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NOVEMBER 2022  
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## Navigating the Maze of Business Succession

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**Service Call Best Practices, p. 30**



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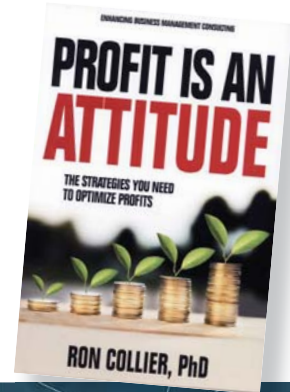
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**ON THE COVER:** Successions and M&As have unique requirements and questions to be addressed.

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### Supply Registers, Attached Garages & CO Awareness

The risk of CO poisoning increases in homes with supply registers that condition a garage attached to the living space.

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BY TERRY MCIVER, EDITOR-IN-CHIEF

# New Chapter at Service Roundtable

A leadership transition was announced during the October 2022 Service World Expo. Matt Michel and David Heimer, key influencers in the formation, growth and development of Service Roundtable and Service Nation Alliance, announced they are stepping down to focus on new pursuits.

Michel and Heimer have guided or initiated every major offering and milestone at business-building organizations Service Roundtable (launched in 2002) and Service Nation (launched in 2008). But they felt their farewell would not have been complete without thanking others who helped to make it all possible. They first acknowledged their initial investors and advisors and shined a spotlight on those who remain in leadership.

Once sufficient funding was secured, Heimer and Michel worked long hours to complete the Service Roundtable blueprint, which today serves more than 5,000 member companies. But they said it would have been impossible without the help of a fantastic team.

Janet Thomasson served as chief of staff until her recent retirement. “She kept the company straight administratively, kept me straight, managed billing, data entry, and much more,” Michel said.

Liz Patrick recently retired as vice president of Strategic Alliances. “Liz built Roundtable Rewards, the largest contractor buying group in the service trades,” Heimer said. “Today, those members receive millions of dollars in loyalty and growth rebates from more than 140 strategic partners each quarter.”

Retail Contractor Coalition, Roundtable Rewards and Service Nation Alliance were added in 2008.

Service Nation is now owned by EverCommerce. Michel said there were many interested buyers over the years, but they chose EverCommerce because of the fit, culture and financial strength it brought to the deal. The new owners have not messed with the organizations’ recipes for success.

“This year we launched Alliance Premier, a training, coaching, and mentoring program, with coaches coming primarily from the ranks of contractors who have built and sold their companies. These are the people who have been there, done it, and have the skins on the wall to prove it,” Heimer said.



Service Roundtable and Service Nation are in good hands.

“Our mission has always been to help contractors improve their business and financial performance, leading to a profitable exit strategy. One of the things we are most proud of is how our members have consistently outpaced the industry growth rate,” Michel said.

SR and SN will be led by Tom Peregrino, a contractor who joined Service Nation Alliance, became a Contractor of the Year, sold his business, joined Service Nation, and built the Alliance Premier program. Consultant Jim Hinshaw, with a background in HVAC manufacturing, will manage vertical markets and oversee Alliance Premier. Pete Danielson, an ex-contractor member

of Service Nation Alliance who built and sold his company, will head up marketing. Bob Viering, also a successful ex-contractor, heads up Alliance programs.

Andrew Kissel manages information technology. He worked with the organization as a consultant in the early days of Service Nation and led the development of ServiceRoundtable.com. Peter Galanek leads the Roundtable Rewards program. Stephanie Fritz leads the company’s sales efforts.

Sarah Blackhall began as an intern, and is now events manager, with oversight of the graphics design team.

Carol Longacre came on board at Service Nation from her family’s contracting business. Her experience includes leadership positions in local and state trade associations. She will work with the dozens of state and local associations that have affiliated and aligned themselves with the Service Roundtable.

“The future is bright for this team and bright for Service Nation, Service Roundtable, Retail Contractor Coalition, Service Nation Alliance, Alliance Premier, Roundtable Rewards, the Service World Expo, and all of you. For all of your support and patronage over the past 20 years, thank you,” Michel concluded.

Moving forward, David Heimer will be launching a new podcast app, and building a small company around it. Matt Michel will continue to write columns and books and speak at events.

Best wishes to David and Matt, and to the Service Roundtable and Service Nation teams. **CB**

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Griffin Service

MIKE CONLEY  
Pioneer Heating & AC

VINCE DIFILIPPO  
DiFilippo’s Service Co.

CHARLIE GREER  
HVAC Profit Boosters

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COMPILED BY TERRY MCIVER, EDITOR-IN-CHIEF

## Rite Way Heating, Cooling & Plumbing Acquires Southern Arizona Plumbing

TUCSON, Ariz.—Rite Way Heating, Cooling & Plumbing has acquired Southern Arizona Plumbing.

