

# INDOOR COMFORT

APRIL 2020

THE VOICE OF THE INDUSTRY  
**NEWS**

www.indoorcomfortnews.com

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



## Editorial Focus

What's new? Find out here as ICN takes a look at the latest offerings in Indoor Air Quality, Zoning and Air Distribution Products.

Page 14



## Case Study

Texas school district keeps classrooms comfortable with help of Venstar Explorer thermostats.

Page 19



## Indoor People

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

Page 26

## Legal Lines

## Coronavirus/COVID-19 Mitigation for the HVAC Industries and its Customers

By Robert Fried and Jonathan Vick  
Atkinson, Andelson, Loya, Ruud & Romo

While the serious impact of the COVID-19 pandemic is broadly understood, the role of in-

dustry leaders and their counsel is to identify the functional planning measures inherent in their industries as action steps. The protocols necessary go beyond remote work, social distancing; testing and matters of personal protective hygiene. This article approaches this subject

in terms of the viewpoint of micro-protocols with a particular focus on the HVAC industries.

Human decision making in business environments needs better understanding of the science in so far as COVID-19 is an asymptomatic illness (without

symptoms) during the initial weeks of infection transmittal through breath droplets between persons and on surfaces before there are experienced indicia of illness in the person affected.

This is why cruise ships are the biological equivalents of bat hives

where the mutation arose. The same might be said of any closed environment where unfiltered recirculating room air can be a concentrated vehicle and associated surfaces for transmission.

Continued on Page 12

## CEC OKs First Community Solar Proposal Under '19 Energy Code

The California Energy Commission (CEC) recently approved Sacramento Municipal Utility District's (SMUD) Neighborhood SolarShares Program, a proposal for community solar under the 2019 Building Energy Efficiency Standards (Energy Code).

The Energy Code took effect Jan. 1, 2020 and requires a solar photovoltaic (PV) system on new single-family and low-rise residential homes. When adopted, the updated Energy Code included community solar as an alternative option to rooftop PV systems.

"Community solar was built into the Energy Code to provide

flexibility in satisfying the solar requirement," said Commissioner J. Andrew McAllister, who is the Energy Commission's lead on the Energy Code. "We expected that the marketplace and stakeholders would find solutions appropriate for their communities. SMUD has created a proposal to do that by offering builders 100 percent solar power at guaranteed savings to their customers. Other community solar proposals will look different. Openness to diverse cost-effective

Continued on Page 27

## IHACI, ACCA Join Forces in Opposition of AB 3316

**Editor's Note:** The Institute of Heating and Air Conditioning Industries, Inc. (IHACI) and the Air Conditioning Contractors of America (ACCA) have partnered to communicate their concerns to the California Air Resources Board (CARB) and Legislative leaders concerning the potential dangers in escalating the deadline dates (on a state-by-state basis) for the phasedown or phaseout of hydrofluorocarbon (HFC) refrigerants in stationary air conditioning systems beyond chillers, as the transition will

include flammable refrigerants. The well-being and safety of the public as well as those HVAC professionals responsible for the handling of flammable HFC's requires research, training, and forethought.

For the safety of all concerned, HVAC professionals are asked to contact their California state legislators communicating their concerns on potentially pre-mature decision making that could negatively impact public safety and the HVAC industry at-large.

The following is the joint letter sent to Assemblyman Richard Bloom,

who authored Assembly Bill 3316:

Dear Assemblyman Bloom:  
Thank you for your leadership in the California legislature. We appreciate your years of public service and look forward to building a stronger relationship with you.

As national and state associations representing professional heating, ventilation, air

Continued on Page 24



## Inside

### DEPARTMENTS

Industry News 4

Troubleshooting 21

Technical Training 23

Classifieds 30



**SAVE THE DATE!**  
**TUESDAY,**  
**NOVEMBER 10, 2020**

**IHACI's 41<sup>st</sup> Annual  
HVAC/R/SM  
Performance Contracting  
Trade Show**

Pasadena Convention Center  
Pasadena, CA

More info, visit [www.IHACI.org](http://www.IHACI.org)

PRST STD  
U.S. POSTAGE  
**PAID**  
LITTLE ROCK, AR  
PERMIT NO. 1884

**INDOOR COMFORT NEWS**  
454 W. Broadway  
Glendale, CA 91204  
CHANGE SERVICE REQUESTED

# HVAC PROS TRU



**Proven to Reduce Service and Maintenance Time Up to 100 Minutes Over Other Commercial HVAC Competitor Brands**

**Hear why HVAC pros trust Ruud Commercial solutions:**

**Recommendations from the field from HVAC Commercial Pros:**

Hear what the PROs from the MAIT (Manufacturers Association of Information Technology) "Equipment Competitive Time Study" had to say:

*"I Recommend the Renaissance units just because the quality of manufacturing, the ease and reliability you get when you use these units."*

View full video\*: <https://www.facebook.com/ruudproducts/videos/416668639040869/>



**Reliability Testimonials Ruud Dealers and Ruud Product Improvement Manager:**

Listen to other Ruud Pros had to say:

*"I have customers who ask me, why don't you offer this? Why don't you offer that? Ruud has a product for basically everything we do, a one-stop, full line of equipment."\**

View full video\*: <https://www.ruud.com/reliability/>



**Did you know Ferguson RQC HVAC Centers Provides Full Job Quote Service?**

We know you have many options to provide quotation services. We share the same common goal, to provide unrivaled access to quotation resources and services to meet your tight customer deadlines and exceed your expectations.

To test the competitive success of your Job Service Quote, contact our Ferguson Regional Quotation Center for plan and spec jobs: [Pomona0347.RQC@ferguson.com](mailto:Pomona0347.RQC@ferguson.com)

## ARIZONA

**GILBERT**  
(480) 824-4250

**GLENDAL**  
(480) 824-4250

**MESA**  
(480) 832-3438

**N PHOENIX**  
(602) 971-7506

**NE PHOENIX**  
(480) 308-8200

**S PHOENIX**  
(602) 438-8945

**W PHOENIX**  
(623) 474-7200

**PRESCOTT**  
(928) 759-0222

**NW TUCSON**  
(520) 670-1100

**SE TUCSON**  
(520) 290-9851

**YUMA**  
(928) 329-6420



Every detail of the product is meticulously evaluated from every angle. And then we take it a step further. That's 360°+1.



**PLUSONE®  
DIAGNOSTICS**



**NEW FEATURE**  
EXTERNAL LOCKABLE  
GAUGE PORTS



**NEW FEATURE**  
CONDENSER COIL  
PROTECTION



**NEW FEATURE**  
IMPROVED FOOTPRINT



**PLUSONE®  
SERVICESMART**  
QWIK-CHANGE  
FLEX-FIT RACK

**PLUSONE®  
HUMIDIDRY**

**PLUSONE®  
SERVICESMART**  
QWIK-CLEAN DRAIN PAN

**PLUSONE® SERVICESMART**  
QWIK-SLIDE BLOWER ASSEMBLY

## Renaissance Commercial HVAC Advantages

Introducing the PlusOne® ServiceSmart™ package that offers built-in features for quick troubleshooting and easy access.

12 different models designed for any business application. Choose from 7.5 to 12.5 Ton:

RGECZR048ACT122AAA  
RGEDZR120ACB152AAA  
RGEDZS090ADB152AAC  
RGECZR060AJT122AAA

RGEDZR120ACB222AAA  
RGEDZS120ACB152AAC  
RGEDZR090ACB152AAA  
RGEDZR120ADB152AAA

RGEDZS120ADB152AAC  
RGEDZR090ADB152AAA  
RGEDZS090ACB152AAC  
RGEDZS150ACB222AAC

## Ferguson HVAC / Ruud Commercial Support

Our Ruud Territory Managers know your marketplace and competitors. Registering as a Ferguson HVAC Dealer will give you exclusive access to the Ruud Pro Partner Program with a dedicated Commercial Support Team.

Contact your local Territory Manager to set-up your on-site meeting to learn more.

### CALIFORNIA

**ANAHEIM**  
(714) 520-0026

**AZUSA**  
(626) 969-9099

**BAKERSFIELD**  
(661) 335-7200

**CHATSWORTH**  
(818) 341-520

**EL CAJON**  
(619) 258-9382

**FRESNO**  
(559) 538-6124

**INDIO**  
(760) 775-7400

**MANTECA**  
(209) 239-6446

**NEWBURY PARK**  
(805) 376-3576

**PITTSBURG**  
(925) 778-1237

**N SACRAMENTO**  
(916) 924-8661

**S SACRAMENTO**  
(916) 210-7993

**SAN FERNANDO**  
(818) 924-8661

**SAN JOSE**  
(408) 271-1685



# Industry News



## CALIFORNIA



### CoolSys to Rebrand All Operating Businesses

**Brea, Calif.** – CoolSys announced it will be rebranding all of its operating businesses under the CoolSys name over the next 12 to 18 months. Its foundational brands, Source Refrigeration & HVAC (Source) and Service Refrigeration Company (SRC), have changed their names to CoolSys as the first step in a multi-phased brand transformation. Other CoolSys companies, including CRM, Legacy Air and Ron's Refrigeration, will gradually transition to one unified brand identity this year. Newly acquired companies, Tech Mechanical, BRR Refrigeration, Agape, ABC Refrigeration, Building Air Services, and RSI will take the CoolSys name within 18 months.

“Our rebranding represents a shared long-term vision for CoolSys – to improve the customer experience by providing a seamless, end-to-end solution for all HVACR, engineering, installation, service and maintenance, and energy optimization needs,” said Adam Coffey, CEO of CoolSys. “It also addresses the needs of our commercial customers who increasingly rely on national brands with nationwide capabilities. We are combining all of our business units under one CoolSys brand to strengthen our presence, convey a consistent message, and increase our power in the market.”

The company's rebranding of its operating units and subsidiaries has been part of its long-term vision that began when CoolSys first established its name over two years ago to bring together its growing family of businesses under one corporate umbrella. CoolSys has recently identified a growing demand among its customers to have access to a unified national brand, and a preference to consolidate their service providers to fewer, larger companies. Its customers span across national and regional grocery, retail, convenience store and restaurant chains, as well as telecom, healthcare, and educa-

tion.

“In any market where we operate, our goal is for the CoolSys name to signify the consistent level of service, skill, and expertise that our customers can rely on,” said Mike Ochoa, CoolSys executive vice president, sales and marketing. “As we undergo this rebranding process, we are communicating with our customers, vendors, and suppliers to ensure they are informed and fully on board with the changes that are coming.”

Over the course of this year, CoolSys will be unveiling a new website and new branding guidelines for its business units. All vehicles, building signage, uniforms, forms, and other materials will gradually be converted to the CoolSys brand. To acknowledge its heritage as a company formed from many different brands, CoolSys will honor all its current and future acquired brands in a “Heritage” section on its newly designed website.

• • • • •

### Navien Expands into East Coast

**Irvine, Calif.** – Navien Inc. will establish its first U.S. manufacturing and assembly operation in James City County, Va. The 300,000 square-foot facility will be used as a distribution center for the first two years and begin the transition process and preparation into manufacturing operation in 2022 with the first stage of manufacturing expected to begin in 2023.

“Navien's decision to locate its first U.S. manufacturing operation in James City County demonstrates the competitive advantage that Virginia offers to international companies looking to expand into new markets,” said Governor of Virginia, Ralph Northam. “This project is an important win for the Greater Williamsburg region and our Commonwealth, as Navien will bring a key facility back into productive use, create 180 high-quality jobs, and utilize the nearby Port of Virginia as its gateway to the world.”

Contingent upon regulatory permits and approvals, Navien's current plans are to expand the existing facility starting in 2023, which will triple the footprint to nearly 900,000 square feet by 2026.

“The close proximity of this property to the Port of Virginia and the flexibility to expand and



Navien's new manufacturing assembly operation in Virginia.

allow for Navien's continued investment over time helped us make this decision,” said Navien CEO Sangkyu Lee. “Establishing an East Coast facility will support Navien's growth and allow for faster delivery to primary eastern markets while balancing current shipments coming into California. We look forward to working with the Virginia Talent Accelerator Program as we grow this facility and its importance to Navien's overall leadership position in North America.”

Distribution of Navien products from the new Virginia facility is slated to begin this month.

• • • • •

### Synergy Hosts Service Forum

**Rancho Mirage, Calif.** – Synergy Solution Group hosted a Service Operations Forum on Jan. 26-29 in Rancho Mirage, Calif., at the Omni Rancho Las Palmas for 58 attendees from 32 companies. The two-and-a-half-day program kicked off with speaker Kristin Arnold and her program Building Teams.

“Kristin was great,” said Keith Reissfelder of Cox Engineering. “I have a lot of notes which will help implement an overdue team leader process within our company. I'm glad she was here at this forum.”

Day one continued on the theme of ‘People’ with members sharing in small groups how they're building relationships with their team, who the last person who left their company was and lessons they learned after, and specific examples of recognition they have given or have received. Lee Kawsy of MSD shared the Work Order of the Week award they created to recognize technicians who share the most detail on their work orders.

On the second day of the conference members talked about

the ideal structure of the service department. The group discussed questions like:

- How do you divide work among multiple dispatchers?
- When should you add a tech?
- What comes first — the work or the employees?
- How many techs quote work in the field?

Some Synergy members have added a Field Supervisor to their service department. Five companies (Automatic, Baker Group, CSE, Ruthrauff, and Oahu) who have implemented this role into their structure served on a panel discussion to answer questions that were submitted from the group. The panel shared how they got everyone in their organization to accept the role, how they handle supervising buddies, and the pot-holes they faced along the way.

“You have to make sure that everyone is on board and explain the reason for this role,” said Dave Sloan of Ruthrauff. “This role has improved our company culture. The techs have a voice that is heard and it makes them happier.”

The final day of the meeting was dedicated to technology. As a large group members shared obstacles that come with implementing new technology like creating more work for technicians as they learn how to navigate through a paperless system and needing more training on equipment like VRF's.

One of the major issues with technology is distracted driving. Marc DeLong of Yearout shared a powerful story with the group about a distracted driving incident to show why this is important topic. Attendees then discussed distracted driving challenges they're facing and processes and procedures they've implemented.

Members also shared ways of how they're utilizing technology to stay more connected. Andy Foster of Pacific Rim showed the group how his company is using Micro-soft Teams to stay connected with

multiple offices.

“Understanding the ways everyone is improving their business helps us all get better,” said Ryan English of Baker Group. “I never get tired of hearing others struggles and wins. I learn so much every time I come back.”

## TEXAS



### Berkeys AC Earns Angie's List Award

**Dallas, Texas** – Berkeys Air Conditioning, Plumbing & Electrical is proud to announce that it has earned the home service industry's coveted Angie's List Super Service Award (SSA). This award honors service professionals who have maintained exceptional service ratings and reviews on Angie's List in 2019.

“Service pros that receive our Angie's List Super Service Award represent the best in our network, who are consistently making great customer service their mission,” said Angie's List Founder Angie Hicks. “These pros have provided exceptional service to our members and absolutely deserve recognition for the exemplary customer service they exhibited in the past year.”

Angie's List Super Service Award 2019 winners have met strict eligibility requirements, which include maintaining an “A” rating in overall grade, recent grade and review period grade. The SSA winners must be in good standing with Angie's List and undergo additional screening.

“On behalf of the entire Berkeys team, we are honored to receive the prestigious Angie's List Super Service Award for the eighth-consecutive year,” said Berkeys president Jamie Wooldridge. “This is an ongoing testament to our team's unwavering commitment to providing a world-class service experience that is unmatched in the home services industry.”

Berkeys has been listed on Angie's List since 2006. This is the 10th year Berkeys has received this honor.

Service company ratings are updated continually on Angie's List as new, verified consumer reviews

Continued on Page 6

# Looking for an easy and affordable replacement for R-22 units?

## Save money with Guardian's R-407C unit.

**We Will Match Any Competitor's Written Pricing!**



**GAW • 14 SEER • R-407C • 1 PHASE**



**Reduce labor costs by replacing old R-22 condensing units with the Guardian alternative refrigerant unit. Compatible with R-22 coils and linesets!**

### Easy Changeout and Installation

- Independent panels provide quick access for unit setup
- Installation time is reduced by easy power and control wiring access
- Factory installed filter-drier means less time spent brazing and charging the system
- Small base dimension and reduced unit clearances make for easier retrofits

### Quality Construction and Durability

- Coated steel wire fan guard, coated external fasteners, and pre-treated G90-equivalent galvanized steel chassis components resist corrosion and rust creep
- Powdercoat paint further protects external panels
- Louvered coil protection – Two stamped steel louvered panels protect the coil from mechanical damage
- High efficiency micro channel aluminum coil is manufactured using an improved material
- Compressors are protected internally by a high pressure relief valve and a temperature sensor, and externally by the system high pressure switch
- Liquid line filter-drier is factory installed to protect the compressor against moisture and debris
- Warranty: 5 year limited parts and compressor warranty

Shipped with a holding charge. Agency listed - UL 1995 / CSA 22.2  
Performance certified to ANSI/AHRI Standard 210/240.

Price matching applies to GAW units only; other products may not be eligible for price matching.



## LX SERIES 14 SEER CONDENSING UNIT

Model Number	Nom. Ton	Nom. Seer	Width	Height	Length	Weight
GAW14L18C21S	1.5	14	29-1/4	30	29-1/4	135
GAW14L24C21S	2.0	14	29-1/4	30	29-1/4	135
GAW14L30C21S	2.5	14	29-1/4	36-1/4	29-1/4	150
GAW14L36C21S	3.0	14	35-1/4	33-1/4	31-3/4	195
GAW14L42C21S	3.5	14	35-1/4	33-1/4	31-3/4	195
GAW14L48C21S	4.0	14	38	36-1/4	34-1/4	200
GAW14L60C21S	5.0	14	38	42-1/4	34-1/4	215

## GET THE US AIR ADVANTAGE

- Free Next Day Delivery
- One-stop HVAC Supply Shop
- Refrigerant Cylinder Exchange Program
- Online Services – <http://online.us-ac.com/>
- Crane Lift Services
- Real Time Delivery Tracking at [www.us-ac.com](http://www.us-ac.com)
- Most Stores Open on Saturdays

*Not all services available at all locations*

**For more information, contact your local US Air branch today.**



[www.us-ac.com](http://www.us-ac.com) •

**800/937-7222**

ARIZONA Avondale 602/572-2953 Deer Valley 623/580-4101 Fort Mohave 928/768-2197 Gilbert 480/813-4628	Peoria 623/334-8302 Phoenix 602/253-2771 Tucson 520/903-3117	CALIFORNIA Anaheim 714/776-3170 Bakersfield 661/322-7222 Burbank 818/840-0089 Cathedral City 760/770-4520	Chatsworth 818/678-1750 City of Industry 626/854-6868 Concord 925/349-3712 Culver City 310/204-2230	El Cajon 619/258-0672 El Centro 760/370-5530 Escondido 760/291-1281 Fairfield 707/424-6050	Fresno 559/268-9347 Hesperia 760/948-8045 Lake Forest 949/837-8104 Lancaster 661/726-5106	Los Angeles 323/897-6969 Modesto 209/577-2335 Newbury Park 805/376-1723 North Highlands 916/482-3572	Ontario 909/987-5016 Oxnard 805/988-3650 Palm Desert 760/200-5225 Paso Robles 805/238-9353	Redding 530/722-0144 Riverside 951/786-3500 S. San Francisco 650/871-8100 San Bernardino 909/885-3206	San Diego 858/279-9750 San Jose 408/278-1555 San Leandro 510/618-2300 Santa Barbara 805/962-2999	Santa Fe Springs 562/801-5432 Santa Rosa 707/566-9810 Signal Hill 562/981-2010 Stockton 209/466-4153	Temecula 951/296-6557 Valencia 661/666-9544 Van Nuys 818/464-3387	IDAHO Boise 208/672-1244 Idaho Falls 208/542-5270	NEVADA Sparks 775/329-3455 UTAH Salt Lake City 801/485-8071 or 800/333-8436
--	---	---	--	---	--	---	---	--	---	---	--	---	---

*Not all brands available at all locations*

Continued from Page 4

are submitted. Companies are graded on an A through F scale in multiple fields ranging from price to professionalism to punctuality. For over two decades Angie's List has been a trusted name for connecting consumers to top-rated service professionals. Angie's List provides unique tools and support designed to improve the local service experience for both consumers and service professionals.

Fujitsu General Opens Application Center of Excellence

Richardson, Texas – Fujitsu General America celebrated the launch of its Applications Center of Excellence.

