water, and a path to earning 2 LEED credits. Let's look at four common categories of non-potable water: HVAC condensate, rainwater and stormwater, recycled municipal water, and gray water.

HVAC Condensate. Especially in the Southeastern U.S., high humidity and high cooling loads during most of the year affords a high potential for condensate capture. In Washington, D.C., for example, the condensate

capture could be as much as 10 gal/cfm of OA each year and in Miami as much as 31gal/cfm of OA each year, according to a 2021 ASHRAE Journal article.

HVAC condensate is an ideal source of make-up water for cooling towers for two reasons. First, the timing of the generation of condensate from air conditioning systems aligns well with the timing of need for make-up water for the cooling towers. This alignment means that a storage tank may not be necessary. Second, condensate water is pure with a very low dissolved mineral content. However, a potential downside of HVAC condensate is that it sometimes contains heavy metals, such as copper or lead, which may require treatment prior to use as make-up water.

Rainwater. Rainwater and stormwater are commonly harvested from roofs and hard surfaces, such as roadbeds or parking lots. Regulations vary by state on the use of such water. This map provides an initial assessment of the feasibility of implementing rainwater and stormwater capture. A 2012 study published by the University of Tennessee concluded that a high number of COC can be achieved with rainwater because dissolved solids are significantly lower than in tap water.

However, rainwater pH frequently is around or below 6 and therefore needs to be mitigated before use in a cooling tower to minimize the risk of corrosion and contamination. Also, control of microbiological growth must be included in any water treatment plan where harvested rainwater is being used. The level of treatment required for harvested rainwater depends on the source. Two common issues are bird droppings if the rain is harvested from a roof and oil if harvested from roadbeds and parking lots.

Recycled Municipal Water.

Local municipalities are increasingly developing the capability to reclaim and sell treated wastewater (at a significantly lower price than potable water) rather than discharging it into a lake or river. “Purple pipe,” along with appropriate signage, is used to distinguish such distribution systems from potable water lines.

This water is often good quality, although the concentration of minerals is usually higher than potable water. An advantage is that the increased silica, alkalinity, hardness, and phosphate content in reclaimed water are often less corrosive than tap water. When

Product Spotlight

using recycled municipal water, water quality management teams need to evaluate how corrosion inhibitors from the municipal process may impact water treatment strategies for cooling tower make-up water.

Gray Water. Unfortunately, typical commercial sources of gray water – e.g., urinals and laundry – are not appropriate for use as a direct non-potable water source without significant further treatment. Soaps found in laundry can be problematic because they act as a food source for microbiological growth.

Addressing water quality challenges

Depending on the quality of the water available, and based upon testing and recommendations of water treatment professionals, the strategy for conserving water may require the implementation of one or more mitigation methods. These methods divide into two basic categories: (a) improving the water with chemical treatment and filtration, and (b) protecting the system with materials of construction that offer high protection from corrosion.

Dissolved Minerals. Water with high mineral content can be particularly challenging because high levels of calcium, magnesium, alkalinity, and silica increase the risk of scale on heat transfer surfaces, which can rapidly degrade system performance. On the other hand, high levels of chlorides and sulfates increase the risk of corrosion on various metals used in cooling water systems, which could lead to increase maintenance costs and reduced asset life. Limiting dissolved solids is critical to achieving increases in the number of cycles of concentration. Three mitigation methods are commonly used:

Chemical treatment. Scale inhibitor chemicals cause a process called crystal modification to occur, which softens the hard edges of the crystalline precipitate into rounder material that stays in solution longer and is less likely to form scale. Chemical treatments also include dispersant polymers that coalesce and agglomerate these softer particles, and by

hydrophilic and hydrophobic forces make these particles less likely to bond to the heat transfer surfaces. These chemical treatments work, but they have limits based on modern chemistry, and are often insufficient to address water with high mineral content.

Mechanical Pretreatment.

Most facilities need to consider mechanical pretreatment, either water softener systems or partial reverse osmosis systems or a combination of the two. Water softeners use an ion exchange resin, which collects calcium and magnesium, along with a brine tank, which uses salt as a regenerant. These systems are relatively simple and have a low total cost of ownership, but they only remove calcium and magnesium and not other dissolved solids like chlorides; and they do not reduce alkalinity. Water softeners can increase cycles of concentration from approximately 2 to 4, but rarely allow for the large leaps necessary to reach 10 COC.

Partial reverse osmosis (RO) is more effective. Water is pushed through a membrane, removing 95-98% of all minerals. Normally RO is used to produce pure water, but that would be too corrosive for cooling tower applications. Therefore partial RO is used, which blends the RO water with municipal make-up water. For water with very high mineral content, the most cost-effective design is to use a water softener to remove the hardness minerals prior to the RO process.

Suspended Solids. The concentration of suspended solids from various water sources and from airborne particulates collecting on the cooling tower facilitates biological fouling and risks dangerous bacterial growth. For this application, cyclonic filtration is more effective and easier to maintain than sand filtration.

The most cost-effective solution is to design and install a side stream filtration system with basin sweeper piping. The system should be factory assembled and delivered with the new cool-

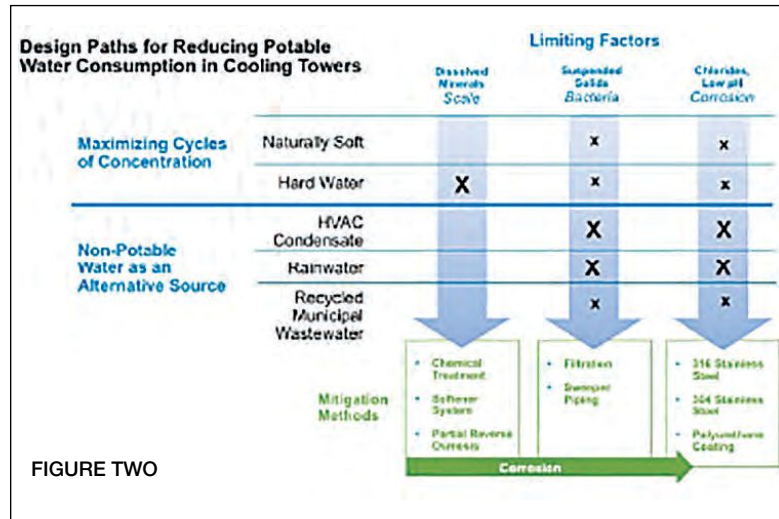


FIGURE TWO

ing tower (aftermarket systems require removing the fill pack which increases the risk of damage to the fill).