Southern Arizona was founded in 2007 by Mike Nagal and Aaron Rice, and has become a leading residential plumbing service provider across Pima County. The Southern Arizona team has developed an expertise in sewer inspections, pipe lining, sink, toilet and faucet repair, drain cleaning, gas piping, water heater installations, well pumps and water treatment.

“We are excited to welcome the Southern Arizona team into the Rite Way family. With the addition of Southern Arizona’s plumbing and sewer expertise, we are now better positioned to serve the needs of homeowners across Tucson,” said Rick Walter, President of Rite Way. “Mike and Aaron have built a fabulous business and share our passion for taking care of people. Under their leadership, we will now be able to offer expanded plumbing services – specifically sewer services – to current and future Rite Way customers.”

Nagal, Rice and the Southern Arizona team will join the Rite Way family and operate under the Rite Way name and brand.

“The opportunity to combine Southern Arizona into the Rite Way business made sense for us, our team, and our customers. Given that Rite Way is one of the largest home service providers in the city, we now have access to resources and tools that we never thought possible. I’m looking forward to working with Rick, Chris Sundin, and the entire Rite Way team,” said Mike Nagal, co-founder of Southern Arizona.

Founded in 1959, Rite Way is one of the largest Residential HVAC, Plumbing and Electrical service providers in Tucson, currently serving over 13,000 active residential customers with more than 200 team members. [RiteWayAC.com](http://RiteWayAC.com).

## Safety Alert Warns Against Repairing Flood-damaged Gas Equipment

MASON, Ohio—As Florida HVAC and refrigeration contractors seek to regroup following Hurricane Ian, those contractors who experienced equipment damage may be tempted to save and refurbish as much equipment as possible. But when it comes to gas equipment, including regulators and torches

## Hope for Distracted Business Owners

Turning around “bad attitudes” has long been a popular theme in TV and movies. In real-life, HVAC or plumbing business owners often carry a different kind of “bad” attitude, one that says they can operate a business successfully by being an entrepreneur, manager and technician all in one. But the “profit attitude” described by Ron Collier, Ph.D., can change all that, once the business owner commits to focusing on the business rather than working in the business.

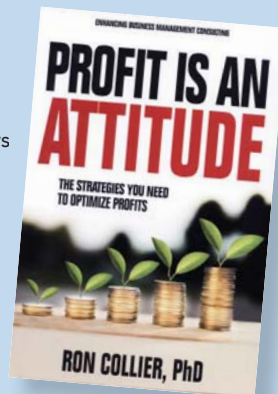
*Profit is an Attitude: the Strategies You Need to Optimize Profits* is a new book for HVAC and plumbing dealers and territory managers by Ron Collier, Ph.D., an author, keynote speaker, business management and sales consultant and entrepreneur, who has been helping turn businesses around since 1984, including HVAC and plumbing businesses.

“If you’re working more than 40 hours per week and have less time to spend with your family and friends than you did when you were employed elsewhere, this book is for you,” Collier writes. “My new book will teach dealers how to make

money in the contracting industry. I share my insights from my 37 years of consulting and over 6,000 clients.”

In *Profit is an Attitude: The Strategies You Need to Optimize Profits*, Collier takes the business owner (or prospective business owner) along the path to ensure profitability in a business. He begins with the need for a solid financial footing, a marketing plan and a sales strategy. *Profit is an Attitude* is helpful to a business planner in the many details Collier provides as essential to laying a firm foundation, from business management software, to finding an accountant, to understanding a basic profit & loss statement.

Collier explains all of the prime operating expenses and business planning steps, as well as the need to make sufficient profit to make it all worthwhile. Topics include an understanding of



working capital, return on investment, short-term ratios, an explanation of accounts receivables, return on equity, and pricing for profit, Collier’s favorite topic.

“Most business owners start a business by not understanding pricing and go bankrupt by not understanding pricing. I want to change that,” he writes. The chapter on pricing

for profit is exhaustive in its analysis of pricing strategies that cover the cost of goods sold, cash flow, variable and fixed overhead, and how to ensure a great profit for the bottom line. Collier writes: “Pricing is probably the number one key to profitability and should never be taken lightly. If your products are priced so that you can make money and the price is favorable with the market, you’ll have a solid business if you can keep the money you earn.”

*Profit is an Attitude* can be ordered at [www.collier-consulting.com](http://www.collier-consulting.com).



used in brazing and soldering, the risks of injury are too great to make it worthwhile to repair them.

A technical service bulletin from the Harris Products Group provides an overview of the safety issues that can occur when using equipment damaged by floodwaters.

**Risks with gas** regulators include: heat of recompression fires in contaminated oxygen regulators; high-pressure safety device failure due to debris contamination; pressure gauge explosion as a result of internal gauge failure due to contamination; damage to personnel or downstream equipment as a result of regulator performance failure due to contamination.