Led by Umair Surani, the Applications Center of Excellence (ACoE) will provide applications support to the entire Fujitsu sales channel. Through the development of various tools and resources, the ACoE will increase dealer confidence in selling Fujitsu solutions in various applications, both simple and complex. Surani has worked at Fujitsu since 2014, having begun his career as a commissioning engineer and later taking on the role of Mid-Atlantic sales engineer. He is excited for the opportunity this new position gives him to make Fujitsu easier to do business, and the chance to groom young professionals into industry leaders. Details on how to request support and types of tools and resources being developed will be released periodically over the coming months.

Modernize Reaches Service Milestone

Austin, Texas – For the 2019 calendar year, Modernize helped more than two million homeowners across the United States search for the contractors they need. This is the first time Modernize had two million inquiries, each being a separate project where Modernize was asked to connect homeowners with qualified local contractors for major energy-saving home improvements. Since most homeowners seek multiple quotes, this resulted in over three million leads to contractors. "We've grown our business through both online and offline sources," said Jim Ziminski, CEO of Mr. Roof / Able Roof. "But over the past decade, we've seen a big shift to homeowners coming from online sources. With

Modernize's place in the market, it's no wonder they're garnering so many of those requests." "At Modernize, we're constantly tuning and tweaking how we create value in the process of connecting homeowners with our contractor partners," said Jason Polka, Modernize CEO. "We're proud to now be serving over two million homeowners per year, initiating projects that generate over a billion dollars of revenue for our contractor partners, and creating long-lasting energy savings for homeowners from coast to coast."



to seeing Clay's Climate Control's continued success." "We are honored to be recognized by industry leaders as ACCA's 2020 Residential Contractor of the Year," said Clay and Jen Pierce, owners of Clay's Climate Control. "When we started our business in 2001, we wanted to change the expectations people had of the home service experience. Little did we know how much work that would take or the resources we would need. With connections we have made through ACCA and the opportunities they provide us, we have been able to make significant progress towards that goal. This recognition shows us how far everyone at Clay's Climate Control has come." For more information, visit [www.acca.org](http://www.acca.org).



ACCA Names 2020 Residential Contractor of Year

Arlington, Va. – The Air Conditioning Contractors of America (ACCA) announced Clay's Climate Control in Linwood, N.J., as the ACCA 2020 Residential Contractor of the Year. Each year, ACCA's Contractor of the Year awards are presented to a commercial and residential contracting company that demonstrates an extraordinary commitment to contractor excellence. Finalists are judged on a range of qualities including community and industry involvement, and a commitment to employee training and education programs. A panel of ACCA past chairmen judge the finalists and select the ACCA Contractor of the Year winner. The 2020 judges were Tony Shaker of Infinity Partners LLC, Mashpee, Massachusetts (2000); Larry Taylor of Taylor Consulting, Fort Worth, Texas (2001); Greg Leisgang of JonLe Heating & Cooling, Cincinnati, Ohio (2005); Richard Dean of Environmental Systems Associates Inc., Columbia, Maryland (2006); and Stan Johnson, retired from Stan's Heating and Air Conditioning Inc., Dennison, Texas (2009). "ACCA is pleased to present the 2020 Residential Contractor of the Year award to the team at Clay's Climate Control," said Barton James, ACCA president and CEO. "Jen and Clay Pierce set out with an ambitious goal. Through their dedication and determination, they have had a huge impact in their market area, and on our industry. They are making investments daily through training, marketing, and customer interactions that shine a light on what a great industry we all work in. ACCA looks forward

Wisconsin Names Greenheck Manufacturer of the Year

Schofield, Wisc. – Greenheck Group was selected as the 2019 Wisconsin Manufacturer of the Year in Milwaukee on Feb. 20 by an independent panel of judges sponsored by Wisconsin Manufacturers & Commerce (WMC), Michael Best, and Baker Tilly. This is the fourth time the company has received the Wisconsin Manufacturer of the Year award in the Mega Category. Greenheck was also recognized for this prestigious award in 2004, 2012, and 2016. "We strive every day for continuous improvement and to be the easiest company to do business with," said Jim McIntyre, president and CEO of Greenheck Group. "Earning the prestigious Wisconsin Manufacturer of the Year award is an amazing honor and it is all because of the extraordinary contributions made every day by our employees and business partners all over the world. We know there are many outstanding manufacturers in Wisconsin, and to be recognized is especially humbling." Due to its dedicated employee base, strong sales partners, and suppliers, and continued product innovation to meet changing customer needs, annual sales at Green-

Better Air, For Better Living

The **NEW** Fresh Air Ventilation Control intelligently manages the central fan to provide fresh air ventilation all year long while meeting ASHRAE 62.2.



<ul style="list-style-type: none"><li>Enhances indoor air quality of the home</li><li>Complies with ASHRAE 62.2 2010, 2013 and 2016, Title 24</li><li>Factory preset for a 3 bedroom, 2,000 sq-ft home</li><li>New or existing single/multi-family operation</li><li>Customizable for nearly any size home</li><li>Multiple climate application modes</li><li>Monitors up to four exhaust appliances</li><li>Can provide make-up air in response to an exhausting appliance</li></ul>	<p><b>FIELD CONTROLS</b> Improving Indoor Environments</p> <p>Field Controls 9154 Stellar Court Corona, CA 92883 252.522.3031 <a href="mailto:contact@fieldcontrols.com">contact@fieldcontrols.com</a></p>
FRESH AIR VENTILATION CONTROL (FAVC)	<a href="http://WWW.FIELDCONTROLS.COM/FAVC">WWW.FIELDCONTROLS.COM/FAVC</a>

Continued on Page 8



ENERGY EFFICIENCY

# SoCalGas® Residential Rebates

## SoCalGas Residential Rebate Programs Offer Customers Generous Rebates on High Efficiency Equipment and Installations.

### SoCalGas Residential Rebates Include:

- Incentives up to **\$313** per unit to HVAC distributors to stock, sell, and promote high-efficiency heating systems through the **High-Efficiency Furnace Upstream Program**. 96% AFUE and above furnaces qualify.
- Up to **\$600** on qualifying natural gas tankless water heaters.
- **\$175** rebate on ENERGY STAR® certified natural gas storage water heaters.
- Up to **\$400** rebate on ENERGY STAR certified natural gas furnaces.

Learn more at: [socalgas.com/rebates](https://socalgas.com/rebates)



The Residential HVAC Program is funded by California utility customers and administered by Southern California Gas Company (SoCalGas®) under the auspices of the California Public Utilities Commission, through a contract awarded to CLEAResult. Program funds will be allocated on a first-come, first-served basis until such funds are no longer available. This program may be modified or terminated without prior notice. SoCalGas makes no warranty, whether expressed or implied, including warranty of merchantability or fitness for particular purpose of selected goods and services. California customers who choose to participate in this program are not obligated to purchase any additional services offered.

CLEAResult is a SoCalGas authorized contractor responsible for administering the Residential HVAC Program through December 31, 2020.

©2020 Southern California Gas Company. The trademarks used herein are the property of their respective owners. All rights reserved.  
Some materials used under license, with all rights reserved by licensor.



Continued from Page 6

heck Group have increased by 25 percent over the past three years. Consequently, the company has expanded and upgraded facilities at its headquarters in Schofield, Wisconsin, and opened two new campuses in Shelby, North Carolina, and Tulsa, Oklahoma, this past year.

“Bob Greenheck, cofounder of Greenheck Group with his brother Bernie, has always said ‘Innovate or Perish,’” said McIntyre. “He set a high bar for the company and we reach for it every day by continuously reinvesting in our employees, plants, and products.”

Greenheck Group has also been recognized the past four years as Wisconsin’s Best Place to Work for Young Professionals and was named one of Forbes’ America’s Best Midsize Employers in 2019.

.....

## Belimo Grants ICD Platinum Status

**Pittsburgh, Penn.** – ICD Building Automation has earned Platinum Distributor status for 2020 from Belimo.

Belimo’s Platinum Distributor program recognizes distributors that are proven to provide superior controls expertise, application knowledge, and overall customer service.

“ICD Building Automation is proud to continue representing Belimo as a Platinum Distributor,” said Jim Semler, director of ICD Building Automation. “Belimo is recognized worldwide for developing and manufacturing industry-leading sensors, control valves, and damper actuators. Our longstanding partnership with Belimo benefits ICD Building Automation customers, who rely on our trusted product knowledge, technical support, warranty service, and training sessions

to improve their commercial buildings’ energy efficiency, reliability, and safety.”

.....

## Danfoss Launches EnVisioneering Podcast Series

**Baltimore, Md.** – Danfoss has launched a brand-new podcast series, EnVisioneering Exchange, to address the changing landscape of industry. The podcast will feature thought-provoking interviews and dialogue that discuss the effect on technology and business – from refrigerant and efficiency regulations and standards to the impact of climate change and trends like digitalization and electrification.

“Today, the HVACR industry – and our built environment as a whole – faces an evolving set of challenges and demands. Now



more than ever, dialogue among industry stakeholders through quick, digestible information sources is vital,” said Lisa Tryson, director, corporate communications, at Danfoss. “We’re excited to introduce the EnVisioneering Exchange podcast, which – much like our EnVisioneering Symposia Series – we hope will provide valuable information from thought leaders and experts-in-their-fields to our partners, stakeholders, and the entire industry.”

The EnVisioneering Exchange podcast is hosted and moderated by Danfoss Director of Public and Industry Affairs John Sheff.

The first three episodes of the podcast are available for download now – all focusing on refrigerants:

- Episode one addresses refrigerant regulations like those related to the Kigali Amendment to the Montreal Protocol as well as California Air Resources Board (CARB).
- Episode two discusses refrigerant safety and flammability.
- Episode three dives into refrigerant trends in air conditioning.

In addition to the EnVisioneering Exchange podcast, Danfoss also produces its Solutions magazine and EnVisioneering Solutions blog.

The EnVisioneering Exchange podcast can be downloaded at [https://soundcloud.com/danfoss\\_us](https://soundcloud.com/danfoss_us).

.....

## Midwest Tool Celebrates 75th Anniversary

**Sturgis, Mich.** – Midwest Tool & Cutlery Company (Midwest Tool) is celebrating its 75th anniversary. It was in July 1945, when WWII was ending, and material became easily available, that Midwest Tool made its first shipment. The following year Midwest Tool landed their dream customer, Sears, Roebuck

and Company.

Back then, Midwest Tool was strictly an OEM private label tool company focused on manufacturing scissors, tinners, gardening shears, and other related hand tools for Sears under the Craftsman brand as well as other, now major tool brands.

Throughout the 1950s and 60s, Midwest Tool continued to grow due to the quality of the tools; however, in the 60s the market started to globalize. The first tools to move overseas were the lawn and garden tools. As DIY stores became popular in the 80s, several major tool companies started sourcing their tools from other countries. In the early 90s Midwest Tool made two major shifts. The first was the introduction of the Pocket Socket tool, which was a huge success. This tool was even featured on the Bob Vila, This Old House TV show. The second shift took place in 1993, when Midwest tool introduced its own brand of tools.

“Our success is based off a simple two-part strategy: first, only the highest quality tools leave the plant and second, we stand behind our tools and the tradesmen,” said Chuck Loparo, director of sales and marketing. “Seventy five years of manufacturing tools in the USA is something we are proud of and we intend to celebrate around the world, focusing on the positive experiences people have in the trades.”

.....

## SMACNA Launches Workforce Campaign

**Chantilly, Va.** – The Sheet Metal and Air Conditioning Contractors’ National Association (SMACNA) announced the launch of its workforce development campaign, designed to raise public awareness for career opportunities across the organized HVAC and sheet metal industries, and support its members in recruitment efforts. A new website, [IgniteYourCareer.com](http://IgniteYourCareer.com), is being rolled out and will serve as the “digital hub” of this comprehensive campaign.

“Our industry is grappling with a rapidly aging workforce, which is compounded by the national shortage of skilled trade workers and record low unemployment levels across the country,” said Vince Sandusky, SMACNA’s CEO. “When we consider the challenges that our members are likely to face in the coming years, having enough qualified workers to satisfy customer expectations is at the top of the list for many.



# Sierra Truck Center

## Chevrolet Commercial Vehicles

Your One Stop Shop for Light & Medium Trucks and Vans



**If We Don't Have It... We'll Build It for You**

**Just ask for Commercial Trucks**  
**877.278.0333 or 626.932.5652**

Sierra Truck Center | [www.SierraTruckCenter.com](http://www.SierraTruckCenter.com)  
1621 South Magnolia Ave. Monrovia, CA 91016



# Industry News

SMACNA is proud to play a leading role in addressing this challenge. Our 'Ignite Your Career' campaign is focused on not only helping to fill the pipeline of immediate job openings, but also on increasing the quality and depth of a new generation of applicants considering our field – whether on the craft or non-craft side."

The Ignite Your Career website serves as a dynamic hub for visitors to explore the many career paths and opportunities within the industry; hear success stories from a variety of real-life professionals; and connect with resources, including local SMACNA chapters and industry training centers, to learn more about available opportunities.

Along with the website, SMACNA has launched a social media presence for its Ignite Your Career campaign on Facebook, Instagram, Twitter, and YouTube. Other features of the campaign include audience research, digital advertising, and media relations efforts. New marketing materials, including handouts, infographics, and videos spotlighting careers in the industry, are also available for member companies to enhance their own recruitment programs and activities.

The U.S. Bureau of Labor Statistics projects a nine percent growth in jobs in the sheet metal industry by 2026. Job seekers can benefit from eager-to-hire employers, rewarding careers, superior salaries and wages, and on-the-job training across managerial and skilled labor roles.

## Mitsubishi Electric Trane Recognized with Home Builders Association Award

**Suwanee, Ga.** – Mitsubishi Electric Trane HVAC US (METUS) has been awarded a National Association of Home Builders (NAHB) 2019 Global Innovation Award for its SLZ-KF Four-way Ceiling Cassette model in the internal/external products category.

For the past five years, the NAHB Global Innovation Awards have recognized the most cutting-edge, advanced, or original product offerings and marketing strategies.

NAHB established the awards to showcase these products to the entire global home building community and encourage innovation. This year, NAHB gave awards in three categories: internal/external products, technology/education, and leadership.

"The products recognized by this year's Global Innovation Awards offer home builders new options for building more sustainable, more efficient, and more comfortable homes, as well as unique ways to plan and sell them to buyers," said S. Robert August, chairman of the NAHB Global Opportunities Board. "We're excited to welcome these winners to our family of innovators who've been honored with this award."

Mitsubishi Electric Trane HVAC US accepted its award in

Las Vegas, Nevada, during the NAHB International Builders' Show (IBS) Global Industry Day in January. Judges chose the winners based on the following criteria: innovation, functionality, good design, builder/consumer friendly, sustainability, and unique marketing approach.

## Winsupply Buys ASAP Industrial Supply of Calif.

**Dayton, Ohio** – Winsupply Inc. has closed on the purchase of assets of ASAP Industrial Supply, an industrial pipe, valves, and fittings distributor in Southern California. Details of the purchase were not disclosed.

ASAP Industrial Supply, which is changing its name to Inland Empire Windustrial and become part of the Winsupply Family of Companies, serves industrial contractors in the Inland Empire of California with pipe, valves, and fittings.

Jason Johnson becomes president of Inland Empire Windustrial and is purchasing equity in the company under Winsupply's shared ownership business model. Johnson is a former upper level executive in the restaurant industry who has been in Winsupply's training program for prospective local company owners over the past year.

"ASAP Industrial Supply has a strong presence in the Inland Empire and this acquisition fills a market need for Winsupply in serving industrial customers from Riverside to Fontana to San Bernardino," said Monte Salsman, president of Winsup-

ply Acquisitions Group.

"I grew up in the plumbing world as my father owned a large plumbing company," said Johnson. He left his father's business to work for 16 years as a regional vice president for two major restaurant chains and then as chief executive officer of a medical device manufacturer before joining Winsupply.

"I have always felt at home in the humbleness of the plumbing-construction trade, and wanted to get back to my roots," he said. "Service and employee gratification and happiness has always been a key attribute to success in my life. Winsupply inspired me when hearing of the long term, happy employees that run these companies."

Continued on Page 10

# Big Savings are In The Air!

## Spring HVAC Special 2020

April 1- May 16, 2020



Save BIG this season, score YETI® gear and earn chances to win a customer trip to Los Cabos!



### R.E. MICHEL COMPANY

WHOLESALE DISTRIBUTORS • AIR CONDITIONING • HEATING • REFRIGERATION  
PROPANE • EQUIPMENT • PARTS • SUPPLIES

— Since 1935 —

**We're Open Every Saturday Morning!**

Connect with us on



**GILBERT, AZ**  
480-571-3710

**MESA, AZ**  
480-968-0168

**PEORIA, AZ**  
602-269-0300

**PHOENIX, AZ**  
602-841-7385

**SCOTTSDALE, AZ**  
480-725-9928

**TOLLESON, AZ**  
(SW Phoenix)  
602-973-8063

**TUCSON, AZ**  
520-795-1484

**YUMA, AZ**  
928-248-2576

**ANAHEIM, CA**  
714-635-5956

**EL CAJON, CA**  
619-449-9550

**FRESNO, CA**  
559-459-0100

**IRVINDALE, CA**  
626-962-0286

**LONG BEACH, CA**  
562-200-0089

**ONTARIO, CA**  
909-987-4207

**PASO ROBLES, CA**  
805-434-1460

**POMONA, CA**  
909-392-5626

**RIVERSIDE, CA**  
951-271-8290

**SAN JOSE, CA**  
408-477-1799

**SANTA MARIA, CA**  
805-621-7070

**TEMECULA, CA**  
951-308-2661

**THOUSAND PALMS, CA**  
760-343-0754

**UNION CITY, CA**  
510-483-8031

**VAN NUYS, CA**  
818-781-3123

**ALBUQUERQUE, NM**  
505-884-2660

**LAS VEGAS, NV**  
702-733-7230



St. Jude Children's hospital officials received a check for \$427,000 from ARS/Rescue Rooter.

Continued from Page 9

## ARS/Rescue Rooter Donates to St. Jude Hospital

**Memphis, Tenn.** – ARS/Rescue Rooter presented a check to ALSAC, the fundraising and awareness organization for St. Jude Children's Research Hospital. Because of generous supporters, families never receive a bill from St. Jude for treatment, travel, housing, or food – because all they should worry about is helping their child live.

In 2019, ARS/Rescue Rooter raised \$427,000 from over 48 branch locations within the ARS Network as well as sponsored events. The partnership, which began in 2018, is kicking off its third year and will continue to support the St. Jude mission via promotions, employee engagement, as well as corporate-sponsored events.

“ARS/Rescue Rooter is proud to support St. Jude Children's Research Hospital and their lifesaving mission to find cures for children with cancer and other life-threatening diseases through research and treatment,” said Luis Orbegoso, president, ARS/Rescue Rooter. “We are committed to providing comfort to not only our customers but to the communities in which we live, work, and play. Partnering with a global organization like St. Jude is a natural fit as it also calls Memphis home.”

“When Danny Thomas set out to build and sustain St. Jude Children's Research Hospital, he relied on friends from around the country and in his local community to help raise the funds and awareness needed,” said Richard Shadyac Jr., president and CEO of ALSAC, the fundraising and awareness organization for St. Jude. “That sense of community is felt through the dedication from our partners at ARS, from our very own Memphis

family, who have supported us for three years now. Partners like ARS are helping us continue our lifesaving mission, and we are so thankful for this contribution.”

## Nortek Air Solutions Partners with Local Charity

**Kingfisher, Okla.** – After a typical morning working at the HVAC industry's largest manufacturer of custom air handling equipment on Feb. 4, 30 Nortek Air Solutions (NAS) executives, engineers, and factory employees finished their work day handling paint brushes and brooms at the Filters For Life (FFL) center, in Kingfisher.

The community service effort to spruce up the 10,000-square foot air filter fabrication facility was just another checklist item in NAS' ongoing corporate volunteer partnership with the FFL's non-profit charity owner, Center of Family Love (CFL), Okarche, Oklahoma

CFL provides direct-care for more than 130 adults living with intellectual and physical disabilities, many of whom reside at the 39-year-old organization's 11-building, 20-acre Okarche campus. CFL has created career opportunities for residents in viable, self-sustaining businesses, such as the FFL and Kristy Lyn's Flowers & Gifts, the charity's retail giftshop and garden center that also received NAS' updates on Feb. 4.

“Our partnership with NAS is one of the biggest blessings to our ministry,” said Debbie Espinosa, CFL's president and CEO. “Not only are they helping us improve facilities; they are truly fulfilling every aspect of what a partnership can be between a corporation and a charity. We are beyond grateful for the financial support and

expertise provided by NAS, and while they could've just left it at that, they continue to share their time and energy, playing a crucial role in our community and in our residents' lives. NAS' actions demonstrate what a partnership is truly about.”