Corrosion. Water conservation strategies often involve elevated corrosiveness of the system water, especially when using partial RO or high purity non-potable water such as HVAC condensate and rainwater.

Alternative Materials of Construction.

Another mitigation strategy is to select a material of construction for the cooling tower that offers some protection from corrosion, such as stainless steel. For the highest level of corrosion protection, polyurethane basin

coatings can be applied. The TriArmor® Corrosion Protection System from Baltimore Aircoil Company offers a factory applied polyurethane coating.

Multiple Design Paths

Owners and operators that address scale, bacteria, and corrosion will maintain peak system efficiency and extend the life of the evaporative cooling equipment. The table in Figure Two summarizes design considerations to meet these objectives:

These various design paths afford many options for earning LEED points in existing buildings and new construction. By reducing the consumption of energy and potable water, well-designed and well-maintained cooling tower systems conserve scarce natural resources and save money.

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Industry News

Continued from Page 12

and

• Ensuring contractors are prepared to take advantage of billions in grants, incentives and rebate funds available in the marketplace beginning in late 2023.

As the partnership evolves, the associations will explore ways to mutually enhance participation for their respective membership bases' involvement in talent and training programs.

For more information, visit www.hardinet.org or www.egia.org.

New Products

Brass Knuckle Grasshopper



Get the jump on eye safety with the versatile protection and comfort of **Brass Knuckle Grasshopper** (BKDST-1010N). Grasshopper combines a host of superior comfort features with a wall of protection against dust and dirt – and that ultimate compliance-killer, fog. A soft EVA foam dust filter with built-in air channels fills the gap between the glasses and the face, keeping dust out. These goggles now also quickly transform, as the dust gasket is removable to allow for conversion into standard protective eyewear, enabling them to jump from job to job with ease.

In addition to a clear lens, for further versatility, Grasshopper is also available in a smoke lens for normal outdoor conditions (18% of light passes through), while indoor/outdoor clear mirror lenses provide all-around tint for protection from the glare of bright artificial lighting and sunlight (50% of light passes through). Ideal for workers who change environments throughout the day, a mirror finish allows optical clarity indoors and reduces glare outdoors.

For extra safety, Grasshopper is fully dielectric with no metal anywhere in its construction.

Outfitted with proprietary Brass Knuckle BK-Anti-FOG coating, this isn't your typical spray-on film. BK-Anti-FOG is bonded directly to the lens and tested under the most stringent anti-fog standard in the world, the European EN 166/168 standard. BK-Anti-FOG's properties exceed the minimum set forth by that standard fifteen times over. In addition to excellent anti-fog performance, these glasses also offer abrasion, chemical, and UV resistance that meet demanding industry test requirements (ANSI Z87.1+, EN166K, EN166N, EN166UV).

The European-inspired, sporty design includes bend-but-don't-break, super-flex TPR temples that adapt to any facial profile without distorting optics, while also providing hypoallergenic, non-slip comfort. The soft foam dust filter gasket effectively keeps dust out without feeling uncom-

fortable to the wearer. Molded nosepieces add to the all-day wearability.

More information: www.brassknuckleprotection.com/.



Greenheck eCAPS

Greenheck's eCAPS Bridge to Revit® plug-in provides access to the most complete catalog of HVAC product content in Greenheck's eCAPS® online product selection program and makes it easy to select and schedule HVAC equipment without leaving the Revit® environment. The plug-in enables specifiers to make model or performance-based selections and seamlessly insert Level of Development (LOD) 200 and 300 content directly into Revit® projects. The eCAPS® Bridge to Revit® plug-in also saves users time by automating the schedule creation process. Based on eCAPS® schedules and LOD 300 content that includes electrical and performance information, multiple product schedules can be created in a single click. LOD 300 content can also be easily reselected, giving users the power to modify the original inputs for easy performance updates in corresponding schedules. A new parameter management feature allows users to map user parameters to Greenheck parameters in LOD 300 content for easy data transfer and add user parameters to all Greenheck content. Many product types including fans, louvers, dedicated outdoor air units, and preconditioners along with hundreds of Revit® families are available with more being added with each release.

More information: www.greenheck.com/resources/software.



Mueller Steam Specialty Series 90



Mueller Steam Specialty, a Watts brand, has introduced the Series 90 butterfly valve to enhance its commercial butterfly valve package. The Series 90 is designed for commercial and industrial

applications – working with pipes from 2" to 40" and meeting high-performance specifications especially for data centers, hospitals, and educational institutions.

The Series 90 high-performance butterfly valves are ideal for water supply applications in hydronic cooling and fire protection systems. Like the Series 88, the Series 90 can be used to control the flow of liquids, gases, and slurries. In addition, the Series 90:

- complies with API 609 and MSS-SP-68 standards
- is bubble-tight at 290 psi differential, enabling it to work with larger pipes up to 40" in diameter
- boasts a double offset RPTFE seat designed for 500° F and a carbon steel body, also with a stainless-steel stem and disc. All sizes for Series 90 are rated for Class 150.

"With the Series 88 and the new Series 90, we now offer a comprehensive butterfly valve portfolio for commercial application," said Jennifer Carlino, Watts Senior Product Manager. "When you're looking for optimal performance from a butterfly valve, Series 90 provides a high-performance solution that maximizes uptime and creates a 24/7 level of confidence and peace of mind you won't find with other valves."

More information: www.watts.com/butterflyvalves.