**Risks with torches** include: flashback, backfires and sustained backfires as a result of flood contaminants. Flashback arrestors, if exposed to flood waters, can become damaged and clogged irreversibly; rather than being safety devices, they could become hazards themselves. Oxy-fuel torches and related equipment, unless completely disassembled, including un-brazing of some parts, and thoroughly cleaned and degreased, could result in failure due to contamination.

**Risks with manifolds** include: downstream gas contamination in pipelines and or process equipment; heat of recompression fires in contaminated oxygen pipelines/systems. Pipeline protection failure potentially resulting in injury or extreme harm. For more information, call Harris at 800-733-4043.

## SGH Acquires Four in Florida

TAMPA, Fla.—Strikepoint Group Holdings - formerly Horizon Group Holdings - has expanded its presence across the South Florida market.

In the Tampa region, SGH has acquired IERNA Heating, Cooling and Plumbing, a leading residential HVAC and plumbing contractor serving communities throughout Hillsborough, Pasco, Polk and Northern Pinellas Counties.

In West Palm Beach, SGH has acquired Sansone Air Conditioning, a family-owned and operated air conditioning company headquartered in West Palm Beach, Florida serving Palm Beach, Broward, St. Lucie, and Martin counties.

Mr. AC Cooling & Heating, serves Florida's Manatee County, Sarasota, Brandenton and other regions. The company will operate under SGH's Elite Heating & Air brand, a leading Bradenton, Florida-area heating, cooling, and plumbing services company with more than 20 years of HVAC expertise.

Pinellas Comfort Systems, the fourth SGH acquired company, serves Florida's Pinellas County. In addition to Elite in Sarasota, SGH currently owns and operates the Performance Air Conditioning, Electrical, and Plumbing and Paradise Air Cooling and Heating brands in and around Tampa.

Read more online at [bit.ly/SGHflorida](http://bit.ly/SGHflorida).

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## RectorSeal Acquires Three Product Lines

Houston, TX—RectorSeal LLC., announced the acquisition of three product lines relevant to its existing offerings for HVAC and refrigeration contractors: Cover Guard, AC GUARD and Falcon Stainless, Inc.

Cover Guard lineset covers and AC GUARD HVAC condenser protection cages are, according to RectorSeal, trusted and proven product lines now offered within the RectorSeal family of brands. Both product lines will be covered by RectorSeal's industry-leading 3-Year Limited Warranty with no registration required.

Designed for residential and commercial HVAC installations of ductless and ducted systems, Cover Guard lineset covers provide adjustable support from two to four inches with quick snap-on covers to accommodate multiple linesets and condensate drains. Cover Guard lineset covers do not



release under pressure. Due to the exceptional design, as the internal pressure exerted by the linesets and condensate line increases, the locking strength of the guard increases.

## ASA Lifetime Award Winners

ITASCA, Illinois — The American Supply Association's Executive Committee announced that Mid-City Supply's Jeff New and Hajoca Corporation's Gary Jones have received the 2022 Fred V. Keenan Lifetime Achievement Award.

New, chairman of Elkhart, Indiana-based Mid-City Supply and Jones, eastern division pricing and vendor relations manager for Hajoca Corp., were to be honored November 10 during the InSinkErator ASA Annual Meeting & Member Luncheon as part of NETWORK2022 at the Fairmont Chicago Millennium Park, Nov. 9-11. Both were unanimous recommendations by the Keenan Award Selection Committee.

The Keenan Lifetime Achievement Award is presented to individuals with a long history of service and dedication to the



plumbing, heating, cooling and piping industry and the pipe valve and fitting industry. To be considered, individuals must have exhibited strong influence on the status of the industry, project a positive industry image, be responsible for positively affecting the industry in general, and have provided a history of dedicated service to ASA.

## Danfoss Drives Welcomes Sheila Lenss as New Americas Leader

Danfoss announced that Sheila Lenss has joined as vice president of its Americas Drives business. Lenss, who began her new role on September 12, replaces Ian Barrie, who is retiring after 28 years at Danfoss. Lenss brings more than 20 years of executive business leadership to the role.



Lenss  
Danfoss

"Danfoss Drives is a significant player in the market, and I appreciate all that our Americas team has done to get us to this point," said Barrie. "We are able to offer the full value chain — manufacturing, research and development and sales and service operations — which allows us to be more responsive and efficient with our customers, and Sheila is the ideal leader to continue our growth trajectory."

Lenss joins Danfoss from Carrier, where she was leading its industrial fire (oil, gas) vertical business. Prior to working at Carrier, Lenss held various marketing, sales and operations

leadership roles with Honeywell both domestically and globally. She has also worked with start-up and mid-size B2B companies in industrial and commercial markets.