“When two great organizations come together, they can make a difference for people who just need the opportunity to do great things, too,” said Buddy Doll, NAS' group president to CFL. “The CFL partnership has also changed the lives of our employees too. Giving back to such a worthy cause, has left a lifetime impression on our employees.”

The community service day, which is one of many planned for 2020, concluded with a fellowship reception attended by NAS, CFL employees and CFL residents on the charity's Okarche campus.

## SEER Group LLC Acquires Coffman & Company

**Redmond, Wash.** – The SEER Group LLC announced its twelfth acquisition, Coffman & Company, a heating & air conditioning company serving the Denver metro area.

“As owners of Coffman & Company for 28 years, we have always tried to operate the company with both our customers and employees' best interests in mind,” said Pat and Judy Quinlan, the sellers in the transaction. “We did not want to sell to a large company that would come in and change everything, including our employees.”

Coffman & Company has been an award-winning, leading provider of primarily residential heating and air conditioning services since 1983.

“We talked to many people, but never found anyone that we felt met our values,” said the Quinlans. “After some investigation, and meeting with the president of the company, we concluded that this was a company that shared our values. We are extremely happy to have turned over the company to this group, and we are confident it is going to be a positive for our employees and customers.”

“Pat and Judy have built a wonderful legacy of taking great care of their team members and their customers, and we are very proud to welcome the Coffman team to our family of companies as we continue to expand our footprint nationally,” said Darrin Erdahl, CEO and founder of The SEER

Group LLC.

“The Coffman leadership group, that has been instrumental in maintaining the core values of the Coffman brand for years, will continue leading the team,” said Eric Beardemphl, president of The SEER Group LLC. “With the Coffman team's talents and dedication, along with the combined synergies and support from our other partner companies, we are very excited about our long-term vision for the Denver market and surrounding areas.”

## RIDGID Launches Experience Contest

**Elyria, Ohio** – Past winners have called it the trade trip of a lifetime. RIDGID® is again inviting tradespeople to share their passion for their profession via the 2020 RIDGID Experience contest. The contest excitement heightens in May, when eight winners will be selected to receive a multi-day all-expense paid VIP trip to RIDGID headquarters. And, new this year: two coveted spots are being offered exclusively to the next generation of trade professionals.

“The RIDGID Experience contest started four years ago as a grassroots effort on our part to recognize our loyal customers. What it's become is truly a career defining experience for our winners. One look at the Instagram posts about the contest, and it's clear that our tradespeople take this contest as seriously as they take their RIDGID tools,” said Becky Brotherton, manager, marketing and communications, RIDGID.

Brotherton notes that RIDGID wanted to enhance the experience this year with the addition of two spots exclusively for future tradespeople – those currently in trades school or an apprentice. “For years, we've boosted our outreach programs to help attract the next generation of professionals to the skilled trades. This year's contest reflects our commitment to celebrating people in the industry at all stages of their career,” she said.

RIDGID Experience winners will receive:

- An all-expenses-paid trip to RIDGID world headquarters, July 29-July 31, 2020
- A VIP RIDGID headquarters tour
- A custom RIDGID pipe wrench
- Hero photoshoot, celebrating winners' dedication to the skilled trades
- Share insights and get one-on-one time with product, engineering, research and development managers
- Suite seats to see the Cleveland Indians
- Fishing excursion on Lake Erie

• And much more

To enter, visit the RIDGID Facebook page – facebook.com/RIDGIDTools, fill out the entry form and upload a photo or video of you and your favorite RIDGID tool. Deadline to enter is April 24, 2020.

Winners will be announced in May. Visit the RIDGID Facebook page for complete entry details and contest terms and conditions.

## Fresh-Aire UV Names Rep of Year

**Orlando, Fla.** – Fresh-Aire UV, manufacturer of UVC and PCO/ carbon indoor air quality (IAQ) products, named Value Oriented Sales (VOS), Miami, as its “Rep of the Year–2019” at the International Air-Conditioning, Heating and Refrigerating Exposition (AHR Expo 2020), Feb. 3 in Orlando, Fla. Fresh-Aire UV also recognized its five All-Star Reps for 2020.

The one-year-old VOS is the newest rep for Fresh-Aire UV and its territory is the state of Florida. President Nick Vosburgh is not new to Fresh-Aire UV however; he was a salesperson for seven years with the firm before founding VOS. That IAQ experience prepared him to record the best Florida annual sales in Fresh-Aire UV's history last year resulting in more than a 20-percent increase over the territory's 2018 sales.

Fresh-Aire UV also named five individual All-Stars for 2019 from its manufacturer's representative network. The individuals and compliments from their key distributors are:

• Jim Snell, Southwestern HVAC Sales (SWS), Smithville, Texas – “Jim does an incredible job working with my sales team and branches in Alabama!” said Wes McDaniel, regional sales manager, R.E. Michel Co. Ltd., Decatur, Ala. “He has a tremendous product knowledge and his professionalism is impeccable.”

• Jodi Rorke, Kivlan Group, Mechanicsburg, Pa. – “Working with Jodi is always a pleasure. Responsive, cheerful, and on point, she is dedicated to our success and best of all, she epitomizes the ideals of our industry!” – Darius Lyvers, COO, F.H. Furr Plumbing, Heating, Air Conditioning & Electrical, a contractor based in Manassas, Va.

• Joe Knust, K & B Sales, Omaha, Neb. – “As we continue to grow our Fresh-Aire UV market share, Joe Knust has been a big

Continued on Page 17

## OUR MULTI-ZONE SOLUTIONS PROVIDE INDEPENDENT ROOM CONTROL FOR ULTIMATE COMFORT



- ▶ Whisper Quiet Operation (59dB or lower)
- ▶ Independent Zone Temperature Control
- ▶ From 2 Tons to 5 Tons of Outdoor Cooling
- ▶ Up to 492ft of Piping Length (8 Zone System)
- ▶ INVERTER-Driven Compressor Heat Pump

5% discount on your next Mitsubishi-American Standard Multi-Zone system. Original Indoor Comfort News ad must be submitted to branch. One discount per customer.

Family owned and operated independent wholesale distributor of air conditioning, heating, and refrigeration equipment, parts, and supplies. Our goal is to provide our customers with the highest quality products, unrivaled support, and the most expansive inventory selection in Southern California.

### SIX SOUTHERN CALIFORNIA LOCATIONS

Culver City-HQ  
(310) 837-9100

Anaheim  
(714) 991-4441

Downtown LA  
(213) 747-5121

Escondido  
(760) 743-7300

Riverside  
(951) 784-8800

Van Nuys  
(818) 782-3600



<http://howind.com>



## Coronavirus/COVID-19 Mitigation for the HVAC Industries and its Customers

Continued from Page 1

Any species of ventilation and respiration directs air to the lungs, which are a vulnerable host for this virus. For example, even common-place devices used for sleep apnea such as CPAP machines should not be used on airplanes because they condense room air and particulates into the lungs. Hotel rooms and transport cabins present an open question especially in an air conditioned common plenum system. Licensed HVAC contractors who understand how such systems work and how to install them stay current on the practical requirements. They are experts in special environment such as hospitals but bring additional expertise to new challenges such as those the virus presents.

For example, the HVAC industry has long used UV systems to address such problems as air purification, odor removal, coil cleaning and mold mitigation. Some products go as far as reducing microbial populations on surfaces. The current Novel Coronavirus pandemic has again created a large demand for these UV products, particularly those which are able to kill viruses on surfaces in a home. It is important to note that

not all UV products produce the same results. Each product must be evaluated based on research performed. It should be noted that in California, products which use ozone as a purifier, are prohibited. Whether the system uses ozone or not, the potential for UV lights has a history of success when dealing with indoor air and surface contamination.

Work processes, especially installation invoke special considerations beyond those suggested by the CDC, especially as to filtration masks. Many in use by professional installers are not disposable. These and other PPE equipment should never be shared and must be subject to an effective cleaning regimen. The same applies to tools and equipment.

Under California law, which requires Injury and Illness Prevention Plans (IIPP) of most employers, a plan must be tailored to actual workplace risks to be considered effective and thus compliant. This means that covered workplaces will require updated and expansion of their IIPP policies.

Additionally, every decision that impacts the workplace implicates workplace policies. For example, and of major importance, much attention has been given nation-

ally and in California to the issue of independent and gig workers – The California Labor Secretary and her department have indicated that such workers should apply for unemployment benefit issues and classification issues will be addressed in processing such applications.

We include CAL/OSHA's initial safety order guidance, and the California Labor Commissioner's initial FAQ on integration of pay, sick leave and work rule policies plus links for DOL guidance. The latest updates issued by executive order may be found here and include the shortening of the waiting period for those affective for EDD claims. See: <https://www.gov.ca.gov/2020/03/12/governor-newsom-issues-new-executive-order-further-enhancing-state-and-local-governments-ability-to-respond-to-covid-19-pandemic/>

### I. CAL/OSHA's Initial Interim Guidance for Protecting Workers from Exposure to Coronavirus.

It is important to note that as further knowledge develops, aspects of the Initial Guidance maybe revised and updated. One such area, which the guidance touches on, is the role of engineering and administrative controls. (<https://www.dir.ca.gov/title8/5141.html>). In pertinent part, these include:

(a) Engineering Controls. Harmful exposures shall be prevented by engineering controls whenever feasible.

(b) Administrative Controls. Whenever engineering controls are not feasible or do not achieve full compliance, administrative controls shall be implemented if practicable.

(c) Control by Respiratory Protective Equipment. Respiratory protective equipment, in accordance with Section 5144, shall be used to prevent harmful exposures as follows:

(1) During the time period necessary to install or implement feasible engineering controls;

(2) Where feasible engineering controls and administrative controls fail to achieve full compliance; and

(3) In emergencies.

### II. CAL/OSHA Issues Interim Guidance for Protecting Workers from Exposure to Coronavirus

CAL/OSHA's regulations require protection for workers exposed to airborne infectious diseases such as the 2019 Novel (new) Coronavirus (2019-nCoV), first identified in Wuhan City, China in December 2019. While the interim guidance is primarily directed at providing information to employers and workers in the healthcare industry for preventing exposure to the virus, the guidance extends beyond the healthcare industry. The Aerosol Transmissible Diseases (ATD) standard (Title 8, California Code of Regulations, § 5199) contains the requirements for protecting employees from diseases and pathogens transmitted by aerosols. 2019-nCoV is an Airborne Infectious Disease (AirID) covered by the ATD standard. The ATD standard addresses employers who must comply with all elements of the ATD standard which are referred to as "full standard" employers in this article and "referring" employers who only have to comply with portions of the ATD standard.

#### Full Standard Employers

Employers in the following categories are presumed to have employees with some extent of occupational exposure: health care facilities, laboratories, public health services, police services and other locations where employees are reasonably anticipated to be exposed to confirmed or suspected cases

of Aerosol Transmissible Diseases. Health care facilities and other facilities where they diagnose, treat, and house patients are obvious employers who must comply with all elements of the ATD standard but there are many other employers that are less obvious which must also comply with all elements of the ATD standard such as the following:

- Paramedic and emergency medical services including those provided by firefighters and emergency responders;

- Police services provided during transport or detention or persons reasonably anticipated to be cases or suspected cases of aerosol transmitted diseases or other police services; provided in conjunction with health care or public health operations;

- Correctional facilities and other facilities that house inmates or detainees;

- Maintenance, renovation, service or repair operations involving air handling systems or equipment or building areas that may reasonably be anticipated to be contaminated with aerosol transmissible pathogens including areas where suspected cases of airborne infectious disease cases are treated or housed, isolation rooms and/or laboratory hoods and ventilation systems.

The ATD standard requires covered employers to protect employees from AirIDs such as 2019-nCoV through the effective use of the following:

1. Written ATD exposure plan and procedure;
2. Training;
3. Engineering and work practice controls;
4. Personal protective equipment;
5. Medical services including vaccination and infection determination and treatment;
6. Laboratory operation requirements.

The requirements are too detailed to discuss in detail and can be found at Title 8, California Code of Regulations, §5199. Cal/OSHA has published "The California Workplace Guide to Aerosol Transmissible Diseases" which provides a guide to compliance with the ATD standard.

#### Referring Employers

Referring employers are required to establish a limited set of written procedures instead of the Exposure Control Plan covered under the full ATD standard. This category of employers includes most primary care offices and clinics,

**HOME BALANCING VALVES**  
Direct airflow to precise calibrated settings to improve indoor air quality and comfort

**cps®**  
Advanced Tools  
Smart Solutions

**BECOME AN AIRFLOW PRO AND EARN MORE PROFITS!**

**AIRFLOW CAPTURE HOOD**  
The lightest, most compact and affordable airflow capture hood

Easy-to-use CPS Link™ app makes airflow analysis a breeze!

**cps® link™**  
Available on the Google play App Store

<https://www.cpsproducts.com/iaq/home>

many community-based clinics, long-term health care facilities, school nurses, drug treatment facilities, homeless shelters and jails. Employees working at such facilities may have direct contact with individuals confirmed or suspected to have an AirID and are therefore at increased risk for infection but not to the same extent as employees in a medical treating facility.

Employers whose employees have occupational exposure but do not provide diagnosis, treatment, transport, housing, isolation or management to patients with known or suspected AirIDs may qualify as referring employers if they meet all of the following conditions:

1. Screen persons for AirID;
2. Refer any person identified as a case or suspected case of AirID to an appropriate facility for care;
3. Do not intend to provide further medical services to AirID cases and suspected cases beyond first aid, initial treatment or screening, and referral;
4. Do not provide transport, housing, or airborne infection isolation to anyone identified as an AirID case or suspected case unless the transport provided is only non-medical transport in the course of referral.

Referring employers must establish the following six (6) infection control procedures in writing and make them available to employees at the work site: (1) Designate one person as the administrator to have overall responsibility for ATD infection control procedures, (2) Develop source control procedures, (3) Develop procedures for screening and referring patients exhibiting symptoms of AirIDs to appropriate facilities treatment, (4) Develop procedures to communicate between employees and “upstream” and “downstream” employers with regard to the patient, (5) Develop procedures to reduce the risk of transmission and (6) Provide the same medical services to employees as full standard employers provide.

Even if an employer is not a “full standard” employer or a “referring” employer they must still identify, evaluate, and correct hazards in their workplaces using their Injury and Illness Prevention Program, in accordance with Title 8, California Code of Regulations, section 3203. The following is a list of resources from the CAL/OSHA website.

One additional point, CAL/OSHA has identified workplace conditions such as “Valley Fever” to be covered conditions whose

resultant illnesses are themselves covered as workplace illness under workers’ compensation law. Although no formal guidance has yet been issued as to COVID-19, an endemic workplace in a pandemic may be determined to be a covered illness. This triggers carrier as well as CAL/OSHA reporting requirements and a careful review of all applicable insurance coverages. Where workers enter a customer’s location to perform installations notice requirements should be a part of the process.

## Infection Control Recommendations

- CDC Interim Laboratory Biosafety Guidelines for Handling and Processing Specimens Associated with 2019 Novel Coronavirus (2019-nCoV) – U.S. Centers for Disease Control and Prevention (CDC)

- Interim Healthcare Infection Prevention and Control Recommendations for Patients Under Investigation for 2019 Novel Coronavirus – U.S. Centers for Disease Control and Prevention (CDC)

- California Department of Public Health letters:
  - All Facilities Letter 20-09, Health Update and Interim Guidance – 2019 Novel Coronavirus (2019-nCoV), January 23, 2020

- All Facilities Letter 20-10, Healthcare Facility Resources for the 2019 Novel Coronavirus (2019-nCoV), January 27, 2020
- All Facilities Letter 20-11, Updated 2019 Novel Coronavirus Information (2019-nCoV), Including Patient Under Investigation (PUI) Guidance from the Centers for Disease Control and Prevention (CDC), January 31, 2020

- CDC Interim Laboratory Biosafety Guidelines for Handling and Processing Specimens Associated with 2019 Novel Coronavirus (2019-nCoV).

- CDC webpage on 2019 Novel Coronavirus.

- CDPH webpage on Novel Coronavirus 2019.

- Federal OSHA webpage on 2019 Novel Coronavirus.

- World Health Organization webpage on Novel 2019 Coronavirus.

### III. Coronavirus Disease (COVID-19) – FAQs on laws enforced by the California Labor Commissioner’s Office (<https://www.dir.ca.gov/dlse/2019-Novels-Coronavirus.htm>)

1. Can an employee use California Paid Sick Leave due to

COVID-19 illness?

Yes. If the employee has paid sick leave available, the employer must provide such leave and compensate the employee under California paid sick leave laws.

Paid sick leave can be used for absences due to illness, the diagnosis, care or treatment of an existing health condition or preventative care for the employee or the employee’s family member.

Preventative care may include self-quarantine as a result of potential exposure to COVID-19 if quarantine is recommended by civil authorities. In addition, there may be other situations where an employee may exercise their right to take paid sick leave, or an employer may allow paid sick leave for preventative care. For example, where there has been exposure to COVID-19 or where the worker has traveled to a high risk area.

2. If an employee exhausts sick leave, can other paid leave be used?

Yes, if an employee does not qualify to use paid sick leave, or has exhausted sick leave, other leave may be available. If there is a vacation or paid time off policy, an employee may choose to take such leave and be compensated provided that the terms of the vacation or paid time off policy allows for leave in this circumstance.

3. Can an employer require a worker who is quarantined to exhaust paid sick leave?

The employer cannot require that the worker use paid sick leave; that is the worker’s choice. If the worker decides to use paid sick leave, the employer can require they take a minimum of two hours of paid sick leave per day. The determination of how much paid sick leave will be used per workday is up to the employee.

4. Can an employer require a worker to provide information about recent travel to countries considered

to be high-risk for exposure to the Coronavirus?

Yes. Employers can request that employees inform them if they are planning or have traveled to countries considered by the Centers for Disease Control and Prevention to be high-risk areas for exposure to the coronavirus. However, employees have a right to medical privacy, so the employer cannot inquire into areas of medical privacy.

5. Is an employee entitled to compensation for reporting to work and being sent home?

Yes. Generally, if an employee reports to their regularly scheduled shift but is required to work fewer hours or is sent home, the employee must be compensated for at least two hours or no more than four hours of reporting time pay.

For example, a worker who reports to work for an eight-hour

Continued on Page 26



**HERS Rating**  
**Air & Hydronic Balancing**  
**Permit Expediting & Retrieval**



Certified by:



**COMPLIMENTARY ON-SITE TEAM EDUCATION & 24/7 SELF-SERVE PORTAL!**

**OUR MISSION STATEMENT - Providing unparalleled customer service and rapid care to our valuable customers is what drives us at Rapid Duct Testing.**

**SERVICING CALIFORNIA**

**RATED 5.0 ★★★★★ ON GOOGLE REVIEWS**

**CONTACT:**  
 Tel. 855.NEED.HERS  
[info@rapidducttesting.com](mailto:info@rapidducttesting.com)

**FOLLOW US @RapidDuctTesting**



[www.RapidDuctTesting.com](http://www.RapidDuctTesting.com)

## Indoor Air Quality, Zoning, & Air Distribution Products

### Continental Fan HRV



Continental Fan's HRV Hooded Roof Ventilators are suitable for supply or exhaust applications, and offer aerodynamically efficient performance. Constructed with a heavy-duty welded steel base and aluminum hood with bird screen, these powerful fans are available in diameters from 24" through 60". The adjustable pitch airfoil axial impeller is constructed of spark resistant die cast aluminum, and is factory set for precise performance matching.

HRV roof ventilators are available in either direct drive (HRVD) or belt drive (HRVB) configurations.

#### Features and benefits:

- Supply or exhaust applications
- Direct drive (HRVD) or belt drive (HRVB) arrangements
- Spark resistant, cast aluminum airfoil axial impeller
- Factory set adjustable pitch impeller
- Aerodynamically efficient performance
- Heavy-duty welded steel base
- Baked polyester powder coat finish with a zinc rich primer
- Hinged aluminum hood with galvanized bird screen
- TEFC industrial duty motor
- Direct drive units are easily maintained – no belts or pulleys
- Belt drive units have self-aligning pillow block bearings
- Belt drive units use v-belt drive for low speed operation

**More information:** [www.continentalfan.com](http://www.continentalfan.com).

### Daikin One Ecosystem



With the introduction of the Daikin One ecosystem, Daikin up-ended the status quo in the HVAC market, where HVAC manufacturers have been conservative in adopting Internet-of-Things (IoT) technologies and, until recently, relegated leadership in the smart thermostat category to consumer electronics brands.