Shurtape Technologies Aluminum Foil Tape

Shurtape Technologies, a leading manufacturer and marketer of pressure-sensitive tapes, expanded its HVAC product portfolio with Shurtape® brand AF 099 UL 181A-P/B-FX Listed/Printed Aluminum Foil Tape. Leveraging the same technology as the brand's trusted AF 100 UL 181A-P/B-FX Listed Foil Tape, AF 099 provides another durable, high-performing tape solution for busy HVAC contractors around the country.

AF 099 is an aluminum foil HVAC tape that is ideal for joining and sealing joints, connections and seams on rigid fiberglass ductboard and flexible air duct. It can also be used in place of mechanical fasteners on rigid ductboard. UL 181A-P/B-FX Listed and printed, AF 099 delivers full system closure – a system free of air leaks – by forming airtight bonds on joints and seams in temperatures ranging from -20 F to 260 F and in humid conditions.

Other applications for Shurtape's AF 099 foil HVAC tape include repairing metal or sheet metal and temporary fixes for outdoor electrical boxes. In addition,



it can be used for furnace installation/replacement, sheet metal ventilation fan exhaust ductwork, and dryer vent or bath fan installation jobs.

"Contractors have long trusted our AF 100 UL Listed foil tape for a range of HVAC applications, especially when it comes to delivering full system closure," said Lisa Zierfuss, product manager for HVAC tapes at Shurtape Technologies. "Contractors need to minimize air leakage in order to pass inspection, and want reliable, high-performing tape solutions that deliver permanent, airtight bonds. AF 099 is another tool in their toolbox to get the job done right the first time."

More information: www.Shurtape.com.



SPX Cooling Tech Marley WaterGard

SPX Cooling Tech, LLC, a full-line, full-service industry leader in the design and manufacture of evaporative cooling towers and air-cooled heat exchangers, has introduced the Marley® WaterGard™, a water usage optimizer and filtration system that helps reduce wastewater and overall water usage on packaged evaporative cooling products. WaterGard uses membrane technology to pre-condition cooling tower water and limits salt (i.e. chlorides, calcium carbonate) introduction into the tower, therefore reducing necessary blowdown (outgoing) water.

"Based on our models, WaterGard could help reduce water usage up to 59 percent for some locations, and reduce wastewater discharge up to 88 percent," explained SPX Cooling's Senior Global Product Manager, Marshal Zabel. "Some areas could see payback with this product in as little as three years, or even faster in locations with high-hardness source water."



The salt concentration of make-up (supply) water typically controls how much water needs to be blown down, or drained from the system, to limit corrosion and scale tendencies of the cooling water. Reducing this concentration with WaterGard allows safe cooling tower system operation at higher cycles of concentration (less blowdown).

WaterGard is available in North American markets and offered in a variety of sizes based on the capacity of the cooling towers. Features include an integral pump, bypass function and an optional carbon system for chlorine filtration. Plus, WaterGard is designed for easy maintenance and filter replacement at regular service intervals.

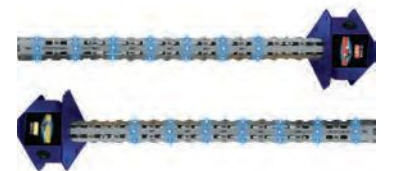
"WaterGard will help many operators use less water without sacrificing cooling equipment longevity, especially for those with a safe operating cycle of concentration around 3.5 or lower before WaterGard," added Zabel. "This product will offer the best results in areas with especially hard water, like the Southwest and in many Midwestern states."

Customers who utilize WaterGard for water savings should still employ the appropriate water treatment, and implement chlorine removal pre-treatment to protect the membrane filters.

More information: www.spxcooling.com.



Nu-Calgon The Scorpion



Nu-Calgon has added two new UVC-LED disinfecting systems to its Indoor Air Quality (IAQ) line of products. The Scorpion™ LX15 and Scorpion™ HX15 focus on surface disinfection on the HVAC evaporator coil and surrounding surfaces, using UVC-LED lights to kill mold, bacteria, and viruses in a matter of minutes.

The Scorpion's LED lights have 30,000 hours of run time, lasting five times longer compared to standard mercury UV bulbs when using the integrated air-flow sensor. In addition to the robust shatterproof LED design, the Scorpion offers dual install options using either the provided hardware or the integrated magnet for quick and easy installation.

More information: www.nucalgon.com.

Contractor Information

PHCC Releases First Quarter 2023 Contractor Confidence Index Report

Survey cites cautious optimism, but challenges still ahead.

Plumbing-heating-cooling contractors are feeling cautiously optimistic, according to a new report from the Plumbing-Heating-Cooling Contractors – National Association. The PHCC Business Intelligence Department just released its newly developed Contractor Confidence Index (CCI). Sponsored by PHCC Strategic Partner Bradford White, the PHCC CCI is based on a quarterly survey of PHCC members designed to take the pulse of the plumbing, heating, and cooling market.

The PHCC First Quarter 2023 CCI summary report revealed a CCI of 52.2, meaning contractors believe industry conditions are better than the previous six months, but are trending lower because of ongoing challenges. The first quarter CCI dropped from 56.0 in the Fourth Quarter of 2022, with an increasing number of respondents citing economic uncertainty and fear of a coming recession.

Any rating over 50 indicates a higher share of PHCC contractors reporting industry conditions are better than they were in the previous quarter, while any rating under 50 indicates a higher share of respondents reporting conditions are worse than they were in the previous quarter.

Plumbing contractors reported a lower future confidence index of 42.2 percent, versus 48.9 percent in the fourth quarter 2022, indicating that contractors who own plumbing businesses believe industry conditions were worse than the previous six months. HVAC contractors reported a higher future confidence index of 56 percent, versus 60.6 percent in the fourth quarter, suggesting industry conditions still feel better than the previous six months, though sentiment is trending lower.

The top contractor challenges reported were:

- operating short-staffed;
- customers holding off on projects;

- low call volumes;
- too much work;
- and new construction slowdown.

While roughly 70 percent of PHCC Contractor respondents anticipated normal to better sales in the future, 30 percent of respondents are not operating with a full staff, employees, and technicians. Double the number of respondents reported that customers are holding off on projects and replacements due to economic concerns – a significant increase when compared to fourth quarter results. 72 percent cited rising costs, and half of the respondents noted delays in shipping materials. The results were flat at 25 percent for those who indicated concerns about lower construction starts when compared to the last quarter.