At the heart of the Daikin One

ecosystem is the Daikin One+ Smart Thermostat, engineered to communicate seamlessly with all Daikin One ecosystem components. The Daikin One ecosystem includes the Daikin Fit system with communicating furnaces, evaporator coils and air handlers, the Daikin One Premium Air Cleaners, and the new Daikin One Home Air Monitor.

"The Daikin One ecosystem provides an unparalleled, integrated solution for temperature control and air quality. It allows people to visualize the air inside their home and reacts on cues to provide a premium indoor air environment. That's 'Air Intelligence,'" explained Kelly Hearnberger, Vice President of Residential Product Marketing.

The new Daikin One Home Air Monitor device can be easily installed by a Daikin Comfort Pro contractor in the return duct, just before the Daikin One Premium Air Cleaner or other high efficiency filter. It uses the home's Wi-Fi system to connect and communicate with the required Daikin One+ Smart Thermostat.

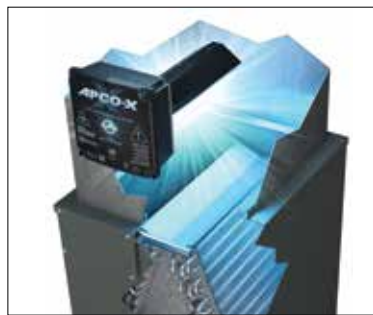
The Daikin One Home Air Monitor detects indoor air quality (IAQ) events and sends information to both the Daikin One+ Smart Thermostat and the optional Daikin One Home App where the IAQ levels of particles and chemicals are visualized. Then, the Daikin One+ Smart Thermostat provides the homeowner with the option to run the Daikin One clean feature which initiates the Daikin Fit filtration system to improve the indoor air quality.

**More information:** [www.daikincomfort.com/go/fit](http://www.daikincomfort.com/go/fit).

### Fresh-Aire UV APCO-X

Fresh-Aire UV, Jupiter, Fla., a leading manufacturer of indoor air quality (IAQ) products, has added the APCO-X to its APCO product line of combination ultraviolet (UV) technology and activated carbon media catalyst air treatment for HVAC systems.

The APCO-X continues the performance tradition of the original APCO, which won the AHR Innovation Award's IAQ category in 2011 and is currently the HVAC industry's most advanced combination UV/activated carbon media air treatment system. It's UL 2998-validated as zero-ozone producing. APCO-X offers many enhancements including a longer (three-year) UV lamp lifecycle for cutting-edge, airstream, evaporator coil, drain pan and interior air



handling unit (AHU) disinfection. APCO-X also features a redesigned V-Twin Cell Matrix incorporating lifetime ceramic cells infused with Fresh-Aire UV's new proprietary Carbon Catalyst for enhanced IAQ performance and a 65-percent increase in adsorption surface area compared to the original APCO system. The substrate's catalyst agent treatment also prevents potential microbial growth. Like the original APCO system, APCO-X comes with a lifetime warranty.

Other improvements include a multi-directional polycarbonate housing and an LED status display for operational status and notifications. APCO-X is a direct drop-in replacement for original APCO owners who want to upgrade to longer UV lamp life, better performance and increased VOC adsorption capabilities.

APCO-X is available as a plenum installation with a second remote three-year lamp for additional coil disinfection. Voltage options include 24 to 32V low voltage or a 110 to 277V line voltage with automatic voltage selection to match building services.

Other APCO-X features include:

- Newly designed ballast and UVC lamp configuration;
- Lifetime warranty and 3-year UV lamp life;
- Rotatable polycarbonate housing with thumbscrews;
- Consumer oriented packaging helps contractors educate consumers about the benefits of UV disinfection and VOC elimination

**More information:** [www.freshaireuv.com](http://www.freshaireuv.com).

### Fujitsu General America VRF DX-Kit



Fujitsu General America has introduced new DX Kits, enabling installers of Fujitsu Airstage VRF systems to incorporate third-party air

handling units and fan coils into a VRF system or connect them to a dedicated Fujitsu VRF outdoor unit as a 1:1 system.

Various control strategies are available such as control by air discharge sensor or return air temperature sensor when connected to air handling unit or fan coil unit. The system can also be controlled via Modbus interface for integration into a BMS system.

The new DX-Kit supports a wide range of capacity classes, from 18,000 to 168,000 BTU/h. Two EEV units can be connected in parallel for up to 168,000 BTU/h large capacity units.

There are a variety of control options to match the application. Central control can be achieved using the Airstage VRF controllers or central management (BMS) controller. External, third-party controls can also be used.

The system provides many inputs and outputs, and is connectable to Airstage VRF series J-III, J-II, J-I, V-II and VR-II.

**More information:** [www.fujitsu-general.com](http://www.fujitsu-general.com).

### Greenheck SP-AP



The latest advance in Greenheck's line of SP commercial ceiling exhaust fans is the modular SP-AP fan that offers exceptional design versatility and energy efficiency. The SP-AP's constant CFM EC motor technology ensures performance set points resulting in improved indoor air quality when application static pressure is higher than expected. The SP-AP is two speed capable (constantly on low speed) with built-in time delay. Three built-in high-speed airflow settings of 50, 80 and 110 cfm meet most common applications. Plug-and-play sensor modules (motion, humidity, CO2, and night light) enable easy customization. A universal duct connector for 4", 5" and 6" ducting along with an install bracket and room side-duct connection allows for simple, quick installation in both new construction and retrofits. Certified as an Energy Star Most Efficient 2019 product, the SP-AP is ideal for multifamily applications such

as condominiums, apartment buildings, hotels, and senior living facilities.

**More information:** [www.greenheck.com](http://www.greenheck.com).

### Lennox MLA



The Lennox MLA Cold Climate Mini-Split Heat Pump offers many features and benefits for the consumer. Lennox's MLA cold climate mini-split heat pump is specifically designed to operate in severe climate conditions by maintaining 100% capacity at 0°F and can operate down to -20°F. No matter how severe the temperature, Lennox ductless heat pumps continue to deliver optimum heating and cooling performance and maximum energy savings. The MLA also offers efficiencies up to 24 SEER (Seasonal Energy Efficiency Ratio) and 11 HSPF (Heating Seasonal Performance Factor) and is available in a broad range of both single and multi-zone sizes.

The MLA unit is compatible with all four Lennox indoor unit styles: high wall, cassette, medium static thin duct and ceiling/floor. Smooth inverter operation creates an environment that's as quiet as it is comfortable. Easy to install, the MLA mini-split heat pump uses a compact indoor and outdoor unit connected through a small hole in your wall. One outdoor unit can support up to five indoor comfort zones to create a customized whole-home heating and cooling solution. Lennox MLA mini-split heat pumps offer an easy, secure installation.

**More information:** [www.lennox.com](http://www.lennox.com).

### Mitsubishi Electric Trane HVAC US SLZ-KF

Mitsubishi Electric Trane HVAC US (METUS), the exclusive provider of Zoned Comfort Solutions® and a leading supplier of Variable Refrigerant Flow (VRF) heating and cooling systems, introduces the SLZ-KF Four-way Ceiling Cassette for residential installations.

The new SLZ-KF Four-way Ceiling Cassette, part of the M-

Indoor Air Quality, Zoning, & Air Distribution Products



Series product line from ME-TUS, is designed to provide the utmost comfort to homeowners. Available in 9,000, 12,000, 15,000 and a newly introduced 18,000 BTUH size.

The unit offers flexible airflow with two, three or four-way vane control which allows homeowners to personalize their settings. If applied with the optional 3D i-see Sensor™, the unit further customizes heating and cooling through the sensor's ability to read a room's thermal profile to calculate the occupancy rate. With the 3D i-see Sensor, direct and indirect airflow settings can be selected to offer 72 different combinations for vane direction and individual vane adjustment. The SLZ-KF automatically adjusts conditioning based on the heat signatures detected in the space and can switch into setback mode when the room is unoccupied. Monitoring a room's occupancy results in even temperature distribution and a more energy-efficient operation for homeowners.

The SLZ-KF Four-way Ceiling Cassette has a Seasonal Energy Efficiency Ratio (SEER) of over 19.8. This is well over the U.S. minimum SEER requirement of 13 and can translate to cost savings on users' heating and cooling bills. Additionally, the SLZ-KF offers a Heating Seasonal Performance Factor (HSPF) rating of 11.2 or more, which is a marked improvement in energy-saving performance as compared to previous models.

In addition to promoting sustainability through energy efficiency, the ceiling cassette helps to better the environment within a home through improved indoor air quality and reduced operating noise. The SLZ-KF Four-way Ceiling Cassette includes an easy-to-clean washable air filter with multi-stage allergen filtration to reduce dust and debris circulation. The unit also uses a new 3D-turbo fan to operate at noise levels as low as 25 dB(A). These features lead to a quieter, more comfortable air-conditioning experience for occupants.

The SLZ-KF also benefits contractors with features for simplified installation. Temporary hanging hooks, captive screws and a larger wrench turning radius on piping contribute to an easier installation process.

More information: [www.mit-subishicomfort.com](http://www.mit-subishicomfort.com).

.....

UV Resources SLX

The SLX high output ultraviolet fixture from UV Resources efficiently and affordably disinfects HVACR airstreams, cooling coils and drain pans to keep them free of infection-causing and efficiency-robbing microorganisms and organic matter.

ASHRAE Research shows that ultraviolet germicidal irradiation (UV-C) kills pathogens on surfaces and in air streams, and also stops the proliferation of infectious or allergenic agents.

One of the HVAC industry's most favored energy- and maintenance-saving technologies, UV-C is known to reliably provide cleaner air by preventing microbial buildup in cooling coils, drain pans and duct surfaces.

The UL-listed per ABQK, high output SLX fixture, which stands for Single Lamp eXterior-mounted fixture, offers facility managers and building owners an option to disinfect air and surfaces that are typically inaccessible from inside the air handler. Additionally, when



applied adjacent to the cooling coil, the high output lamps can deliver improved HVAC heat transfer, decreased energy use, reduced maintenance downtime and damage and improved IAQ.

The SLX lamps provide 360-degrees of high UV-C intensity and easily mount to the exterior of supply, return or exhaust plenums

or ducts, making it ideal for disinfecting air streams in HVACR equipment. Widely used in hospitals and institutional applications, UV-C energy (254nm) also lowers the cost of maintaining and operating HVAC equipment.

Suitable for new systems and as a retrofit product, the SLX can be easily installed in most light-commercial, commercial, industrial, healthcare and manufacturing applications.

Ideal for a full-range of applications including air streams of 33 to 170 degrees F, 100-percent RH, and any velocity, the SLX fixture's high intensity lamp protrudes into the duct, where it can best treat

Continued on Page 21

# COMING SOON

## THE BRAND YOU TRUST NOW WITH HVAC PRODUCTS!



<b>ANAHEIM</b> (714) 632-5250	<b>GLENDALE</b> (818) 500-4935	<b>SACRAMENTO</b> (916) 443-3745	<b>SAN DIEGO</b> (858) 279-9981	<b>SAN LEANDRO</b> (510) 893-6393	<b>S SAN FRANCISCO</b> (650) 583-1194
<b>CORONA</b> (951) 279-2922	<b>MODESTO</b> (209) 523-3288	<b>SAN BERNARDINO</b> (909) 884-1002	<b>SAN FRANCISCO</b> (415) 431-2376	<b>SANTA ROSA</b> (707) 588-5777	<b>STOCKTON</b> (209) 466-3136

[WWW.ARSNET.COM](http://WWW.ARSNET.COM)

Personalize Heat to Match the Space: A Primer for Radiant Ceiling Panels for Public Facilities

By Jim Herrin  
Marley Engineered Products

Keeping occupants of a building or facility warm and comfortable is a year-round priority. Whether the leaves are turning, snow is falling or spring is blooming, maintaining the right temperature is key to ensuring occupants are happy and productive.

Some buildings – such as yoga studios, swimming pools, hospitals and laboratories – require spaces to be kept at specific temperatures to ensure optimal performance for specialized activities. Yogis and swimmers perform better when they are warm, patients heal faster when they are comfortable, and researchers gather more accurate results when temperatures are constant.

For these and other types of retail and office facilities with unique heating demands, radiant ceiling panels are an optimal choice for providing consistent warmth without disrupting activities. The right radiant ceiling panels ensure a high level of comfort, and can be incorporated into the interior’s seamless warmth.

Hidden Advantage

In a yoga studio or hospital, for example, the right interior fur-

nishings and design are vital to creating a positive experience for occupants. Yoga studios are often simplistic in design to help calm those who are practicing, allowing them to focus on their poses and their breath. Similarly, studies have shown that the way a hospital is laid out and decorated has a significant impact on patient care and well-being.

Therefore, the addition of radiant ceiling panels should not alter these well-crafted designs, but rather blend the units into the existing surroundings as effortlessly as possible. Consider radiant ceiling panels specifically designed to act as invisible sources of warmth, able to match the color scheme of a room perfectly with paint or silkscreens so occupants don’t even realize they are present.

But hidden warmth refers to more than just visual customization. Areas such as yoga studios, locker rooms, office conference rooms, hospital ICUs and laboratories also want to keep their rooms quiet and without unnecessary drafts. A heating unit that produces strong air flow can spread dust particles and debris, while loud fans are disruptive to office productivity, quiet meditation and healing.

Radiant ceiling panels with no moving parts – such as fans – create no air movement or excess background noise, and therefore require no additional maintenance. Customizable options from QMark or Berko can be sized and colored to meet specific dimensions and themes, for a quick and silent addition.

Personalized Warmth

A customizable heating unit should not only match the look of a facility, but its specific temperature requirements as well. One of the many benefits of radiant ceiling panels is their ability to provide primary or supplemental comfort. This means a building’s primary source of heat may be enhanced in specific spaces throughout where higher temperatures are required without overheating the rest of the facility.

In a yoga studio, some rooms may need to surpass 100 degrees Fahrenheit, while others can remain at a more standard room temperature. In lobbies, bathrooms and hallways as well, specific rooms may call for higher temperatures to enhance comfortability.

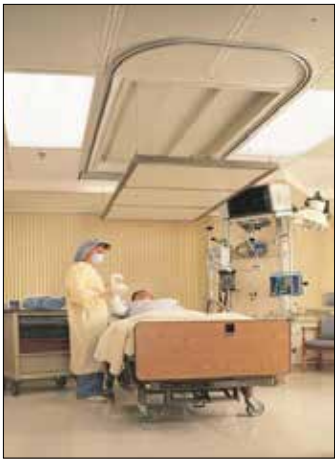
Radiant ceiling panels are able to offset perimeter heat loss from doors, windows or other sources of drafts. Likewise, they can provide primary heat to an entire space such as a yoga

room without altering adjacent spaces’ temperatures. This ensures each space throughout the facility can have the temperature customized for the occupants’ needs.

Materials Matter

To ensure radiant ceiling panels produce silent, invisible heat while keeping occupants safe, they must be made with the right materials. Galvanized or aluminized steel housing provides a stable base to hold the panels. Encapsulated casted element assures the units deliver uniform temperature across the surface, while increasing the panels’ longevity. Stability T-bar grip clips that can guarantee the panels stay intact during heavy storms or earthquakes are also important, as well as the use of fire retardant materials so there is no added risk in an emergency.

Some facilities may require specialized materials such as a stainless steel construction for chlorine storage areas that seal tightly with connectors and silicone. Exterior moisture and condensation do not affect heating panel performance, but water inside the unit can cause it to fail. Panels in locker rooms or swimming pools should be totally sealed with silicone at the factory before shipment to prevent



Buildings like hospitals require spaces to be kept at specific temperatures to ensure optimal performance.

moisture penetration. High-moisture facilities may also opt for seal-tight connectors and conduit, rather than greenfield flexible conduit and straight connectors.

Conclusion

When reviewing radiant ceiling panels for facilities with specific heating demands, consider all the options available as well as features to personalize. Berko and QMark offer customized radiant ceiling panels for a wide array of facilities looking to heat rooms with unique needs and uses. What may work for a laboratory setting may not be ideal for a yoga studio or swimming pool. Be sure to address all the different details of the space to ensure the needs are met and occupants can enjoy hidden, uninterrupted comfort every day.

About the author

Jim Herring is the supervisor of Total Custom Solutions & Technical Services at Marley Engineered Products®, a leading North American designer and manufacturer of reliable comfort heating and ventilation solutions for residential, commercial and institutional buildings. Recognized by contractors, architects, engineers and HVAC professionals for providing a wide range of high-performance, reliable heating and ventilation solutions, Marley Engineered Products’ brands include QMark®, Berko®, Fahrenheit® and Leading Edge®. Marley Engineered Products’ manufacturing operations are based in Bennettsville, S.C., with regional sales representatives located throughout the U.S. and an administrative office in Burr Ridge, Ill.

### Ultra Quiet, Super Efficient Free Cooling

VentCool® uses less energy than traditional air conditioning, reduces overall energy costs, and provides a reliable source for clean, fresh air ventilation throughout the home. VentCool® whole house fans are available in three series: Tahoe, Summit and Vista.

- + Rated and tested to Home Ventilation Institute Standard HVI-916
- + Can Be Used to Comply with Title 24 Part 6
- + Eligible for HERO financing program
- + AirLoc™ Gravity Damper and PowerSeal™ Insulated Motorized Damper models
- + PSC Motor or ECM Motor models

## Whole House Fans

www.fieldcontrols.com/ventcool

Field Controls  
9154 Stellar Court  
Corona, CA 92883  
252.522.3031  
contact@fieldcontrols.com

# TAHOE™ Series

Tahoe Series Whole House Fans feature PSC Motors and AirLoc™ Gravity Dampers.

## VISTA™ Series

Vista Series models feature ECM Motors and PowerSeal™ Insulated Motorized Dampers and Summit Series models feature ECM Motors and AirLoc™ Dampers.

## SUMMIT™ Series

16 ICN APRIL 2020

www.indoorcomfortnews.com

# Industry Education

## Five Recipients Awarded Emerson Helix Innovation Scholarships at the University of Dayton

**Students awarded \$50,000 in scholarships towards their work at The Helix Innovation Center.**

Emerson (NYSE: EMR) announced the five recipients of The Helix Innovation Scholarships at the University of Dayton. Awards were presented to students in engineering, business and the arts with demonstrated skills and enthusiasm in creative thinking, innovation and problem-solving.

Each student was presented a \$10,000 scholarship from Emerson. Emerson will also assign each student a mentor to help guide their interest in innovation and support their education and growth.

The five scholarship recipients were recognized at The Helix Innovation Center on the University of Dayton campus earlier this month.

"Through the mentor relationships, our staff can stay engaged with young, creative minds," said Rajan Rajendran, vice president of system innovation and sustainability for Emerson's Commercial & Residential Solutions platform. "We're excited to partner with the University of Dayton to collaborate, inspire and help grow the future workforce."

The Helix Innovation 2019 Scholarships were awarded to the following University of Dayton students:

- Dejuan A. Marion – Computer Engineering, third year Bedford, Ohio

- Vivian M. Mota – Mechanical Engineering, second year, Melrose Park, Ill.

- Adriana Paonessa – Industrial Engineering, second year Coto Laurel, Puerto Rico

- Leigh Roberts – Pre-Med, fourth year, Noblesville, Ind.

- Mike Sundermeier, Marketing, 4th year, Palos Park, Ill.

For more information, visit [www.Emerson.com](http://www.Emerson.com).

Emerson (NYSE: EMR), headquartered in St. Louis, Missouri (USA), is a global technology and engineering company providing innovative solutions for customers in industrial, commercial, and residential markets. Our Emerson Automation Solutions business helps process, hybrid, and discrete manufacturers maximize production,



The Helix Innovation Scholarship award winners with school officials.

protect personnel and the environment while optimizing their energy and operating costs. Our Emerson Commercial and Residential Solutions business helps ensure human

comfort and health, protect food quality and safety, advance energy efficiency, and create sustainable infrastructure. For more information visit [Emerson.com](http://Emerson.com).

## Industry News

Continued from Page 10

part in working with our team and contractors. He's helped with the success of the product line and has driven additional sales and revenue by offering IAQ solutions."—Andy Calleros, vice president-sales, Johnstone Supply-St. Louis Group, Bridgeton, Mo.

- Hayden James, SWS – "Hayden understands the worlds of the supplier, distributor and contractor. He combines that understanding with a strong work ethic, confident ability to deliver value and direct sales support. Consequently, 2019 was a winning year for Fresh-air UV and Inco in his territory." – Adolfo Perez, vice president of sales & marketing, Inco Distributing Inc., San Antonio, Texas.