Looking ahead, 73 percent of PHCC respondents are anticipating increased cost of doing business (parts, materials, labor), and most of those respondents are worried about an impending recession, as well as continued challenges finding qualified employees and technicians.

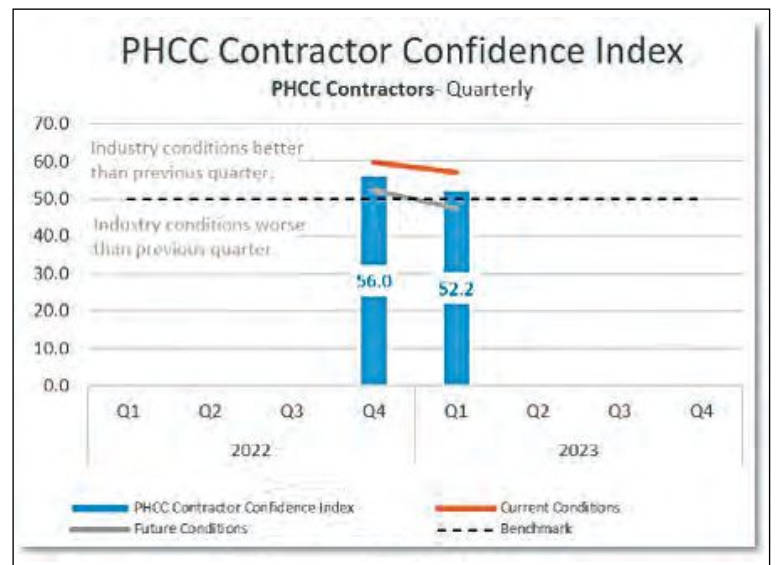
The top three concerns for contractors over the next six months include the cost of health insurance, fear of recession, and increased (additional) insurance costs. Additional concerns were increased regulations, decreased construction starts, and cash flow.

“We are very pleased to unveil this first quarter 2023 Contractor Confidence Index that will help us determine the current sentiment of PHCC members,” said PHCC-National Association President Dave Frame. “With access to this valuable information, our members will be able to track challenges and trends that affect their business, as well as maximize any business opportunities that are identified. And from an organization perspective, PHCC will be well-positioned to identify and develop programs and

services that will meet our members’ needs.”


The PHCC Business Intelligence Department works to favorably position PHCC members and affiliates to achieve the highest level of market awareness, professionalism, leadership, and business profitability in the emerging and ever-changing built environment. Relevant resources are updated on a regular basis on the new PHCC Business Intelligence website: www.phccweb.org/business-intelligence.

Disclaimer: The PHCC Contractor Confidence Index (CCI) is based on a quarterly survey of PHCC members designed to take the pulse of the plumbing heating and cooling market. The survey asks respondents to rate market conditions for the present time and for the next six months. Survey results and the PHCC CCI




were developed as a general sense of contractor sentiment and should not be used as a guaranteed indication of future performance

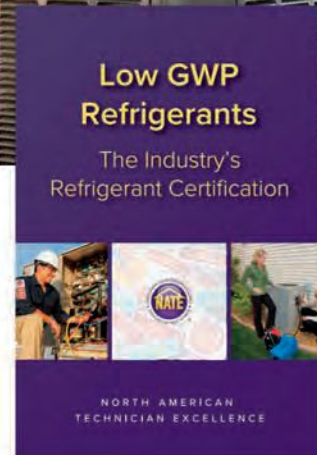
of economic and industry performance. Many PHCC Contractors provide both plumbing and HVAC installation and service.



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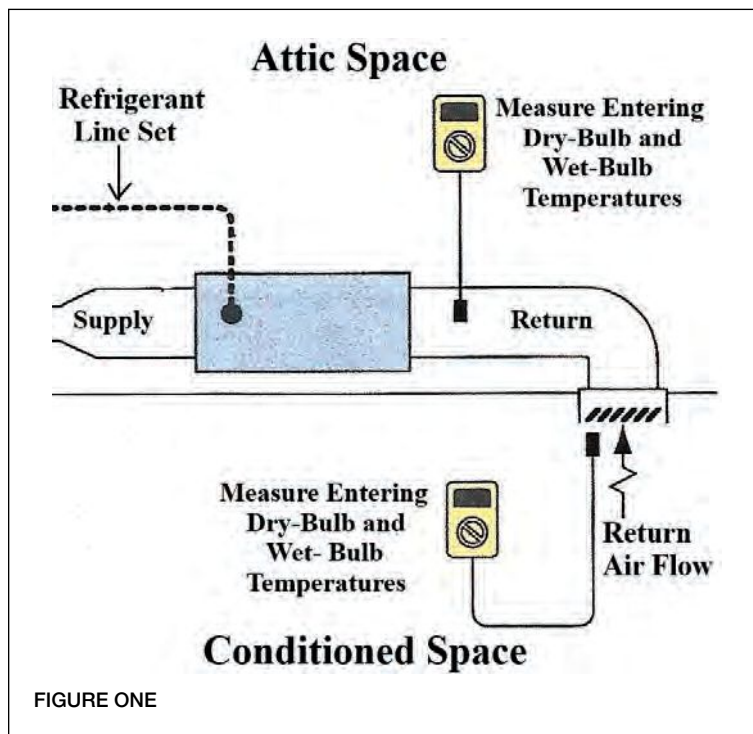
Growing Green Technicians Part 163: Dry Bulb/Wet Bulb Testing and Duct Systems

By Jim Johnson
Contributing Editor

In the previous segment in this series, our discussion centered around some of the simple temperature tests technicians can perform on a refrigeration system discharge line, along with pressure checks that can be accomplished in the process of a spring preventive maintenance check on a comfort cooling system.

Our focus in this segment is the idea that from a technician's perspective, the sealed system is not the only (or even always the very first consideration) when evaluating the performance of HVACR equipment while performing preventive maintenance. A main objective is to always prevent overcharging equipment that, in the event that it doesn't seem to be cooling enough, adding refrigerant is not even on our radar until other factors that can affect system performance are considered. From a perspective of taking a green approach, this means that we always keep two fundamental ideas in mind:

1. The refrigeration system can only perform as designed when it works in proper balance with the air flow systems of the equipment.
2. If there is an issue with the integrity of the building envelope,



the HVACR equipment cannot achieve the desired comfort level in the building.

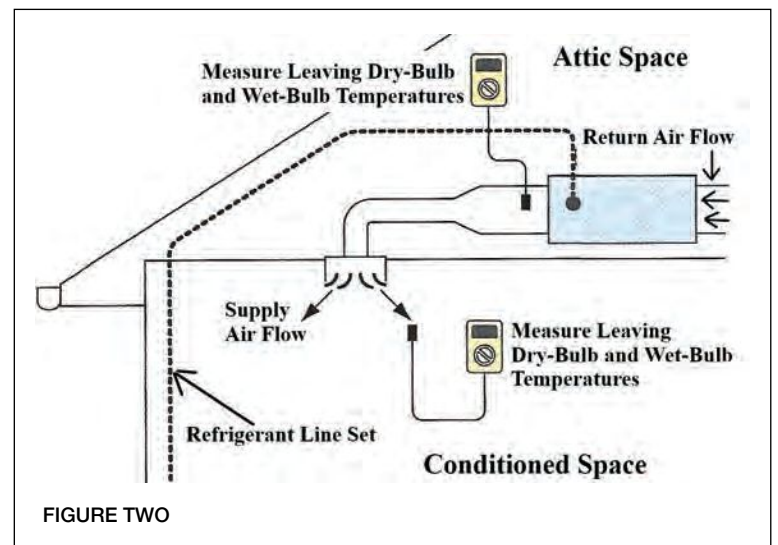
A good approach to performing a maintenance check begins with checking two temperatures (dry bulb and wet bulb) as we're showing in **Figure One**.

In our example, we're showing a split system with an attic air handler, and our evaluation begins with using an accurate digital instrument to measure the wet and dry bulb temperature of the air

entering at the return air grille, and then repeating the test at a location close to the air handler.

With these temperatures recorded, the next set of temperature measurements to perform will be in the attic space, at the exit of the air handler and at the air flow at the supply register discharge. (See **Figure Two**)

With the temperature measurements accomplished at all four locations and compared, we can first consider fundamental factors



relative to our dry bulb readings. A significant change in temperature between the measurements taken at the return grille and the point of entry at the air handler, or between the exit point of the air handler and the supply register, indicates duct leakage, insufficient insulation of the ductwork, or possibly a combination of both of those problems.

To arrive at a more specific diagnosis of the situation established by the different dry bulb readings, our wet bulb temperature readings come into play. Using the dry and wet bulb temperatures along with a psychrometric chart, we can determine the specific humidity of the air entering the return grille,

the humidity at the point entering the air handler, and the humidity of the air leaving the air handler and leaving the supply register. A change in humidity is an indicator of ductwork leakage.

Getting back to our dry bulb readings, we'll consider another indicator of a possible equipment problem not related to the refrigeration system or its charge. A temperature split check can be accomplished with the dry bulb measurements we've taken at the entry and leaving points of the air handler. If the temperature drop through the air handler is excessive according to manufacturer's specs, it could be an indicator of restricted air flow through the indoor coil.

Troubleshooting

An Ice Machine That's Not Delivering Proper Cubes

By Jim Johnson
Contributing Editor

In this month's troubleshooting problem, the equipment that needs servicing is an ice machine, and the information provided to the dispatcher from the customer is that the unit was working OK late in the evening on the previous day, but when they began preparations for lunch service around 10 a.m. today, they discovered only a small number of cubes in the storage bin, and those were smaller than normal, and melting.

When you arrive, you note that this unit, which employs a water-cooled condenser, is operating, and you confirm that the water supply systems for both the condenser and product production are OK. You also note that the current draw of the equipment is lower than noted on the equip-

ment tag.

As your next step, you accomplish a visual assessment of the refrigeration system (See **Figure One**) and note that there is no frost on any of the system components such as the drier, receiver, strainer, or metering device, which prompts you to connect your gauges, which show the following:

1. High side pressure lower than normal.
2. Low side pressure higher than normal.

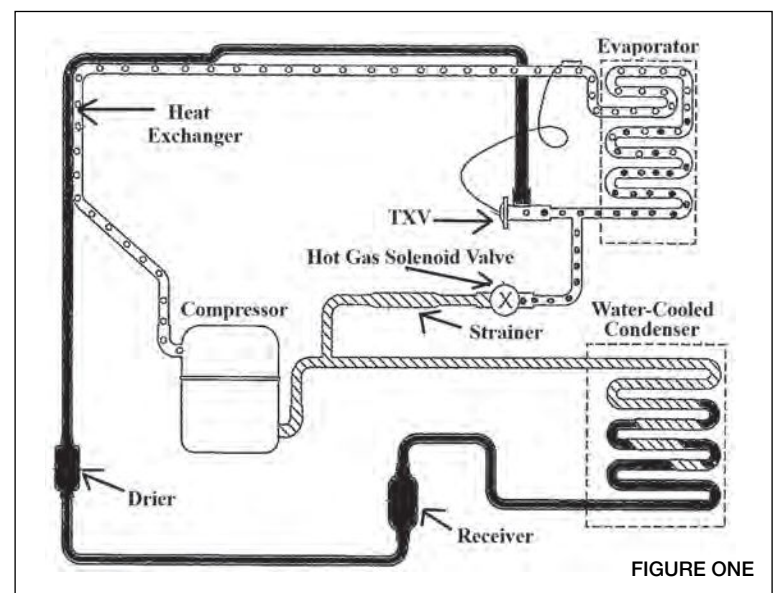
Your troubleshooting question: *What is the next step you need to take in servicing this equipment?*

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

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

The next step we need to take in servicing this equipment is to set the differential on the low-pressure switch to 20 PSI. At 5 PSI, the differential is so low that the switch reacts to the normal slight pressure rise that occurs shortly after a compressor cycles off, causing the switch to close and again make the circuit to the compressor.