- Scott Daugherty, Daugherty Sales, Charlotte, N.C. – "Scott is a valuable asset and one of the best reps we work with, because he goes out of his way to make sure we feel comfortable discussing and selling his products. He goes above and beyond for our contractors, too." – James Francisco, territory manager, Gemaire Distributors, Charlotte, N.C.

"It's pretty simple; Nick took an already well-established territory and worked effectively in gaining lots of new customers and business resulting in an unprecedented growth percentage for new revenue," said Sean Moseley, vice president—residential sales.

For more information, visit [www.freshaireuv.com](http://www.freshaireuv.com).

**GRAND AIRE®**  
Heating & Cooling Products

**Baker®**  
Distributing Company

**GRAND AIRE**  
**HEATING & COOLING**  
**PRODUCTS**



Grandaire systems are manufactured specifically for Baker Distributing Company. All Grandaire equipment is AHRI-Certified and ensures year-round comfort for your customers.

**Available at your local Baker.**  
Visit [Bakerdist.com](http://Bakerdist.com) to find a location near you.

**GRAND AIRE®**  
ADVANTAGE WARRANTY

**1 YEAR**  
unit replacement  
limited warranty

**10 YEAR**  
parts limited warranty  
with timely registration

## Carrier Announces 2020 Hall of Fame Inductees as Two Dealers Recognized for Service

Carrier recently announced the latest dealers to be inducted into its prestigious Dealer Hall of Fame at the 2020 Carrier Factory Authorized Dealer National Meeting in Colorado Springs, Colorado. Established to recognize dealers who adhere to the highest standards in customer service and loyalty to the Carrier brand, this award celebrates years of outstanding work in the heating, ventilating and air conditioning (HVAC) industry, as well as in their communities. Carrier's HVAC business is part of Carrier, a leading global provider of innovative HVAC, refrigeration, fire, security and building automa-

tion technologies.

"This year's inductees embody all of the qualities the Carrier Hall of Fame has come to signify," said Chris Nelson, president, HVAC, Carrier. "They have devoted a lifetime of service to the industry and we're proud to recognize their loyalty to Carrier with their induction into the Hall of Fame."

Carrier annually inducts select contractors to its Dealer Hall of Fame. Nominees must be Carrier Factory Authorized Dealers and have a minimum of 20 years associated with Carrier as their primary brand. This year's inductees into the Hall of Fame are: Robert Dill

of Provincial Heating & Cooling in Winnipeg, Manitoba, Canada, and Dan Hucks of Total Comfort Heat & Air Conditioning, Inc. in Ormond Beach, Florida.

### Robert Dill - Provincial Heating & Cooling

Dill's career in HVAC began as a teenager, in 1983, when he worked part time for Mid-West Heating & Air Conditioning in Winnipeg, Manitoba, Canada, where he had his first exposure to Carrier® equipment. While at Mid-West, Dill serviced and installed myriad Carrier® systems and equipment including the first mid- and high-efficiency Carrier® gas furnaces during the early years of two-stage technology and the innovation of Hybrid Heat®.

In 1996, Dill founded Provincial Heating & Cooling and his business quickly grew from customer and vendor referrals. In 2006, Dill was recognized as a top performer by Carrier Corporation Canada and has been recognized every year since.

In 2007, before a Factory Authorized Dealer (FAD) program existed in Canada, Dill worked with Carrier's leadership team in Indianapolis to create a tailored online training program to meet the same criteria as the U.S. program. Since then, he has earned more than 100 course certificates through relevant training programs.

Provincial Heating & Cooling became a Carrier FAD in 2011 and today, it is the leading Carrier contractor in metropolitan Winnipeg, Manitoba, servicing residential and commercial customers. Dill is very involved in

his community, donating his time and equipment to several local organizations including the Salvation Army and the North End Women's Centre.

### Dan Hucks - Total Comfort Heat & Air Conditioning, Inc.

Hucks started working in the air conditioning trade at a very early age, as his father owned and operated Hucks Air Conditioning and Refrigeration in Deland, Florida, since the 1950's. After graduating high school, he completed an air conditioning program at Mary Carl Vocational Institute before going to work for American Air and Heat in Daytona Beach.

In 1976, he opened Total Comfort Heat & Air Conditioning, operating primarily in Volusia and Flagler counties in Florida. Total Comfort has experienced steady growth during the past 43 years and now has an existing customer base of approximately 40,000.

Throughout the years of operation, Total Comfort has earned numerous industry awards and is acknowledged as a local leader that has been recognized several times for outstanding performance. Hucks is currently a member of the Volusia County Chapter of the Air Conditioning Contractors of America (ACCA) and an Advisory Board member for the Advanced Technology Center of Daytona State University. In addition, Total Comfort has been recognized as the Daytona Beach News Journal's "Reader's Choice" for the best Air Conditioning Contractor for over 19 years.

Community involvement has been a part of Total Comfort's philosophy since the beginning

and over the years, Hucks has sponsored youth athletics and cultural events, participated in local charity projects and events, as well as served on local boards for local government and non-profit organizations.

In addition to the Hall of Fame inductions, Carrier also recognized 354 active dealers with its President's Award, an honor presented annually to Carrier dealers who demonstrate operational excellence, business effectiveness and delivery of the best in service along with cutting-edge technology to its customers.

"The President's Award recognizes each winner's commitment to excellence and Carrier is proud that they are ambassadors of our brand," said Nelson. "Our President's Award recipients are exemplary Factory Authorized Dealers and serve as ideal examples of exceptional companies that serve not just the industry and their customers, but their communities on the whole."

Founded by the inventor of modern air conditioning, Carrier is a world leader in high-technology heating, air-conditioning and refrigeration solutions. Carrier experts provide sustainable solutions, integrating energy-efficient products, building controls and energy services for residential, commercial, retail, transport and food service customers.

Carrier's HVAC business is part of Carrier, a leading global provider of innovative HVAC, refrigeration, fire, security and building automation technologies. For more information, visit [www.carrier.com](http://www.carrier.com) or follow @Carrier on Twitter.

## YORK Donates 100th HVAC System to Veterans Project

Johnson Controls has announced YORK, Ducted Systems leadership, Badger Metals, Inc., and Dave Jones, Inc., along with Building Homes for Heroes, held a Welcome Home ceremony in Madison, Wisc., for U.S. Marine Corps Sergeant Erick Hoefakker and his family. During his years of service, Sergeant Hoefakker suffered several injuries that continue to afflict him to this day. His new home, provided by Building Homes for Heroes, has been modified to address his specific injuries to keep both Sergeant Hoefakker and his family comfortable and safe.

To support Sergeant Hoefakker, Johnson Controls donated a YORK heating and cooling system with a Wi-Fi® capable



U.S. Marine Corps Sergeant Erick Hoefakker and his family.

YORK touch-screen thermostat to better assist him with adjusting his home's temperature without the need to get up. Badger Metals, Inc., donated the HVAC system and Dave Jones Inc., donated the installation services for the veteran's new home.

Justin Patrick, vice president and general manager of residential systems, Johnson Controls, addressed the family and attendees on behalf of YORK to recognize the company's partnership with

Continued on Page 23

### Wireless Power Clamp Meters

#### SC680/SC480

**NEW**

**Packed with HVACR Electrical Measurements**

- Measures power (kW)
- Wireless direct to Job Link® System
- Low Pass Filter for VFD systems
- Molex test leads for small circuitry
- Test 3-phase with two leads
- Safety rated CAT IV - 600V/CAT III - 1000V

714-634-1844

**Fieldpiece**

[www.fieldpiece.com](http://www.fieldpiece.com)

# Case Study

## Texas School District Keeps Classrooms Comfortable with Help of Venstar Thermostats

**Reduced energy costs and six-month return on investment by replacing existing energy management system.**

Venstar announced that the Bruceville-Eddy Independent School District (ISD), located in rural Texas near Waco, is using Venstar's Explorer® SchoolStat® connected Wi-Fi® thermostats as a cost-effective replacement for its old energy management system. In addition to reducing energy costs, the school district estimates that the thermostats paid for themselves in energy savings within six months while keeping classrooms comfortable for students and staff.

"We rely on Venstar's Skyport® Cloud Services to remotely manage and control our thermostats to help ensure consistent, comfortable temperatures in all of our classrooms and buildings, no matter how hot or cold it is outside," said Lowell Hill, director of maintenance for the Bruceville-Eddy ISD.

Hill is responsible for the HVAC management for the district's five campuses. With temperatures ranging from lows in the teens to highs well above 100 degrees, having an efficient and reliable HVAC system is essential. Hill wanted to install new thermostats he could depend on to keep students, teachers and staff comfortable regardless of the weather outside. He wanted to help reduce costs by replacing a complicated energy management system with connected thermostats, and he also wanted to be able to quickly and easily install, commission and remotely manage the thermostats.

With Venstar's Explorer SchoolStat connected Wi-Fi thermostats, Hill can easily commission thermostats in less than a minute. In fact, Venstar's factory settings are already very close to Hill's desired settings, so it made commissioning the thermostats extra fast. Installation is easy, too. He appreciates the ability to make the Explorer thermostats as feature-rich or as simple as needed, depending on the location and usage.

Using Venstar's free Skyport Cloud Services with its free mobile app, Hill can use his mobile phone or desktop computer to remotely access and control the Explorer thermostats located anywhere in the school district. With this free capability, he was able to eliminate the expensive

energy management system that he found to be hard to use and too complicated to use effectively. With Skyport, he can instantly monitor and control the Explorer thermostats via the on-campus Wi-Fi networks or virtually anywhere there is Internet access.

Being able to program the thermostats helps Hill ensure that HVAC systems are not running unnecessarily. Teachers simply push a button when they arrive in the classroom to turn on the heating or cooling, which is programmed to run from 7:30 a.m. to 4:30 p.m. each day. Teachers also have the ability to extend the heating or cooling by pressing the Override button, which extends the occupied settings in 30-minute increments for a total of up to four additional hours. On days when school is not in session, the thermostats are set to the unoccupied setting. Explorer also has an automatic time change for daylight savings time, eliminating the need for Hill to physically change each thermostat twice each year.

The classroom thermostats also are programmed with set-point limiting. They are set to a high of 72 for heat and a low of 74 to cool, allowing teachers the flexibility to adjust the temperature within a couple of degrees. Since the keypads are locked and locking rings are in place, no other changes can be made. If there are complaints about classrooms being too hot or too cold, Hill can remotely use Venstar's Skyport Cloud Services to check the temperatures and respond quickly to any potential problems.

Since the Explorer SchoolStat thermostats were installed, the school district has reduced its hard costs by replacing the energy management system with thermostats. It estimates that the thermostats pay for themselves in energy savings within six months. The thermostats are also helping to extend the life of the HVAC equipment at the schools since notifications are immediately sent to the maintenance director whenever the temperatures are outside preset limits, allowing Hill to solve issues before they become real problems.

Venstar's Explorer SchoolStat thermostats with free Skyport Cloud Services helps ensure consistent, comfortable temperatures in all buildings at the

Bruceville-Eddy ISD, no matter how hot or cold it is outside. Hill is also able to set up sub-user accounts in Skyport, enabling individual principals to have access to the HVAC information for just their campuses.

"I control all of the school district's thermostats from my mobile phone using Venstar's free Skyport Mobile App. It even alerts me if there is a problem, so I can solve it immediately," Hill said.

Venstar Inc. is a leading thermostat and energy management system (EMS) manufacturer, known for providing value to its customers via ease of use and installation, proven cost savings, improved energy efficiency, quality and reliability. Founded in 1992, Venstar is one of the largest thermostat suppliers in the world and designs and produces Venstar-branded products as well as OEM thermostat products for the biggest names in HVAC.



Lowell Hill, director of maintenance for the Bruceville-Eddy ISD, uses Venstar's free Skyport Mobile App to remotely manage and control all of the district's thermostats.

## NEW NATE STUDY GUIDES



### The wait is finally over!

Get ready to be NATE-certified by preparing for the exam with a study guide produced by NATE for the first time ever.

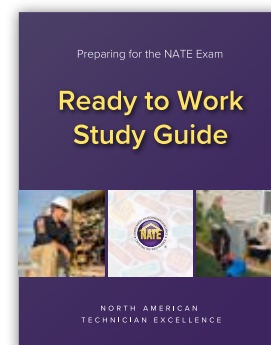
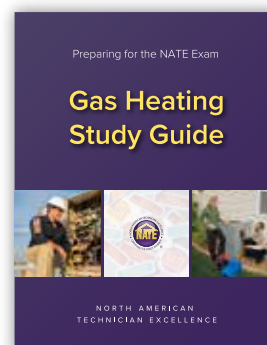
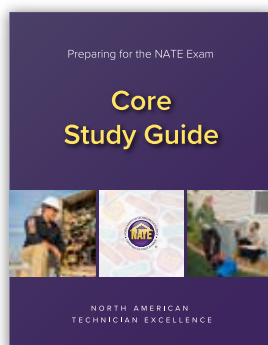
You can now purchase brand new Core, Air Conditioning/Heat Pump and Gas Heating study guides with practice questions and answers.

Print versions of the Ready to Work and HVAC Support Tech guides are also now available in English and Spanish.



- Ready to Work
- HVAC Support
- Gas Heating
- AC/Heat Pump
- Core

To purchase new NATE study guides visit:  
[store.natex.org](https://store.natex.org)



# Product Spotlight

## Honeywell Launches Building Sustainability Solution to Fight Global Energy Consumption

**Machine learning autonomously adjusts building energy settings to deliver energy savings.**

Honeywell announced the launch of Honeywell Forge Energy Optimization, a cloud-based, closed-loop, machine learning solution that continuously studies a building's energy consumption patterns and automatically adjusts to optimal energy saving settings without compromising occupant comfort levels. Honeywell Forge Energy Optimization, a first autonomous building solution focused on decreasing energy consumption, may deliver double-digit energy savings, decrease a building's carbon footprint, and can be implemented without significant upfront capital expenses or changes to a building's current operational processes.

**System Agnostic Optimization and Advancing the Latest Building IoT Technologies**

During a pilot at Hamdan Bin Mohammed Smart University (HBMSU) in Dubai, United Arab Emirates, Honeywell Forge Energy Optimization demonstrated an initial 10 percent energy savings. HBMSU is the first accredited smart university in the UAE and

is known for its technology and innovation programs.

Honeywell Forge Energy Optimization was applied to HBMSU's existing building management system, which uses competitor technology to demonstrate the platform's open architecture and hardware-agnostic capabilities. The additional energy savings is especially significant because HBMSU is regarded as a highly smart, energy efficient building with fully connected lighting, cooling, building management, power, and efficiency control that is optimized based on real-time occupancy. The pilot also uncovered local control issues with the chiller plant and fresh air handling unit that were not adjusting to set points.

"As a smart university, we look to deploy the latest technology across our campus and ensure our buildings are efficient," said Dr. Mansoor Al Awar, Chancellor of Hamdan Bin Mohammed Smart University. "We were pleasantly surprised by the results we saw from Honeywell Forge and its ability to drive further energy savings beyond our achievable optimization with the techniques we have. Our further partnership with Honeywell will help to support the advancement of



During a pilot at Hamdan Bin Mohammed Smart University in Dubai, United Arab Emirates, Honeywell Forge Energy Optimization demonstrated an initial 10 percent energy savings.

artificial intelligence (AI) modeling for building automation and provide our students with first-hand applications of how AI and machine learning (ML) will drive operational efficiencies in buildings. Our goal is to collaborate with leading organizations like Honeywell that support our vision of educating the innovators of tomorrow."

"Buildings aren't static steel and concrete – they're dynamic ecosystems and their energy needs fluctuate based on ever-changing variables like weather and occupancy," said David Trice, vice president and

general manager, Honeywell Connected Buildings. "With Honeywell Forge Energy Optimization, we're evolving building operations far beyond what would be possible even with a robust team of engineers and the rules they code in their building management system. By employing the latest self-learning algorithms coupled with autonomous control, we can help building portfolio owners fine-tune their energy expenditures to drive efficiencies and create more sustainable practices for our customers."

**Achieving Energy Savings Beyond Standard Techniques**

Energy consumption in commercial buildings is a significant issue because these buildings account for more than 36 percent of global final energy consumption and nearly 40 percent of total direct and indirect CO2 emissions. Additionally, HVAC often presents the largest opportunity for energy savings in a commercial building.

Honeywell Forge Energy Optimization autonomously and continually optimizes a building's internal set points across hundreds of assets every 15 minutes to evaluate whether a building's HVAC system is running at peak efficiency. When Honeywell's solution finds a need to make an adjustment, it analyzes factors such as time of day, weather, occupancy levels, and dozens of other data points to determine the optimal settings per building and makes calculated decisions 96 times per 24-hour period for every building in a portfolio, 365 days a year across the system of assets. Repeated results have shown double-digit reductions of HVAC-related consumption while not impacting customer comfort.

Honeywell Forge Energy Optimization is simple for building portfolio owners to deploy with plug-and-play capabilities. No changes to business mechanics are needed and there's no need to rip and replace systems to add Energy Optimization to a building.



### The Healthy Home System

The Healthy Home System is a whole-house indoor air quality solution that addresses the three main allergy triggers: Particulates, Germs, and Gases. The Field Controls Healthy Home System offers the most complete line of UV purification, filtration, PCO technology, and control on the market today. Only our Healthy Home System brings these components together to create air that is **CLEAN, PURE and FRESH™**.

**Better Air For Better Living**

**CLEAN PURE FRESH CONTROL**



Field Controls  
2630 Airport Road  
Kinston, NC 28443  
252.522.3031  
contact@fieldcontrols.com

WWW.FIELDCONTROLS.COM/HEALTHYHOMESYSTEM

Advertise in  
**INDOOR COMFORT NEWS**  
(818) 551-1555

# Troubleshooting

## A Split System with a Low Side Pressure Problem

By Jim Johnson  
Contributing Editor

In this troubleshooting situation a technician has responded to a complaint of “not cooling” on a six-year-old R410A split system that employs an up-flow gas furnace indoor air handler and a condensing unit that sits on the ground, and there is less than 20’ of connecting tubing. An example of this piping configuration is shown in **Figure One**.

A factory installed molecular sieve filter-drier is located inside the condensing unit. Upon the technician’s arrival, no apparent electrical or air flow problem was found that would result in the lack of cooling capacity, necessitating a check of the refrigeration system. Connecting to the low side only, the result was a pressure reading that would be considered far below normal. Based on that information, the technician decided to add refrigerant.

In a short time, the technician notes that while refrigerant is being added, there is no change in the low side gauge pressure reading. It remains the same no matter how much refrigerant is added, which leads to an inspection of the connecting tubing. At the indoor coil, the correct piping of the liquid line near the indoor coil employs a 90-degree ell along with a turn near the fixed bore

metering device. Upon close inspection of this segment of tubing, it’s found to be cold to the touch.

Your troubleshooting question: *After shutting the system down and recovering the refrigerant, what did the technician find in the above-mentioned section of liquid line piping?*

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](mailto: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 Problem

The next step in servicing this equipment is to confirm that 24-volts is present at the coil connections while the ignition system is operating, and replace the gas valve.