The winner of last month's Troubleshooting is:
David Tenorio



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(Four-Night Class) Instructor: John Dalton

Wed., May 3 – Part 1
 Thurs., May 4 – Part 2
 Wed., May 24 – Part 3
 Thurs., May 25 – Part 4

JUNE

Air Distribution Module

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

Wed., June 21 – Part 1
 Thurs., June 22 – Part 2
 Wed., June 28 – Part 3
 Thurs., June 29 – Part 4

JULY

System Performance Module

(Four-Night Class Cont. to August) Instructors: Mike Griffin / John Dalton

Wed., July 26 – Part 1
 Thurs., July 27 – Part 2

AUGUST

System Performance Module

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

Wed., Aug. 2 – Part 3
 Thurs., Aug. 3 – Part 4

SEPTEMBER

NATE CORE & Gas Heating Training (Webinar)

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

Wed., Sept. 6 – Part 1
 Thurs., Sept. 7 – Part 2
 Wed., Sept. 13 – Part 3
 Thurs., Sept. 14 – Part 4

OCTOBER

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

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

Wed., Oct. 4 – Part 1
 Thurs., Oct. 5 – Part 2
 Wed., Oct. 25 – Part 3
 Thurs., Oct. 26 – Part 4

Sat., Oct. 28 - NATE Exam, 7:30 a.m.

SOUTHERN CALIFORNIA EDISON, IRWINDALE

MAY

NATE CORE & Gas Heating Training

(Four-Night Class) Instructor: Mike Griffin

Wed., May 10 – Part 1
 Thurs., May 11 – Part 2
 Wed., May 17 – Part 3
 Thurs., May 18 – Part 4

JUNE

NATE AC/HP Refrigeration & Air Distribution Training

(Four-Night Class) Instructor: John Dalton

Wed., May 31 – Part 1
 Thurs., June 1 – Part 2
 Wed., June 7 – Part 3
 Thurs., June 8 – Part 4

Sat., June 10 - NATE Exam, 7:30 a.m.

SEPTEMBER

System Diagnostics Module

(Four-Night Class) Instructor: John Dalton

Wed., Sept. 20 – Part 1
 Thurs., Sept. 21 – Part 2
 Wed., Sept. 27 – Part 3
 Thurs., Sept. 28 – Part 4

OCTOBER

Non-Res ATE Acceptance

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

Wed., Oct. 11 – Part 1
 Thurs., Oct. 12 – Part 2

Non-Res ATT Acceptance

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

Wed., Oct. 18 – Part 1
 Thurs., Oct. 19 – Part 2

NOVEMBER

System Performance Module

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

Wed., Nov. 1 – Part 1
 Thurs., Nov. 2 – Part 2
 Wed., Nov. 8 – Part 3
 Thurs., Nov. 9 – Part 4

SOUTHERN CALIFORNIA EDISON, TULARE

MAY

System Performance Module

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

Wed., May 10 – Part 1
 Thurs., May 11 – Part 2
 Wed., May 17 – Part 3
 Thurs., May 18 – Part 4

JUNE

AC/HP Refrigeration Module

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

Tues., June 6 – Part 1
 Wed., June 7 – Part 2
 Tues., June 13 – Part 3
 Wed., June 14 – Part 4

SEPTEMBER

System Diagnostics Module

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

Wed., Sept. 20 – Part 1
 Thurs., Sept. 21 – Part 2
 Wed., Sept. 27 – Part 3
 Thurs., Sept. 28 – Part 4

OCTOBER

NATE CORE & Gas Heating Training

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

Wed., Oct. 11 – Part 1
 Thurs., Oct. 12 – Part 2
 Wed., Oct. 18 – Part 3
 Thurs., Oct. 19 – Part 4

NOVEMBER

NATE AC/HP Refrigeration & Air Distribution Training

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

Wed., Nov. 1 – Part 1
 Thurs., Nov. 2 – Part 2
 Wed., Nov. 15 – Part 3
 Thurs., Nov. 16 – Part 4

Sat., Nov. 18 - NATE Exam, 7:30 a.m.

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

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

CLASS SCHEDULE

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

SAN DIEGO GAS & ELECTRIC

MAY

System Diagnostics Module (Webinar)

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

Mon., May 8 – Part 1

Thurs., May 9 – Part 2

Mon., May 15 – Part 3

Thurs., May 16 – Part 4

JUNE

Air Distribution Module (Webinar)

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

Mon., June 5 – Part 1

Tues., June 6 – Part 2

Mon., June 12 – Part 3

Tues., June 13 – Part 4

System Performance Module (Webinar)

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

Mon., June 19 – Part 1

Tues., June 20 – Part 2

Mon., June 26 – Part 3

Tues., June 27 – Part 4

JULY

Non-Res ATE Training (Webinar)

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

Wed., July 5 – Part 1

Thurs., July 6 – Part 2

Non-Res MATT Training (Webinar)

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

Wed., July 12 – Part 1

Thurs., July 13 – Part 2

Chiller Module (Webinar)

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

Wed., July 19 – Part 1

Thurs., July 20 – Part 2

AUGUST

Commercial Cooling Tower Module (Webinar)

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

Wed., Aug. 9 – Part 1

Thurs., Aug. 10 – Part 2

Boiler Module (Webinar)

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

Wed., Aug. 16 – Part 1

Thurs., Aug. 17 – Part 2

Commercial Refrigeration Module (Webinar)

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

Wed., Aug. 23 – Part 1

Thurs., Aug. 24 – Part 2

SEPTEMBER

Electrical Module (Webinar)

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

Mon., Sept. 11 – Part 1

Tues., Sept. 12 – Part 2

Mon., Sept. 18 – Part 3

Tues., Sept. 19 – Part 4

OCTOBER

System Diagnostics Module (Webinar)

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

Mon., Oct. 16 – Part 1

Tues., Oct. 17 – Part 2

Mon., Oct. 23 – Part 3

Tues., Oct. 24 – Part 4

NOVEMBER

NATE Core & Gas Heating Training (Webinar)

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

Mon., Nov. 13 – Part 1

Tues., Nov. 14 – Part 2

Mon., Nov. 20 – Part 3

Tues., Nov. 21 – Part 4

DECEMBER

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

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

Mon., Dec. 4 – Part 1

Tues., Dec. 5 – Part 2

Mon., Dec. 11 – Part 3

Tues., Dec. 12 – Part 4

PACIFIC GAS AND ELECTRIC COMPANY, STOCKTON

MAY

Electrical Module (Webinar)

(Four-Night Class) Instructor: Mitch Bailey

Wed., May 24 – Part 1

Thurs., May 25 – Part 2

Wed., May 31 – Part 3

Thurs., June 1 – Part 4

JUNE

System Performance Module (Webinar)

(Four-Night Class) Instructor: Mitch Bailey

Wed., June 21 – Part 1

Thurs., June 22 – Part 2

Wed., June 28 – Part 3

Thurs., June 29 – Part 4

NEW: SPANISH Classes

MAYO

Nueva Contratación

NATE HVAC/R (En-Persona/Seminario Virtual)

(Clase-Cuatro Noches) Instructor: Rene Aguinada

Miércoles, Mayo 10 – 1a Parte

Jueves, Mayo 11 – 2a Parte

Miércoles, Mayo 17 – 3a Parte

Jueves, Mayo 18 – 4a Parte

JUNIO

Capacitación de Apoyo

NATE HVAC/R (Seminario Virtual)

(Clase-Cuatro Noches) Instructor: Rene Aguinada

Lunes, Junio 5 – 1a Parte

Martes, Junio 6 – 2a Parte

Lunes, Junio 12 – 3a Parte

Martes, Junio 13 – 4a Parte

SEPTEMBER

System Diagnostics Module (Webinar)

(Four-Night Class) Instructor: Mitch Bailey

Wed., Sept. 6 – Part 1

Thurs., Sept. 7 – Part 2

Wed., Sept. 13 – Part 3

Thurs., Sept. 14 – Part 4

OCTOBER/NOVEMBER

NATE Core & Gas Heating Training (Webinar)

(Four-Night Class) Instructor: Mitch Bailey

Wed., Oct. 25 – Part 1

Thurs., Oct. 26 – Part 2

Wed., Nov. 8 – Part 3

Thurs., Nov. 9 – Part 4

NOVEMBER

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

(Four-Night Class) Instructor: Mitch Bailey

Mon., Nov. 20 – Part 1

Tues., Nov. 21 – Part 2

Mon., Nov. 29 – Part 3

Tues., Nov. 30 – Part 4

Sat., Dec. 2 - NATE Exam, 7:30 a.m.

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 IOUs/CA COVID requirements.
 s format is subject to change
 org (Training)

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



Indoor People



ERIC DUERR

McElroy, the world's leading designer and manufacturer of thermoplastic fusion equipment, is pleased to announce the arrival of **Eric Duerr** as the company's new Purchasing Manager.

"Since its founding, McElroy has remained committed to providing our clients with the highest-quality products, and that level of service begins with the sourcing process," said McElroy President and CEO Chip McElroy. "Eric has a proven track record of success, and we are happy to have him come on board to lead our purchasing department."

A native Oklahoman, Duerr brings 15 years of procurement, sourcing, and inventory management experience, mainly in the oil and gas industry. He has developed and led the performance of numerous purchasing and sourcing teams in the United States, Canada, Egypt, and the United Kingdom.

Before arriving at McElroy, Duerr was the Western Hemisphere Strategic Sourcing Manager for TD Williamson in Tulsa. He holds a bachelor's degree in Economics from the University of Oklahoma and a master's degree in Business Administration from Oklahoma Christian University.

"Eric will be a valuable asset to our purchasing team, as we strive to continue exceeding the expectations of users of McElroy equipment," said McElroy Senior Operations Manager Philip Maud.

As Duerr transitions into his new role, he will be working closely with Maud, who will be moving into a new role to focus on McElroy's inventory, planning, and execution processes.

• • • • •

Oatey Co., a leading manufacturer in the plumbing industry since 1916, announced the promotion of **Dave Biron** to Vice President, Distribution and Specialty Manufacturing.

With more than 20 years of experience in manufacturing and distribution operations management, Biron joined Oatey Co. in 2014 as Plant Manager of Cherne Industries. Part of the Oatey family of

companies, Cherne is an industry-leading manufacturer of test plugs and testing equipment for residential, commercial, industrial and municipal piping systems. Biron was promoted to General Manager of Cherne in 2018, and in 2020 he led the company's move to a new state-of-the-art headquarters in Shakopee, Minn. In 2021, his role expanded to include responsibility for QuickDrain USA, a Denver-based Oatey company that manufactures premier curbless and curbed shower solutions for showers and wet areas.

Prior to joining Oatey Co., Biron spent time in operations management at Target, Cambria and National Flooring Equipment, Inc. He also served as an Officer in the U.S. Army for more than a decade.

In his new role as Vice President, Distribution and Specialty Manufacturing, Biron is accountable for the management of Oatey Co.'s domestic network of distribution centers, leveraging best-in-class operations practices to ensure Oatey continues to meet and exceed the needs of its customers across the country. He will also maintain responsibility for production and shipping operations at Cherne and QuickDrain.

"Dave is an exceptional operations leader with an aptitude for developing and growing effective teams while driving results for our company and our customers," said Scott Voisinet, Oatey's Senior Vice President of Supply Chain. "In his new role, I am confident Dave will provide the leadership we need to continue to optimize our distribution network and position our organization for continued growth."



DAVID BIRON

• • • • •

The Propane Education & Research Council (PERC) announces **Jim Bunsey** as its director of commercial business development.

In his new role, Bunsey will be responsible for PERC's commercial and power generation portfolios and will be the liaison to energy service companies (ESCOs), construction specifiers, and the commercial trades. He will also focus



JIM BUNSEY

on commercial opportunities that require larger fuel storage tanks and delivery by larger transport trucks.