The winner of last month’s troubleshooting is:  
**Richard Griffin**

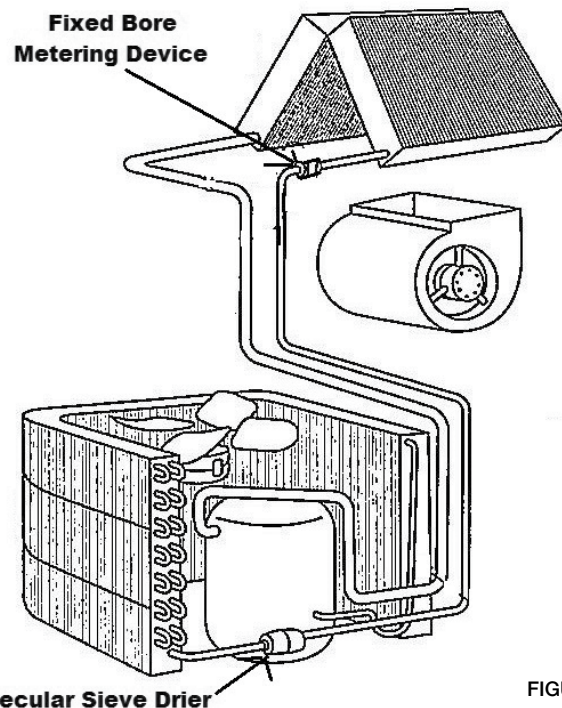


FIGURE 1

## Editorial Focus

Continued from Page 15

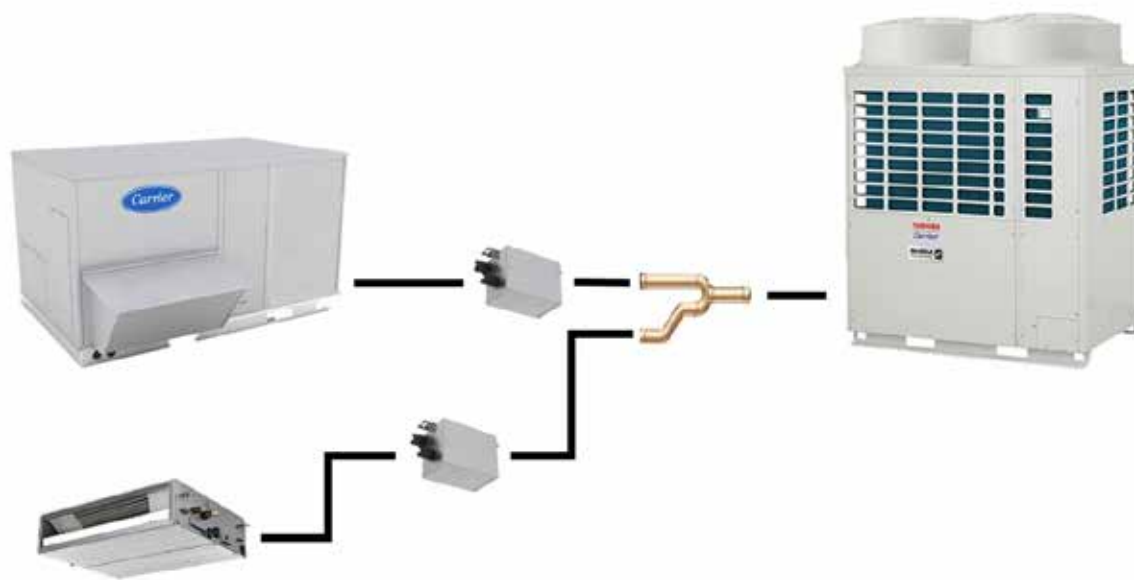
the air stream.

The SLX fixture comes standard with the exclusive EncapsuLamp™ (FEP lamp coating) technology, which protects installers, plenums and air streams from lamp residues such as gas, mercury and glass, should an accidental lamp break occur. In addition, it insulates the lamp’s surface from the fluctuating temperatures of A/C systems, which, according to EncapsuLamp manufacturer UV Resources, can affect lamp output and performance.

The SLX high output fixture is constructed of premium materials with heavy gauge powder coated steel, as well as a waterproof power supply.

**More information:** [www.UVResources.com](http://www.UVResources.com).

## You’ve never seen VRF like this.



# Sigler

There is no substitute.

[INSIDESALESCOMMERCIAL@SIGLERS.COM](mailto:INSIDESALESCOMMERCIAL@SIGLERS.COM)

(866) 218-4109

[SIGLERCOMMERCIAL.COM](http://SIGLERCOMMERCIAL.COM)



# BECOME AN IHACI MEMBER

Looking to  
the future  
of the  
HVAC  
Industry



IHACI MEMBERSHIP GIVES YOU AN EDGE  
**JOIN TODAY!**



Institute of Heating and Air  
Conditioning Industries, Inc.  
454 West Broadway  
Glendale, Ca 91204  
[www.IHACI.org](http://www.IHACI.org)  
[IHACI@IHACI.org](mailto:IHACI@IHACI.org)  
(818) 551-1555  
F: (818) 551-1115

## The Benefits of Membership

- Education and Training
- NATE Certificates/Certification
- NATE CEU's
- Accredited College Courses
- Indoor Comfort News
- Membership Directory
- Group Legal Service
- Legislative Advocacy
- Trade Shows: *Latest in technological advancements/products*
- NEWSbriefs
- Insurance Referrals and Programs
- Special Events
- Unity through Membership Involvement
- Entertainment Packages

Growing Green Technicians
Part 126: Comfort Cooling
System Coil Temperature

By Jim Johnson
Contributing Editor

"Spring has sprung..." is the opening line from a poem about the increase in temperature that occurs with the passing of winter, and it's at this time of year that people will begin setting their air conditioning systems to the cooling mode in response to the warming trend. This is also the time of the year that HVAC technicians may encounter a bump in service requests related to comfort cooling system performance due to a problem with indoor coil temperature.... specifically coil freeze-up.

From the simplest perspective possible, we can employ a temperature/pressure chart when considering this situation. (See Figure One)

When we consider two of the common refrigerants we encounter in comfort cooling systems....R-22 and R-410A....we can identify what can simply be referred to as normal, or if you prefer, optimum performance of a refrigeration system relative to coil temperature. In the R-22 column, for example, focusing on the 40° to 45° listings there, we can see that the operating pressure listings are 68.6 and 76.1 PSIG respectively. And, moving over to the R-410A column, we note that the operating pressure range relative to the 40 and 45 degree listings is between 118 and 130 PSIG.

Next, checking the 55 PSIG listing for R-22, we note that

the corresponding temperature there is 30°F. And, we also find that the pressure in the R-410A column related to the 30-degree listing is 97 PSIG.

And, there we have it. The fundamental processes of thermodynamics and heat transfer demonstrated on a T/P chart explains that if the refrigerant temperature in indoor coil is below freezing, then the moisture that is being removed by the coil that will also be below 32°F won't be liquid running off the coil to the drain pan anymore, it will become ice.

(A side note here....the specific suction gauge temperature for R-22 at 32°F at sea level is 57.73 PSIG and for R-410A, 101.58 PSIG is the corresponding pressure for 32°F.)

With the physics and chemistry of refrigeration system operation fully understood, we can consider some of the causes for coil icing situations in comfort cooling equipment:

- 1. Low Overnight Ambient: When a low outdoor temperature affects the high side operating pressure of a system, it also affects the low side operating pressure, which affects the low side refrigerant temperature, resulting in a coil temperature below 32°F. Another factor to consider here is the customer setting the thermostat too low.
- 2. Insufficient Air Flow: When the refrigerant is moving inside the coil tubing, the rate of heat absorption of the refrigerant has to be a match with the amount of air flow passing across the coil and fins. Ductwork problems such as an undersized return or improper

YORK Donates
Continued from Page 18

Building Homes for Heroes and to honor Sergeant Hoefakker and his family. "This is the 100th home in which Johnson Controls has participated, and it is our privilege to provide systems that will keep the Hoefakker family safe and comfortable," said Patrick. "Purpose led' is one of our core values at Johnson Controls, and this partnership exemplifies why we want to be purposeful in making a difference in the lives of the men and women who sacrifice

for our county." Representatives from Badger Metals Inc. and David Jones Inc., YORK distributors and contractors, attended the ceremony to recognize Sergeant Hoefakker. "It is our privilege to recognize Sergeant Hoefakker for his sacrifice to our country," said Holly Kellesvig, chief operating officer of Dave Jones, Inc. "One of our core values is "Giving Back" and because of Sergeant Hoefakker's honor and bravery, we have provided him with exceptional equipment to ensure his family has a safe and comfortable home." For more information, visit www.york.com.

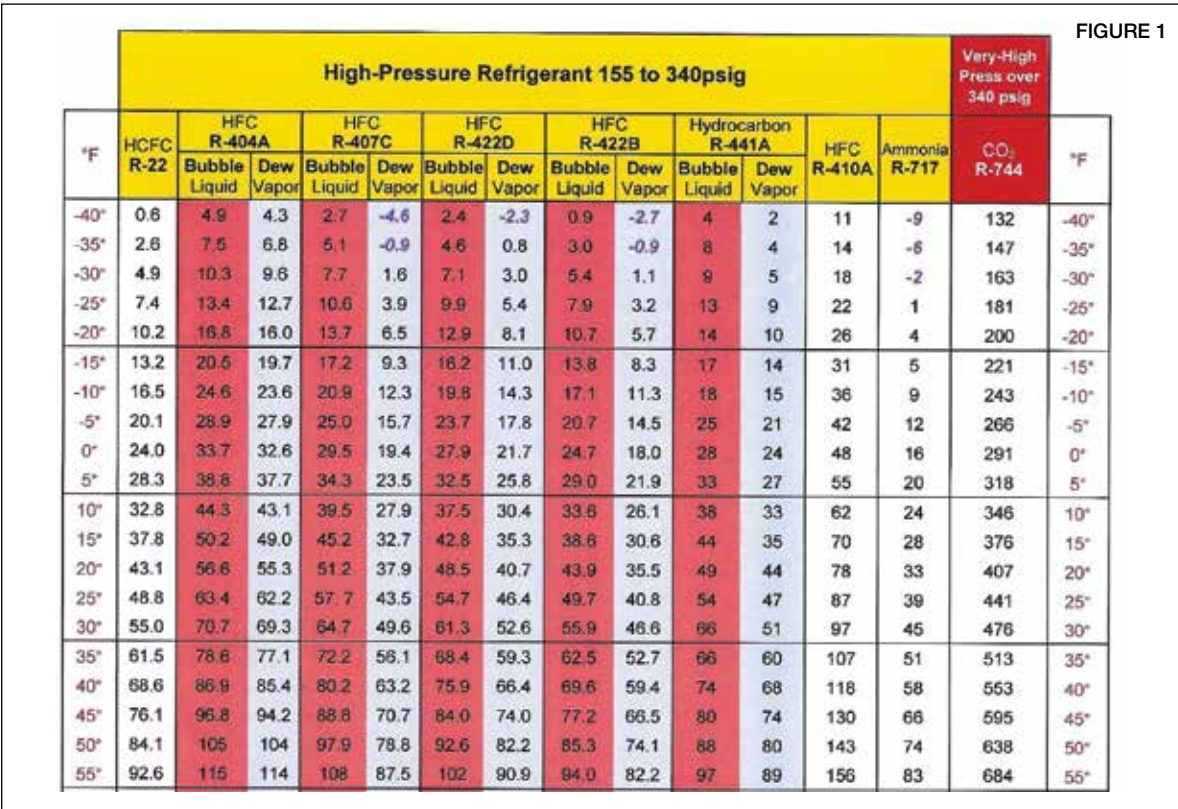


FIGURE 1

transitions in the supply system could contribute to air flow issues.

3. Low Evaporator Load: This is related to #2 above, and can also be a result of a system that is oversized for the conditioned space and/or the sensible and latent heat load in the building.

4. Evaporator Coil Refrigerant Level Low: When taking a green approach to servicing equipment, this one is on our list where it belongs; after the other things we've listed have been checked. Factors to consider here are a problem with the metering device, or a low refrigerant charge. Superheat and subcooling tests are necessary to diagnose the problem in this situation.

Technicians should also consider the possibility that one of the situations alone mentioned above could be the cause of evaporator coil icing. In some cases it could be a combination of two factors that need to be corrected.

WANT TO SAVE ON CRANE COST?

# PRO-LIFT

LIGHTWEIGHT AIRCRAFT ALUMINUM PATENT PENDING

EASY TO OPERATE BATTERY OPERATED

CALL TODAY (972) 939-3231 • WWW.PRO-LIFT.COM

## Duct Leakage Testing?

MAKING GREEN FASTER™

CHEAPER \$ SAFER FASTER

www.VentCapSystems.com

## IHACI, ACCA Send Letter to Assemblyman Bloom in Opposition of AB 3316

Continued from Page 1

conditioning, and refrigeration contractors, the Air Conditioning Contractors of America (ACCA) and the Institute of Heating and Air Conditioning Industries, Inc. (IHACI), headquartered in Glendale, CA, are very concerned with states attempting to phasedown or phaseout hydrofluorocarbon (HFC) refrigerants in stationary air conditioning systems beyond chillers, as the transition will include flammable refrigerants. We strongly oppose a state-by-state approach to refrigerant phasedown programs because it causes confusion in the marketplace.

ACCA is the national association of HVACR contractors, representing more than 60,000 contracting professionals in every state and IHACI represents tens of thousands of HVACR professionals throughout California. ACCA is also responsible for creating the nationally-recognized and industry-endorsed standards to ensure heating, air conditioning, ventilation, and refrigeration (HVACR) systems are properly designed, installed, maintained, and serviced. These standards help ensure our workers, our customers, and the environment are protected.

We understand the desire to phase down the use of HFC refrigerants because of their high global warming potential (GWP). In fact, we support strong and equitable enforcement of federal laws that prohibit the venting of refrigerants and we support the Environmental Protection Agency's (EPA) 608 certification program requiring rigorous testing to purchase and handle refrigerants. ACCA and

IHACI members also support quality installation programs, based on ACCA's ANSI-recognized Quality Installation standard, which, if followed, will help reduce opportunities for refrigerants leaks, ensure HVACR systems operate at their optimal efficiency, and provide healthy indoor air.

Although our associations are committed to contractor excellence, quality installation programs, and protecting the environment, too many HVACR installations are still done incorrectly. The EPA estimates that half of all HVACR systems are not installed correctly: 1) which causes them to consume up to 40 percent more energy than necessary 2) and contributes to opportunities for refrigerant leaks.

To immediately reduce opportunities for HFC refrigerants to enter the atmosphere, policy makers should focus on consumer awareness programs, technical training and education, **and enforcing existing laws that prohibit refrigerant venting and unregistered installers.** This will have a lasting impact on our environment and California's energy consumption and provide consumers with assurances that their HVACR systems are operating as promised on their efficiency labels.

These types of programs could be easily adopted and managed at the state level, and professional contractors would support them. Refrigerant phasedown programs, however, should not be managed at the state or regional level. A national approach is the only responsible way to phasedown HFCs because a state-by-state approach will not guarantee that the industry is prepared to handle the next

generation of refrigerants, which will likely include flammable and mildly flammable products.

**Therefore, we are strongly opposed to Assembly Bill 3316** as introduced by Assemblyman Richard Bloom. This legislation would provide for the direct adoption of CSA/UL 60035-2-40 and ASHRAE Standard 15 into the California Building Codes even though the model mechanical code used by California (the Uniform Mechanical Code (UMC)) rejected the updated standards due to serious safety concerns with the introduction of ASHRAE-designated A2L mildly flammable refrigerants. Additionally, the ASHRAE Standard 15.2P (pending) process, which specifically addresses residential occupancies, is unfinished, which makes California's direct adoption of these standards even more concerning for HVACR professionals.

The introduction of flammable/mildly flammable refrigerants is a significant concern for contractors because there are no training programs in place and the relevant building codes have not been updated. ACCA is working on a flammable refrigerant training program but we estimate that it will take between 3 and 5 years before professional contractors have been fully trained on the handling and use of these products. Industry readiness should be of utmost importance in a state that consistently battles wildfires.

We are not opposed to an HFC phasedown or the introduction of these products, but we do insist that the safety, training, certification protocols, and other issues be addressed. Currently, the relevant ASHRAE and UL Standards are incomplete and have numerous issues that need to be resolved. National model codes must also be updated, but thus far do not allow for the introduction of ASHRAE-designated A2L mildly flammable refrigerants in stationary air conditioning systems beyond chillers. We are actively working in the relevant codes bodies and through ASHRAE on these issues with our industry partners and other stakeholders.

At the federal level, the contracting industry, through ACCA, is also supporting the American Innovation and Manufacturing Act, bipartisan legislation currently pending in the Senate that would grant the EPA the authority to set a national phasedown schedule of HFC refrigerants. This legislation also contains strong safety, training, and

There are too many unanswered questions about the use of the next generation of refrigerants and a hasty state-by-state approach to phasing out HFC refrigerants is dangerous.

certification provisions that the contracting industry helped write and strongly supports.

A national approach to the HFC phasedown is the only responsible way to manage these new refrigerants. There are too many unanswered questions about the use of the next generation of refrigerants and a hasty state-by-state approach to phasing out HFC refrigerants is dangerous for contractors, technicians, consumers, and every building that contains an air conditioning system. By giving the EPA the authority to implement the HFC phaseout, we will have certainty that there will be uniformity in the training, transportation issues, the codes process, and the other areas of concern to the HVACR industry.

As a consumer and policy maker, have you considered how to safely introduce these products into your own home, your children's school, and your district's office buildings? We are certain that you want assurances that the training is available for the people working on these flammable products and that the products are safe. The certainty of this will come from the economies of scale created by a national approach. Several research and testing projects are ongoing. Many of these may not be completed and peer reviewed prior to the legislature vote on AB 3319 or your upcoming Board meeting in July. Approving a draft regulation before all research testing is completed and vetted, and all the safety standards are updated is of concern to ACCA and IHACI members

Additionally, there are unanswered questions about how these products will be transported. Will contractors and distributors be required to have HAZMAT certifications and to stop at rail crossings? Will these products need to be carried on open-air trucks? And how will California manage these issues for contractors who operate across state lines?

ACCA and IHACI are not opposed to state efforts that would require the commercial and industry HVACR sectors to move ahead with HFC phasedowns. However, we are strongly opposed to requiring the residential market to move unless it is done by Congress and there is a uniform national

phasedown.

In general, the commercial and industrial markets in our industry are better regulated, but the residential market is ripe with unqualified people who could cause serious damage if they are mishandling refrigerants. For instance, we know that in California only about 10 percent of HVAC installations in the residential market are permitted. How can California policy makers ensure that there will be a safe transition when about 90 percent of all residential HVAC systems have not been permitted? It is impossible.

ACCA and IHACI are also not opposed to the introduction of A2L refrigerants. Professional contractors will be well trained when ACCA's training is complete, but there will be thousands of unqualified installers still operating in the market. Our fear is that those unqualified installers will mix refrigerants in peoples' homes and cause serious problems for professionals who are called into diagnose problems caused by these individuals. We must do all that we can to ensure bad actors are not able to purchase and handle these products, and our industry is working to give EPA the proper authority to address these very serious issues.

We ask that California policy makers stop attempting to fast track HFC phasedown regulations the contracting industry believes cannot be safely adopted within the time that CARB is proposing and that is required by AB 3316. The HVACR industry is united behind efforts to advance the AIM Act through Congress that would create a safe and manageable HFC phasedown.

Thank you for your attention to our concerns. We stand ready to work with you on efforts that would address installation issues and other opportunities that can reduce refrigerants leaks, refrigerant venting, and efficiency degradations.

Sincerely,  
**Todd Washam**  
ACCA Vice President

**Susie Evans**  
IHACI Executive Vice President

**Special Pricing for HVACR Contractors**  
Walk-in or Reach-in Cooler / Freezer • Parts • Refrigeration • Installation



[www.rudysrefrigeration.com](http://www.rudysrefrigeration.com) 800.499.9424

# New Products

## Nu-Calgon Turbo Tank



**Nu-Calgon** has launched a new battery-operated, portable sprayer designed for use with water to rinse cleaning solutions off of HVAC coils. Called the Turbo Tank™, the sprayer is ideally suited for rinsing wall mini-splits, ceiling cassette units and coils in remote areas. It can also be used with warm water to rinse and deice components.

The Turbo Tank portable rinsing sprayer is designed only for use with clean water, and features a powerful 130 psi water pressure. It includes a heavy-duty rechargeable battery (with 12-volt vehicle adapter), removable 4.5 gallon water tank, durable hose and spray gun, adjustable shoulder strap, two spray nozzles and a 90-degree mini-split spray wand.

Options for the Turbo Tank include an AC/DC power converter and a 39-inch long 90-degree spray wand attachment.

**More information:** [www.nucalgon.com](http://www.nucalgon.com).

• • • • •

## RectorSeal Surge Protectors



**RectorSeal LLC**, Houston, a manufacturer and distributor of quality HVAC/R products, has introduced the RectorSeal HVACR (RSH) Series of surge protective devices (SPD), the industry's only surge protection product line designed specifically for HVAC/R equipment that carries a lifetime warranty. The permanently-installed RSH Series is designed to protect all single phase, 120/240-V air conditioning, heat pumps and ductless mini-split systems (DMSS) from transient over-voltage and natural-cause surges.

The UL 1449 listed RSH Series' inaugural products are the RSH-50 that protects from up to 50,000-amp single surges and up to 10,000-amp repetitive surges; and the RSH-60 that protects from up to 60,000-amp single

surges and 20,000-amp repetitive surges.

Besides a lifetime product warranty, the RSH-50 and RSH-60 also surpass competitors' connected equipment warranty by two years with an unprecedented five-year/\$5,000 and five-year/\$7,500, respectively, if the HVAC equipment is surge-damaged.