"Jim is a great addition to the PERC team and brings extensive knowledge to this position thanks to his experience in the propane industry," said PERC president and CEO Tucker Perkins. "We look forward to all of the success Jim will bring to the commercial market program."

Bunsey was director of operations at Superior Energy Systems, where he oversaw all propane and natural gas liquid product design and development as well as in-field installations, including fuel terminals and over 600 propane autogas infrastructure installations. Before joining Superior, he owned Triad Mechanical, a company that designed and installed commercial and industrial HVAC and fire protection systems.

Bunsey is a member of the National Propane Gas Association's Technology, Standards and Safety Committee and the National Fire Protection Association's Technical Committee on Liquefied Petroleum Gases, also known as the NFPA 58 committee. He will work from his home office in Oberlin, Ohio.

"I'm excited and humbled to be a part of the PERC team," Bunsey said. "This is a great opportunity, and I'm ready to get started working with construction professionals to keep reinforcing propane's environmental benefits."

• • • • •

TESCO Controls, a United Flow Technologies (UFT) company, a systems integrators in the water/wastewater industry, named **Hamid Sarshar** president of the organization. Sarshar will lead the 50-year-old company into the next strategic phase of growth and innovation within the UFT platform. Sarshar joined UFT in October 2022 as executive vice president of operations focused on operational optimization efforts at TESCO.

"I am personally thrilled Hamid has accepted the position of president of TESCO Controls," said Matt Hart, CEO, UFT. "I am con-

fidant in his ability to immediately step into this leadership role at this important moment in TESCO's history. Hamid is an exceptional leader who is respected for driving a people first culture, improving operational performance, mentoring talent, and delivering exceptional consolidated growth while upholding the highest safety standards. "Hamid's extensive leadership background and industrial experience will accelerate the organizational and process improvements already underway, including expanding capacity to better serve our customers, creating efficiencies, and driving synergies between TESCO and the rest of the UFT organization, continued Hart."

Sarshar has 20-plus years of experience working for OEMs across multiple industries. Prior to joining UFT, Sarshar was vice president and general manager of Flowserve's \$550 million global isolation valve business for four years. At Flowserve, Sarshar, led more than 1,500 people and nine production locations worldwide, growing operating income by more than 24%, improving on-time delivery, and establishing AGILE product development for Flowserve's most strategic R&D projects.

Prior to Flowserve, Sarshar was a senior executive with General Electric Oil & Gas, last serving as executive director of offshore engineering, where he led a team of 200 subsea drilling system engineers in seven countries responsible for GE's \$800 million offshore business unit. Sarshar earned his bachelor and master's degrees in mechanical engineering degrees from the University of Washington and holds 13 patents.



HAMID SARSHAR

• • • • •

National Technical Institute (NTI), a state-approved trade school with campuses in Las Vegas, Phoenix, and Houston specializing in HVAC, plumbing, and electrical training, announces **Ryan Woodward** as the new CEO. Woodward is a partner in the business and previously served as CFO, making for an easy transition.

"Ryan has been vital to NTI's



RYAN WOODWARD

success and continued growth," said David Lee, partner and COO. "He understands the industries we serve and is dedicated to helping contractors hire qualified employees that they desperately need while providing a chance for students to find a new, fulfilling career through education. With his financial background and involvement in the Governor's Workforce Development Board and Vegas Chamber, we couldn't be in better hands, and I am personally confident that he will continue to lead the growth of NTI to a prosperous future."

In 2022, Woodward was appointed to the Governor's Workforce Development Board in Nevada where he oversees the distribution and use of federal and state dollars allocated to workforce entities that are using those funds to help people gain useful skills that lead to employment. Prior to this three-year appointment, he sat on the Governor's Community College Workforce Training and Programs Committee where he focused on creating educational opportunities to help meet the needs of existing trades and professions and plan for the future. Woodward is also on the board of directors at the Vegas Chamber of Commerce and co-chair of the Vegas Chamber Workforce Task Force.

For more than two decades, Woodward has held multiple roles in the financial world, gaining experience in all aspects of the industry. Prior to joining the team at NTI five years ago, Woodward was an executive-level manager in commercial and business banking working with companies that had up to \$350 million in revenue.

"NTI has allowed me to do what I have always desired – run a business that helps people grow and invest in their future," said Woodward. "As CEO, I will continue down this path of providing opportunities for people to find a new, fulfilling career."

• • • • •

Robertshaw Controls Company announces the recent appointment of **John Hewitt** as chief executive officer. Hewitt succeeds Mark Balcunas, who announced his

Indoor People

retirement from full-time service with Robertshaw, concluding a career with the company that began in 1979. Balcunas will continue to advise Robertshaw in key areas of the business going forward.

Mr. Hewitt has served in numerous senior leadership roles during his more than 25 years of experience in both public and privately owned industrial and technology businesses. Hewitt most recently

served as president of the Americas region for digital infrastructure provider Vertiv, a role he held beginning in 2017. At Vertiv, Hewitt was responsible for leading business development and operations of its \$2.3 billion Americas region with 11,000 employees across North, Central and South America.

Hewitt has a track record of consistently delivering strong growth and profitability while building world-class teams and high-performance cultures. Prior to joining Vertiv, Hewitt held a variety



JOHN HEWITT

of global management, strategy, business development and finan-

cial leadership roles within several technology companies, including Motorola, TE Connectivity and Aptiv in the US, EMEA, South America and Asia.

“Our customers will continue to be at the center of everything we do,” Hewitt said. “In the days ahead, they can count on Robertshaw to partner with them to solve their most critical challenges using our combined engineering, testing, manufacturing, supply chain and technical expertise that we have honed over more than 100 years.”

GOLD KEY Contest Winner

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



Megan Harris
Sunwest Air Conditioning, Inc.

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

Business Matters

Continued from Page 21

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Final Word:
Recently, you received a form in

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Please join us to see how IHACI Peer Groups can help you to

establish relationships with other like-minded contractors who share some of the same struggles and issues that you face every day in your business. Please contact me at lawrence@brodypennell.com to ask questions about how to join.

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

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