The warranty is based on RectorSeal's unique technology. Most SPDs use metal oxide varistors (MOV), which are variable resistors that block voltage surges and re-channels them harmlessly into the ground plain. RectorSeal uses superior and more reliable thermally-fused varistors (TFMOV) and innovatively combines them with a gas discharge tube (GDT)—the HVAC/R industry's first surge protection integration of TFMOVs with GDTs. The TFMOV handles the everyday workload of commonly occurring surges generated within the building by millisecond transient over-voltages in addition to supply-side utility voltage load transfers that repetitively degrade compressor motors, circuit boards and other electrical components. The GDT makes the RSH Series' unrivaled lifetime warranty possible, because it safeguards against TFMOV failures from large catastrophic spikes that can occur from large utility invariances and potential occurrences of lightning-generated electric field damage.

The RSH Series is weather-rated under NEMA 4X and can be installed within minutes to the nearby outdoor disconnect box's knockout access with an included 1/2-inch (12.7-mm) nipple and wired to the contactors. The RSH-50 can also be mounted inside the condenser with an included stainless steel bracket and wired directly.

**More information:** [www.rectorseal.com](http://www.rectorseal.com).

• • • • •

## Taco 4900 Series



**Taco Comfort Solutions'** new 4900 Series magnetic dirt separator provides dual-action dirt separation for closed loop hydronic heating systems

Both hydronic component life-cycle and efficiency are improved with the use of an effective dirt

separation system. Taco's 4900 Series magnetic dirt separator utilizes a powerful, 13,000 gauss magnet in addition to patented PALL ring technology.

The 4900 Series magnetic dirt separator efficiently separates microscopic particles including dirt and magnetite from hydronic fluid with minimal pressure loss. The unit is easily blown down (cleaned) by opening a valve at the bottom of the vessel.

**More information:** [www.Taco-Comfort.com](http://www.Taco-Comfort.com).

• • • • •

## Nortek Air Solutions Niagara Framework

**Nortek Air Solutions (NAS)** is now featuring equipment controllers powered by the Niagara Framework® as part of its custom commercial equipment product offering.

Manufactured by Tridium, Richmond, Va., the Niagara Framework is a leading-edge controls environment



allowing NAS engineers to efficiently deploy complex algorithms and new feature sets across its full product line. When paired with best-in-class Niagara Framework-enabled hardware controllers, new features are possible such as single point of communications via Internet connectivity or Web-serving capabilities. The flexible Niagara Framework provides powerful, scalable computational advantages and offers secure communication options via multiple application programming interfaces. Incorporating these new technologies in NAS custom HVAC units allows for interoperability and connections with a wide variety of devices and sub-systems, such as a facility's

other NAS equipment, but also all popular building management system (BMS) protocols and IoT (Internet of Things) platforms.

While Niagara Framework-enabled platforms are the future for NAS equipment, Nortek will maintain full technical support of its legacy control systems on existing equipment. Scalable architecture makes the integration of custom NAS equipment into larger facilities, multi-building campuses, and large-scale control systems easier than ever. The architecture's powerful feature set enables information aggregation, including real-time data, history, and alarms within a single unified application. The system data and unit operational status can be viewed on a unit mounted HMI or with optional features via a standard Web browser anywhere on the globe in either raw text or a rich graphical format.

**More information:** [www.nortekair.com](http://www.nortekair.com).

# HARD-WORKING YET EASY ON THE PLANET

## Ruud® Achiever® Series Ultra Low NOx 80% AFUE R801T Upflow Gas Furnace

The Ruud R801T was the first furnace to meet California's South Coast Air Quality Management District Rule 1111 emissions mandate. Its 65% reduction in NOx emissions makes it eligible for the Clean Air Furnace Rebate Program.



Ruud-Exclusive  
**PlusOne® Ignition System**



Industry-First  
**PlusOne® Diagnostics**

Learn more:

[Ruud.com/UltraLowNOx](http://Ruud.com/UltraLowNOx)

<sup>1</sup> The Ruud Ultra Low NOx R801T Upflow Gas Furnace was the first unit certified to meet California's South Coast Air Quality Management District Rule 1111 mandate to reduce NOx emissions from 40 ng/J to 14 ng/J.



**FIRST UNIT  
CERTIFIED**  
to meet SCAQMD  
Rule 1111 emission  
standards<sup>1</sup>



IN MEMORY OF JEFF CLARK

A long-time, valuable member of the American Refrigeration Supplies, Inc. (ARS) Employee family passed away on February 19.

**Jeff Clark** was tragically killed in a motorcycle accident while commuting home after work. Jeff was with ARS for over 18 years and joined the company as the Branch Manager for their San Bernardino, California branch in 2001. He moved into an outside sales role for the refrigeration business in 2017 and just recently assumed the newly created role of Construction Sales Coordinator for the San Bernardino office.

Prior to joining ARS, Jeff

worked for Allied Refrigeration, Hussmann Corporation and ran his own refrigeration contracting business. Jeff was respected and loved by all his customers and ARS co-workers.

He is survived by his wife, Debbie Clark, children Chris and Jessica (Matthew) and grandson Caden.



MICHAEL LEBLANC

**Michael LeBlanc** has been selected to lead Aquatherm's newly created operations department. LeBlanc, who joined Aquatherm in 2014, had been the company's regional sales manager in the

Southeast Region. He brings to this position more than three decades of mechanical, plumbing, project management, and rep experience.

The new operations department consolidates Aquatherm's estimation, drafting, fabrication, fitting production, shipping, and inside sales functions. As vice president of operations, LeBlanc joins the company's core management team and he will report directly to CEO Jordan Hardy.

"These changes ensure that we are on the path of continuing to meet and exceed the needs of our customers, which is at the core of everything we do," Hardy said. "In addition, these changes will help strengthen our internal alignment and improve our culture of excellence as a company moving forward."

LeBlanc will relocate to Aquatherm's Lindon headquarters.

To replace LeBlanc, Fred Esleck has been promoted from area manager to regional sales manager of the newly defined Southeast region, which includes Florida,

Georgia, Alabama, Tennessee, Mississippi, and Southeast Louisiana (Baton Rouge and east).

In addition, Aquatherm is pleased to welcome Dave Moore as regional sales manager for the Northwest region. Moore's territory encompasses Northern California, Oregon, Washington, Alaska, Montana, Wyoming, and Northern Nevada.

Moore had been an Aquatherm product specialist with Elmco & Associates and has been actively involved with Aquatherm in the Northern California market for several years.

"We are fortunate to have a wealth of talented people who are well-versed in all things Aquatherm and committed to providing excellent customer service," said Glen Miller, vice president of sales.

Radiant Plumbing & Air Conditioning has hired industry veteran, licensed plumber, keynote speaker and former Nexstar Network director of training **Keith**



KEITH MERCURIO

**Mercurio** as director of leadership development. Mercurio spent the past eight years at Nexstar Network, a business growth, best-practice and training network that helps independent residential service contractors improve their businesses and lives.

During his tenure at Nexstar, Mercurio built and refined more than 20 transformational training programs ranging from sales to leadership to personal growth and communication. In addition, he oversaw the development of a 15-person training staff, conducting more than 120 events per year and training 7,000 people

Coronavirus

Continued from Page 13

shift and only works for one hour must receive four hours of pay, one for the hour worked and three as reporting time pay so that the worker receives pay for at least half of the expected eight-hour shift. An exception to reporting time pay is where operations cannot commence or continue when recommended by civil authorities. Additional information on reporting time pay is posted online.

6. *If an employee is exempt, are they entitled to a full week's salary for work interruptions due to a shut-down of operations?*

Federal regulations require that an exempt employee (paid at least the minimum required salary) who performs any work during the week must be paid their full weekly salary if they do not work the full week because the employer failed to make work available.

An exempt employee who performs no work at all during a week may have their weekly salary reduced.

Deductions from salary for absences of less than a full day for personal reasons or for sickness are not permitted. If an exempt employee works any portion of a day, there can be no deduction from salary for a partial day absence for personal or medical reasons.

Federal regulations allow partial day deductions from an employee's

sick leave bank so that the employee is paid for their sick time by using their accrued sick leave. If an exempt employee has not yet accrued any sick leave or has exhausted all of their sick leave balance, there can be no salary deduction for a partial day absence.

Deductions from salary may also be made if the exempt employee is absent from work for a full day or more for personal reasons other than sickness and accident, so long as work was available for the employee, had they chosen to work.

7. *What protections does an employee have if they suffer retaliation for using their paid sick leave?*

The Labor Commissioner's Office enforces several laws that protect workers from retaliation if they suffer adverse action for exercising their labor rights, such as using paid sick leave. Additional information on how to file a retaliation or discrimination complaint is posted online.

Given the evolving nature of this unprecedented health emergency, if you choose not to use available paid sick leave, or have no other paid leave available, employees and employers should discuss what unpaid leave options may be provided.

8. *If I am a party in an action filed with the Labor Commissioner's Office, can I seek an accommodation to participate remotely due to the Coronavirus?*

Yes. Requests to participate remotely should be emailed to the

IV. An Overview Of Application of leave and Benefit Laws – Vacation/Sick Time/PTO and CFRA/FMLA/PDL/NPLA A Work in Progress			
	PTO	VACATION	SICK
Pregnancy	Allow	Allow	Require
CFRA – Self	Require*	Require*	Require*
CFRA – Others	Require*	Require*	Allow
FMLA – Self	Require (except if on workers' comp)	Require (except if on workers' comp)	Require (except if on workers' comp)
FMLA – Others	Require	Require	Require
NPLA	Allow	Require*	Require*

\*If an employee is receiving workers' compensation, paid family leave, or state disability insurance benefits, the employer may not require use of PTO, vacation, or sick leave during CFRA/NPLA leave. It is anticipated a virus pandemic in a workplace will be considered a workplace illness invoking workers' compensation coverage, as was the case with Valley Fever. Accordingly, it is imperative to contact your carrier when an incident arises.

district office in which the claim has been filed. These requests will be evaluated on a case-by-case basis. A full listing of Labor Commissioner's Office locations including email addresses is posted online.

IV. See chart above

V. COVID-19 or Other Public Health Emergencies and the Family and Medical Leave Act Questions and Answers from the DOL

See <https://www.dol.gov/agencies/whd/fmla/pandemic>

VI. Conclusion and the Future

All topics covered here are evolving in their content. As of this writing, a federal national emergency has been declared in the United States. Such a declaration permits invocation of the Stafford Act (<https://www.fema.gov/media-library/assets/documents/15271>) The California Governor's Emergency Order is a useful model of

local entity response. (See <https://www.gov.ca.gov/2020/03/04/governor-newsom-declares-state-of-emergency-to-help-state-prepare-for-broader-spread-of-covid-19/>)

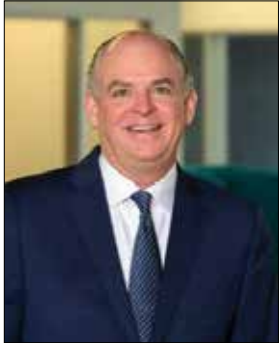
The authors are tracking the above issues on an ongoing basis. Because human decisions involve our economy, we have prepared analyses on the application of force majeure to contractual relations. These resources are available upon request as well.

# Indoor People

annually.

As director of leadership development, Mercurio will be involved in training and helping refine processes with the Radiant team to help uncork a whole new level of growth.

• • • • •



MICHAEL ELLIS

Johnson Controls International plc has named **Michael Ellis** as executive vice president and chief customer & digital officer. In this newly created role, Ellis will serve as an officer of the company and oversee Johnson Controls digital strategy, innovation, and execution, working closely with customers to drive new growth and value opportunities across the globe.

Ellis most recently served as global managing director of Accenture, where he advised Fortune 1000 CEOs in developing digital strategy and innovation for new transformative revenue opportunities and industry leadership. Prior to joining Accenture as an executive in 2018, Ellis was president, chairman and CEO of ForgeRock, a global digital security software company. Earlier in his career, Ellis served in leadership roles at SAP, Oracle, i2 Technologies, and Apple Inc.

"Mike brings to Johnson

Controls a wealth of experience in helping companies navigate the intersection of digital innovation and giving customers the products and solutions they need to succeed," said George Oliver, chairman and CEO, Johnson Controls.

Ellis received two bachelor's degrees from the University of Minnesota and has participated in executive programs at the Kellogg School of Business at Northwestern University and the Tuck School of Business at Dartmouth College.

• • • • •

**Drew Amos** has been hired as the new Regional Sales Manager for WAGO in Southern California. Drew is a graduate of Humboldt State University where he earned his Bachelor's degree in Sociology.

Amos' extensive sales background makes him an asset to the WAGO team. He started as an inside sales rep for Moxa Americas, before moving to Ecolab as a Territory manager. The last few years were once again spent with Moxa, this time as a Regional Sales Manager.

Born and raised in Southern California, Amos says he is looking forward to being closer to and working with his new clients.



DREW AMOS



TIM FISHER

Heating, Air-conditioning & Refrigeration Distributors International (HARDI) announced the addition of **Tim Fisher**, team leader of Market Intelligence.

Before HARDI, Fisher served as the Director of Government & External Affairs for an Ohio-based association, the Council for Developmental Finance Agencies. He studied Economics as an undergraduate, has an M.A. in Latin American Studies, and is currently pursuing his MBA at the Ohio State University. Fisher is also advanced in the Spanish language, allowing a deeper relationship with HARDI Mexico members.

"Tim has a passion and an aptitude for market research and will be the perfect addition to our team as we seek to double down on our market intelligence efforts," said HARDI executive vice president, Emily Saving. "Additionally, his keen ability to cultivate relationships with member companies will be a great asset to our growing team."

The team leader of Market Intelligence is a new position for the organization and plays a leadership role in helping HARDI achieve its vision to provide economic analysis, forecasting, and market research that allows HARDI members to realize a competitive advantage.

Fisher has the skills and experience that will allow him to

become an expert in the HVACR distribution industry. Fisher will be performing analysis of members' business themes and trends and will be leading market research activities and developing a unique forecasting strategy of the HVACR industry to help members make smarter business decisions.

• • • • •

RGF is pleased to announce **Kelly Kendrick** as the new Marketing Director. Kelly has been working in and around RGF for nearly 4 years. With more than 15 years of business and consumer marketing experience, she is passionate about creating new ways of promoting RGF's ground-breaking technologies and



KELLY KENDRICK

innovative business strategies and manufacturing processes.

"Once again we are poised for record breaking growth in 2019 and we need to maximize our marketing to make this happen." Ron Fink, RGF President/CEO.

## Solar Requirement

Continued from Page 1

solutions is a hallmark of California's innovation economy and key to meeting our goals for clean energy, climate, and resilience."

The Energy Code provides for Commissioners to consider approving community solar programs based on the following six requirements:

1. Enforcement - The solar resource must exist at the time the home is permitted and the applicant must work in coordination with the building department for review and enforcement

2. Energy Performance - The energy savings must match that of rooftop solar

3. Dedicated Energy Savings

- The generated solar must be dedicated to the building

4. Durability - Proposed facilities must be operational for 20 years

5. Additionality - Savings cannot be counted to meet other utility renewable requirements

6. Accountability and Record-keeping - Applicant must keep records and make them accessible for 20 years

Commissioners voted unanimously that the Neighborhood SolarShares Program meets each of the six requirements.

In addition, the program guarantees resources that supply power to participating homes will be located in SMUD service territory; renewable power sources will be new and 20 megawatts or

less; and assistance to developers and builders to facilitate offering a point of purchase choice option for homebuyers. SMUD also states that participants will see charges and receive credits on their bill at a guaranteed annual net benefit of \$10 per kilowatt per year.

More details are available in SMUD's revised application and CEC staff review.

The California Energy Commission is leading the state to a 100 percent clean energy future. It has seven core responsibilities: developing renewable energy, transforming transportation, increasing energy efficiency, investing in energy innovation, advancing state energy policy, certifying thermal power plants, and preparing for energy emergencies.



**CalCERTS IS ALWAYS LOOKING FOR QUALIFIED PEOPLE IN HVAC RELATED FIELDS.**

If you are interested in HERS, HVAC, Building Inspections, Building Standards/Title 24, Building Performance or Energy Modeling we want to hear from you!

Send your resume to [jobs@calcerts.com](mailto:jobs@calcerts.com)

Connect with CalCERTS [f](https://www.facebook.com/calcerts) [i](https://www.instagram.com/calcerts) [in](https://www.linkedin.com/company/calcerts)

**31 Natoma Street, Ste. 120, Folsom, CA 95630**  
**[www.calcerts.com](http://www.calcerts.com) | 916-985-3400**

# INSTITUTE OF HEATING AND AIR CONDITIONING

# 2020 TRAINING

CALIFORNIA QUALITY INSTALLATION, QUALITY MAINTENANCE AND QUALITY SERVICE

## SOCALGAS, ERC, DOWNEY

### APRIL

System Diagnostics Module  
(Four-Night Class, Cont. From Mar.)

Instructor: John Dalton

Wed., April 1 – Part 3 • **POSTPONED**

Thurs., April 2 – Part 4 • **POSTPONED**

### MAY

CAQI/QM/QS System Performance Module  
(Four-Night Class)

Instructors: John Dalton / Dave Highland

Wed., May 20 – Part 1

Thurs., May 21 – Part 2

Wed., May 27 – Part 3

Thurs., May 28 – Part 4

### JUNE

Chiller Module

(Two-Night Class)

Instructor: John Dalton

Wed., June 10 – Part 1

Thurs., June 11 – Part 2

Commercial Cooling Tower Module  
(Two-Night Class)

Instructor: John Dalton

Wed., June 17 – Part 1

Thurs., June 18 – Part 2

### SEPTEMBER

CAQI/QM/QS Air Distribution Module  
(Four-Night Class)

Instructors: Mike Griffin / Dave Highland

Wed., Sept. 2 – Part 1

Thurs., Sept. 3 – Part 2

Wed., Sept. 9 – Part 3

Thurs., Sept. 10 – Part 4

### OCTOBER

NATE Training

(Four-Night Class)

Instructor: John Dalton

Wed., Oct. 21 – Part 1

Thurs., Oct. 22 – Part 2

Wed., Oct. 28 – Part 3

Thurs., Oct. 29 – Part 4

Sat., Oct. 31 - NATE Exam, 7:30 a.m.

## SoCA EDISON, ENERGY EDUCATION CENTER, IRWINDALE

### APRIL

CAQI/QM/QS Air Distribution Module  
(Four-Night Class)

Instructors: Mike Griffin / Jayme Carden

Wed., April 1 – Part 1 • **POSTPONED**

Thurs., April 2 – Part 2 • **POSTPONED**

Wed., April 8 – Part 3 • **POSTPONED**

Thurs., April 9 – Part 4 • **POSTPONED**

### MAY

CAQI/QM/QS AC/HP Refrigeration Module  
(Four-Night Class)

Instructor: John Dalton

Wed., May 6 – Part 1

Thurs., May 7 – Part 2

Wed., May 13 – Part 3

Thurs., May 14 – Part 4

### JUNE

NATE Training

(Four-Night Class)

Instructor: Mike Griffin

Wed., June 3 – Part 1

Thurs., June 4 – Part 2

Wed., June 10 – Part 3

Thurs., June 11 – Part 4

Sat., Jun. 13 - NATE Exam, 7:30 a.m.

### SEPTEMBER

System Diagnostics Module  
(Four-Night Class)

Instructor: John Dalton

Wed., Sept. 2 – Part 1

Thurs., Sept. 3 – Part 2

Wed., Sept. 9 – Part 3

Thurs., Sept. 10 – Part 4

### OCTOBER

Chiller Module

(Two-Night Class)

Instructor: John Dalton

Wed., Oct. 7 – Part 1

Thurs., Oct. 8 – Part 2

Commercial Cooling Tower Module  
(Two-Night Class)

Instructor: John Dalton

Wed., Oct. 14 – Part 1

Thurs., Oct. 15 – Part 2

### NOVEMBER

Non-Residential Acceptance Testing  
(Two-Night Class)

Instructor: Bill Brown

Wed., Nov. 4 – Part 1

Thurs., Nov. 5 – Part 2

2019 Non-Residential Title 24  
(Two-Night Class)

Instructors: Mike Griffin / Jayme Carden

Wed., Nov. 18 – Part 1

Thurs., Nov. 19 – Part 2

## PACIFIC GAS AND ELECTRIC ENERGY TRAINING CENTER, STOCKTON

### APRIL

CAQI/QM/QS Air Distribution Module  
(Four-Night Class)

Instructor: John Dalton

Wed., April 1 – Part 1 • **POSTPONED**

Thurs., April 2 – Part 2 • **POSTPONED**

Wed., April 8 – Part 3 • **POSTPONED**

Thurs., April 9 – Part 4 • **POSTPONED**

### MAY

CAQI/QM/QS Air Distribution Module  
(Four-Night Class)

Instructors: Mike Griffin / Jayme Carden

Wed., May 6 – Part 1

Thurs., May 7 – Part 2

Wed., May 13 – Part 3

Thurs., May 14 – Part 4

### JUNE

CAQI/QM/QS AC/HP Refrigeration Module  
(Four-Night Class)

Instructor: John Dalton

Wed., June 3 – Part 1

Thurs., June 4 – Part 2

Wed., June 10 – Part 3

Thurs., June 11 – Part 4

Sat., Jun. 13 - NATE Exam, 7:30 a.m.

### SEPTEMBER

System Diagnostics Module  
(Four-Night Class)

Instructor: John Dalton

Wed., Sept. 2 – Part 1

Thurs., Sept. 3 – Part 2

Wed., Sept. 9 – Part 3

Thurs., Sept. 10 – Part 4

### OCTOBER

Chiller Module

(Two-Night Class)

Instructor: John Dalton

Wed., Oct. 7 – Part 1

Thurs., Oct. 8 – Part 2

Commercial Cooling Tower Module  
(Two-Night Class)

Instructors: Mike Griffin / Jayme Carden

Wed., Oct. 14 – Part 1

Thurs., Oct. 15 – Part 2

### NOVEMBER

Non-Residential Acceptance Testing  
(Two-Night Class)

Instructor: Bill Brown

Wed., Nov. 4 – Part 1

Thurs., Nov. 5 – Part 2

2019 Non-Residential Title 24  
(Two-Night Class)

Instructors: Mike Griffin / Jayme Carden

Wed., Nov. 18 – Part 1

Thurs., Nov. 19 – Part 2

**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.

Southern California Gas Company  
Energy Resource Center (ERC)  
9240 Firestone Boulevard  
Downey, CA 90241-5388  
seminars.socalgas.com

Southern California Edison Energy  
Education Center - Irwindale  
6090 No. Irwindale Avenue  
Irwindale, CA 91702  
www.sce.com/workshops

Southern California Gas Company  
9400 Oakdale Avenue  
Chatsworth, CA 91311  
seminars.socalgas.com

Southern California Edison Energy Education Center  
4175 S. Las Posas  
Tulare, CA 91327  
www.sce.com/workshops

Registration / Dinner 5:30pm – Class 6:00pm • 2020 Training Class

Register at [www.ihaci.org](http://www.ihaci.org) (Training)

CONDITIONING INDUSTRIES, INC.  PRESENTS

# CLASS SCHEDULE

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

**PACIFIC GAS AND ELECTRIC COMPANY,  
ENERGY TRAINING CENTER, STOCKTON**

**SoCA EDISON,  
ENERGY EDUCATION CENTER, TULARE**

**SOCALGAS, CHATSWORTH**

## APRIL

Electrical Module  
(Four-Night Class)

Instructor: Jeff Painter

Part 1 • **POSTPONED**

Part 2 • **POSTPONED**

Part 3 • **POSTPONED**

Part 4 • **POSTPONED**

## MAY

Air Distribution Module  
(Four-Night Class)

Instructors: Mike Griffin / Jayme Carden

Part 1 - May 20

Part 2 - May 21

Part 3 - May 27

Part 4 - May 28

## JUNE

Refrigeration Module  
(Four-Night Class)

Instructor: Jeff Painter

Part 3 - June 1

Part 4 - June 2

Part 10 - June 3

Part 11 - June 4

## SEPTEMBER

System Diagnostics Module  
(Four-Night Class)

Instructor: Mike Griffin

Part 1 - Sept. 16

Part 2 - Sept. 17

Part 3 - Sept. 23

Part 4 - Sept. 24

## OCTOBER

System Performance Module  
(Four-Night Class)

Instructors: Mike Griffin / Jayme Carden

Part 7 - Oct. 7

Part 8 - Oct. 8

Part 14 - Oct. 14

Part 15 - Oct. 15

## NOVEMBER

Non-Residential Title 24

Instructor: Jeff Painter

Part 4 - Nov. 4

Part 5 - Nov. 5

Part 18 - Nov. 18

Part 19 - Nov. 19

NATE Exam, 7:30 a.m.

## APRIL

CAQI/QM/QS AC/HP Refrigeration Module  
(Four-Night Class)

Instructor: Mitch Bailey

Wed., April 15 - Part 1 • **POSTPONED**

Thurs., April 16 - Part 2 • **POSTPONED**

Wed., April 22 - Part 3 • **POSTPONED**

Thurs., April 23 - Part 4 • **POSTPONED**

## MAY

System Diagnostics Module  
(Four-Night Class)

Instructor: Mitch Bailey

Wed., May 13 - Part 1

Thurs., May 14 - Part 2

Wed., May 20 - Part 3

Thurs., May 21 - Part 4

## JUNE

CAQI/QM/QS System Performance Module  
(Four-Night Class)

Instructors: Mike Griffin / Jayme Carden

Tues., June 9 - Part 1

Wed., June 10 - Part 2

Tues., June 16 - Part 3

Wed., June 17 - Part 4

## SEPTEMBER

Chiller Module

(Two-Night Class)

Instructor: Mitch Bailey

Tues., Sept. 22 - Part 1

Wed., Sept. 23 - Part 2

Commercial Cooling Tower Module  
(Two-Night Class)

Instructor: Mitch Bailey

Tues., Sept. 29 - Part 1

Wed., Sept. 30 - Part 2

## OCTOBER

 NATE Training

(Four-Night Class)

Instructor: Mitch Bailey

Wed., Oct. 14 - Part 1

Thurs., Oct. 15 - Part 2

Wed., Oct. 21 - Part 3

Thurs., Oct. 22 - Part 4

Sat., Oct. 24 - NATE Exam, 7:30 a.m.

## NOVEMBER

2019 Non-Residential Title 24

(Two-Night Class)

Instructors: Mike Griffin / Jayme Carden

Tues., Nov. 3 - Part 1

Wed., Nov. 4 - Part 2

Non-Residential Acceptance Testing  
(Two-Night Class)

Instructor: Bill Brown

Tues., Nov. 17 - Part 1

Wed., Nov. 18 - Part 2

## APRIL

CAQI/QM/QS AC/HP Refrigeration Module  
(Four-Night Class)

Instructor: Mike Griffin

Wed., April 22 - Part 1 • **POSTPONED**

Thurs., April 23 - Part 2 • **POSTPONED**

Wed., April 29 - Part 3 • **POSTPONED**

Thurs., April 30 - Part 4 • **POSTPONED**

**SAN DIEGO GAS & ELECTRIC,  
ENERGY INNOVATION CENTER (EIC)**

## APRIL

CAQI/QM/QS Electrical Module  
(Four-Night Class)

Instructor: John Dalton

Wed., Apr. 15 - Part 1 • **WEBINAR**

Thurs., Apr. 16 - Part 2 • **WEBINAR**

Wed., Apr. 22 - Part 3 • **WEBINAR**

Thurs., Apr. 23 - Part 4 • **WEBINAR**

## MAY

CAQI/QM/QS Air Distribution Module  
(Four-Night Class)

Instructors: Mike Griffin / Jayme Carden

Wed., May 6 - Part 1

Thurs., May 7 - Part 2

Wed., May 13 - Part 3

Thurs., May 14 - Part 4

## JUNE

CAQI/QM/QS AC/HP Refrigeration Module  
(Four-Night Class)

Instructor: Dave Highland

Wed., June 3 - Part 1

Thurs., June 4 - Part 2

Wed., June 10 - Part 3

Thurs., June 11 - Part 4

## SEPTEMBER

System Diagnostics Module  
(Four-Night Class)

Instructor: Dave Highland

Wed., Sept. 2 - Part 1

Thurs., Sept. 3 - Part 2

Wed., Sept. 9 - Part 3

Thurs., Sept. 10 - Part 4

## OCTOBER

 NATE Training

(Four-Night Class)

Instructor: Dave Highland

Wed., Oct. 7 - Part 1

Thurs., Oct. 8 - Part 2

Wed., Oct. 14 - Part 3

Thurs., Oct. 15 - Part 4

Sat., Oct. 17 - NATE Exam, 8:00 a.m.

## LOCATIONS

Southern California Edison  
Energy Training Center - Stockton  
3136 Boeing Way  
Stockton, CA 95206  
www.pge.com

Pacific Gas and Electric Company  
Energy Training Center - Stockton  
3136 Boeing Way  
Stockton, CA 95206  
www.pge.com

San Diego Gas & Electric  
Energy Innovation Center (EIC)  
4760 Clairemont Mesa Blvd.  
San Diego, CA 92117  
seminars.sdge.com

Schedule (Subject to Change)

(Training)

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



Help Wanted



**Institute of Heating and Air Conditioning Industries, Inc. (IHACI) Commercial HVAC Instructors Wanted**

IHACI is looking for qualified Commercial HVAC/R/SM instructors to join its education team. These are evening classes (typically 4 nights/4 hrs. per night.) Locations: Chatsworth, Downey, Irwindale, San Diego, Stockton, and Tulare, CA. We offer competitive hourly rates, mileage reimbursement, hotel/meal accommodations when needed. Previous training experience very helpful.

HVAC/R/SM disciplines – Candidates should indicate all applicable areas of expertise.

- HVAC/R/SM Industry Certifications
- Commercial Components and Applications
- Boilers
- Chillers
- Water Towers
- Refrigeration Systems
- Water Source Heat Pumps
- Fan Coils & Air Handlers

1. Instructors should have a minimum of twenty (20) years of actual field experience in the HVAC/R/SM industry.
2. Instructors should have rec-

Help Wanted

ognized HVAC/R/SM industry certifications.

3. Instructors should have the ability to teach face-to-face, HVAC/R/SM material as determined by the IHACI Education Committee (typical 80 to 160 seminar attendees).
4. Instructors should have minimum computer skill sets to present existing and future formatted IHACI curriculum.
5. Instructors should be able to pass HVAC/R/SM work history and security background checks.
6. Instructors should be able to travel as needed to the different training venues.
7. Instructors must be able to attend required education and training meetings.

Interested instructor candidates should submit their resumes to the IHACI office for review and evaluation by IHACI's Education Committee. Please send resumes to: [s.evans@ihaci.org](mailto:s.evans@ihaci.org) or fax to 818-551-1115.

.....

**Hiring Outside Sales Professionals**

AT OUR LOCATIONS IN CALIFORNIA

Anaheim, El Cajon, and Union City

Responsibilities include:

- Calling on accounts
- Developing and building strong customer relationships

Help Wanted

Minimum Qualifications:

- 3 years sales experience required
- Knowledge or experience in HVACR required
- Valid Driver's License and reliable vehicle is a must
- Excellent people, communication and computer skills

Benefits include:

- Competitive salary with an incentive program
- Expense reimbursement
- Medical, dental, disability, 401K, life, and more



**Company Overview**

The R.E. Michel Company was founded in Baltimore, Maryland in 1935 as a supplier to the home heating oil burner industry. Still family owned and operated, we have grown to be one of our nation's leading wholesale distributors of HVACR equipment, parts and supplies and we have more than 250 locations nationwide.

For consideration and to apply online please visit our website at <https://www.remichel.com/WebServices/WebContent/start/jobs>

REMICHEL.COM

.....

Help Wanted

**Gas Appliance Technician**

Take your talent to the top and establish a career with the nation's largest natural gas distributor – SoCal Gas! We currently have Gas Appliance Technician opportunities at various locations for individuals to perform a range of independent services related to residential gas appliance operations. Please visit [www.socalgas.com/careers](http://www.socalgas.com/careers) to apply.

.....

**Northern California Walk In Cooler Manufacturer**

*Rudy's Commercial Refrigeration Inc.*

Rudy's designs, fabricates, installs and services walk in coolers and freezers.

Is looking for a person who has experience in Quickbooks, Service Titan, Auto Cad, sales and service and who has managed. Please send resumes to [ben@rudysrefrigeration.com](mailto:ben@rudysrefrigeration.com) or call 510-376-9163

Business for Sale

**Just in time for summer!**

Well established family owned HVAC business in East San Diego County for sale.

Focus: Residential and Light Commercial

Illness forces owner to retire. Turn-key company with \$700K+ in sales for 2019. Sale price \$145K: includes 3 service vans and inventory – existing personnel available. Option to lease existing facility or integrate with your own business. This a great opportunity for serious minded business professionals that wish to begin or expand their business. Serious inquiries contact us at [HRMNGREEN@GMAIL.COM](mailto:HRMNGREEN@GMAIL.COM)

Advertiser Index

ADVERTISER .....	ICN PAGE
American Refrigeration	
Supplies .....	15
Baker Distributing Company .....	17
CalCERTS .....	27
CPS Products.....	12
Ferguson HVAC / RUUD .....	2-3
Ferguson HVAC /	
Day and Night.....	31
Field Controls.....	6, 16, 20
Fieldpiece .....	18
Goodman .....	32
Mitsubishi Electric .....	11
NATE.....	19
Pro Source/ Pro Lift.....	23
Rapid Duct Testing .....	13
R.E. Michel Company .....	9
Rheem.....	25
Rudy's Commercial	
Refrigeration.....	24
Russell Sigler .....	21
Sierra Chevrolet.....	8
SoCal Gas .....	7
USACD.....	5
Vent Cap Systems.....	23

The Institute of Heating and Air Conditioning Industries publishes  
**INDOOR COMFORT NEWS**

IHACI OFFICERS

- Mark Ramirez**, President  
Comfort Climate Control
- Bob Wiseman**, Chairman  
Canoga Park Heating & Air Conditioning
- Carlos Ruiz**, Vice President  
Southern California Gas Company
- Dean Gilford**, Secretary/Treasurer  
Kilowatt Heating, A/C & Electric

**Tyler Miner**, Immediate Past President  
Redlands|Henry Bush Plumbing, Heating and Air Conditioning

BOARD OF DIRECTORS

- Steve Adams**  
Ferguson Heating & Cooling
- Jim Batts**  
Los Angeles Department of Water and Power
- Mike Carson**  
Brody Pennell Heating, Air Conditioning and Electrical Contractors
- Steve Clinton**  
Southern California Edison

**Eric Linares**  
Ingersoll Rand

**Robert Scott**  
RASENT Solutions

**Penny Yonan Padgett**  
US Airconditioning Distributors

INDOOR COMFORT NEWS

**Gilbert Rivera**  
Editor

**Susie Evans**  
Executive Vice President

**Ted Rieger**  
Northern California Correspondent

**Jim Johnson**  
Contributing Editor

**Rick Torres / Calavera Graphics**  
Pre-Press Consultant

**Lourdes S. Marta**  
Program Coordinator

**Alice Marquez**  
Program Coordinator

**Ari ManSonHing**  
Accounting

**INDOOR COMFORT NEWS** is not responsible for unsolicited materials. Although every precaution is taken to ensure the accuracy of statements, IHACI assumes no responsibility.

**Postmaster:** Send address changes to  
**INDOOR COMFORT NEWS**  
454 W. Broadway, Glendale, CA 91204  
Phone (818) 551-1555

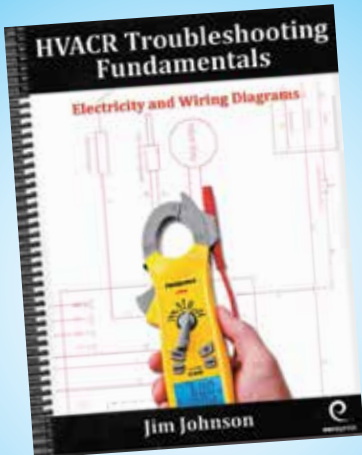


HVACR TROUBLESHOOTING FUNDAMENTALS



Electricity & Wiring Diagrams  
Training Package for Instructors & Service Managers

by Jim Johnson and Technical Training Associates



\$125

An HVACR Technician Training System That Includes  
a 420-page Spiral Bound Training Manual and  
Two Training Supplements: Accompanying Instructor Guide  
and PowerPoint Presentation.

Skill Development Through Specialized Training

For information, call 520.625.6847 to order by phone.  
Order online at [www.techtrainassoc.com](http://www.techtrainassoc.com).





## AVAILABLE AT A LOCATION NEAR YOU

# THE X-VANE™ UNIT



## FEATURING: ALL NEW BELTLESS DIRECT-DRIVE VANE AXIAL FAN

Test the competitive success of your Job Quote  
See how the X-Vane measures up.



### Come Join us on our Tour to Qualify Your Current Jobs for Exclusive Commercial Offers:

- Design Build Spec Credit Program
- Crane Credit Promotions
- Southern California Edison Upgrade HVAC Program



## CHECK OUT OUR X-VANE TOUR SCHEDULE HERE:

<http://aircold.fergusonhvac.com/2020/02/28/day-night-x-vane-tour-schedule>

If you cannot attend an event, please contact our Commercial Department at [Pomona0347.RQC@Ferguson.com](mailto:Pomona0347.RQC@Ferguson.com)

### ARIZONA

GILBERT (480) 824-4250	W PHOENIX (623) 474-7200
GLENDAL (602) 246-6982	PRESCOTT (928) 759-0222
MESA (480) 832-3438	NW TUCSON (520) 670-1100
NE PHOENIX (480) 308-8200	SE TUCSON (520) 290-9851
S PHOENIX (602) 438-8945	YUMA (928) 329-6420

### CALIFORNIA

ANAHEIM (714) 520-0026	DUBLIN (925) 828-4875
BAKERSFIELD (661) 335-7200	EL CAJON (619) 258-9382
CATHEDRAL CITY (760) 770-6762	FRESNO (559) 538-6124
CHATSWORTH (818) 341-5200	GILROY (408) 846-6469
CHICO (530) 893-2114	HAYWARD (510) 782-9820

INDIO  
(760) 775-7400

LANCASTER  
(661) 945-6902

MANTECA  
(209) 239-6407

NEWBURY PARK  
(805) 376-3576

ONTARIO  
(909) 969-2272

PASO ROBLES  
(805) 434-3114

PITTSBURG  
(925) 778-1237

POMONA  
(909) 517-3810

RIVERSIDE  
(951) 784-0506

N SACRAMENTO  
(916) 924-8661

S SACRAMENTO  
(916) 210-7993

SAN GABRIEL  
(626) 458-2432

SAN JOSE  
(408) 271-1685

SAN LUIS OBISPO  
(805) 549-0081

SAN RAFAEL  
(415) 459-3798

SANTA CLARITA  
(661) 287-3142

VAN NUYS  
(818) 779-0894

VICTORVILLE  
(760) 241-6284

### NEVADA

LAS VEGAS, NV  
(702) 260-9388

**FERGUSONHVAC.COM**

©2020 Ferguson Enterprises, LLC 0220 1783209



Air Conditioning & Heating

# GOODMAN HAS ADDED ANOTHER GREAT LIMITED WARRANTY\*.



These residential models are  
now also covered by a 2-Year Unit  
Replacement Limited Warranty\*

**2**  
**YEAR** **UNIT**  
**REPLACEMENT**  
**LIMITED**  
**WARRANTY\***

CONDENSING UNITS	GAS FURNACES	RESIDENTIAL PACKAGED UNITS	
GSX16	GMES92	GPC15H	GPH14H
GSX14	GMES80	GPC14H	GPH14M
GSX13	GMES80-U**	GPC14M	GPD14
GSZ16	GCES80	GPH16H	GPG16M
GSZ14		GPH16M	GPG14M

\*\*California Only



IT FITS IN NICELY WITH OUR OTHER OUTSTANDING LIMITED WARRANTIES\*.

**2**  
**YEAR** **UNIT**  
**REPLACEMENT**  
**LIMITED**  
**WARRANTY\***

**10**  
**YEAR** **PARTS**  
**LIMITED**  
**WARRANTY\***

**10**  
**YEAR** **UNIT**  
**REPLACEMENT**  
**LIMITED**  
**WARRANTY\***

**LIFETIME**  
**HEAT EXCHANGER**  
**LIMITED WARRANTY\***

**LIFETIME**  
**COMPRESSOR**  
**LIMITED WARRANTY\***

**20**  
**YEAR** **HEAT**  
**EXCHANGER**  
**LIMITED**  
**WARRANTY\***

\* Complete warranty details available from your local dealer or at [www.goodmanmfg.com](http://www.goodmanmfg.com). To receive the 2-Year Unit Replacement Limited Warranty, Lifetime Compressor Limited Warranty, Lifetime Heat Exchanger Limited Warranty (both good for as long as you own your home), 20-Year Heat Exchanger Limited Warranty, 10-Year Unit Replacement Limited Warranty, 10-Year Parts Limited Warranty, and 5-Year Parts Limited Warranty online registration must be completed within 60 days of installation. Online registration is not required in California or Quebec.



At Goodman, we believe in  
American dependability.  
Units are designed, engineered  
and assembled in the U.S.A.

[www.goodmanmfg.com](http://www.goodmanmfg.com)