"I am excited to join Danfoss Drives and continue to strengthen our performance in North and Latin America," said Lenss. "North America in particular offers significant growth for Danfoss as the world recovers from the pandemic and we will continue to invest in our core markets and new opportunities."

"Ian has put a strong foundation in place for Danfoss Drives in the region," said Rick Sporrer, president of Danfoss North America. "I am grateful to him for his leadership and look forward to continued success under Sheila's direction."

Lenss has a bachelor's degree in marketing from the University of St. Thomas and has completed executive education programs at Harvard University and Boston University. She is Six Sigma certified.

AC GUARD cages are adjustable and provide a physical and visual deterrent for residential and commercial condensing units. Constructed of 16 gauge steel, the powder-coated AC GUARD cages are built for long-term performance.

AC GUARD cages are described as attractive, easy to install, and easy to remove for condensing unit service and maintenance. AC GUARD cages adjust to a variety of sizes from 34-in. H x 30-in. W x 30-in. D, to 59-in. H x 51-in. W x 51-in. D. For larger units, two cages can be placed back-to-back. Expanded metal kits are available for installation to provide additional condensing unit protection.

Falcon Stainless, Inc., based in California, provides high-quality, full port, corrugated stainless steel, and flexible water and gas connectors that are used extensively in the plumbing and HVACR markets. Falcon was the first company to introduce corrugated stainless steel water and gas connections to the professional trades in the United States. Today, Falcon products are well known to be exceptional products, and the company says it focuses on providing a continuation of outstanding customer service. [www.rectorseal.com](http://www.rectorseal.com)

**Fujitsu Rebrands VRF, mini-splits, heat pumps**

Fujitsu General America, Inc. announced a global shift in the branding of its VRF and mini-split heat pump product lines. From October 3, 2022 onwards, all existing and future VRF and mini-split lines will be labeled as Fujitsu branded Airstage products. Timing for labeling varies depending on the model.



Leading with a new, modern teal logo symbolizing innovation, opportunity and sustainability, the rebrand will provide a fresh look for its most well-known products while Fujitsu continues to deliver the same energy efficient, reliable products with exceptional support. Model numbers will not change.

Aside from the updated logo, Fujitsu J-Series and V-Series VRF products retain their Airstage branding. The existing Halcyon mini-split line is now known as the Airstage H-Series.

The rebrand unifies and strengthens Fujitsu's global positioning and helps facilitate expansion into new areas of business.

"Moving forward, Airstage will take on a much broader meaning," said Fujitsu General America VP of Marketing, Erin Mezle. "It now embodies a more cohesive brand family, bold new thinking, dynamic product performance, and a finely-calibrated focus on innovation, sustainability and electrification."

The rebranding effort does not impact business operations. Fujitsu's unitary and Westinghouse brands are not involved with the rebrand, and are unaffected by this change.

The Fujitsu company name, vision and values remain intact, and Fujitsu's unwavering commitment to its distribution channels and consumers are stronger than ever. [www.FujitsuGeneral.com](http://www.FujitsuGeneral.com)

**Mosaic Announces Partnerships for Residential Clean Energy**

Mosaic, a leading financing platform for U.S. residential solar and energy-efficient home improvements, announced it has struck strategic partnerships to help residential customers transition to clean energy.

On the heels of the recently passed Inflation Reduction Act, Mosaic has partnered with ClimateMaster and Leap.

ClimateMaster, described by sources as the world's largest and most progressive manufacturer of water source and geothermal heat pump systems for residential and commercial applications, supports more than 600 American jobs and over 1,200 independent dealers from its 510,000 sq.ft., cutting-edge facility located in Oklahoma City, Oklahoma.

Leap is a subscription-based software that home improvement contractors use to digitize their business — including contracts, estimates, documents, financing and more. Sources report Leap is revolutionizing the home improvement industry by making sales easier, faster and simpler through technology.

Mosaic works directly with leading companies like ClimateMaster and Leap so their contractors can offer fast and affordable financing options right at the point of sale.

Both ClimateMaster and Leap are now working with Mosaic to offer financing options to homeowners across the U.S. to help them make their homes more valuable, comfortable and resilient through sustainable home improvements. Mosaic works directly with leading companies like ClimateMaster and Leap so their contractors can offer fast and affordable financing options right at the point of sale.

Mosaic's stated mission is to enable the transition of residential housing to 100% clean energy through energy efficient upgrades and renewable energy systems. These partnerships accelerate that mission, particularly at a time when consumer incentives are at an all-time high after the Inflation Reduction Act (IRA) passed.

Leap's goal is to give contractors options that will make the financing process as simple as possible for their customers to finance their home improvement projects. Mosaic's platform is fast and easy to offer right at the point of sale.

Mosaic will work with ClimateMaster and their distribution partners to train their sales force on the simplicity of offering payment options, as well as help navigate the Investment Tax Credit (ITC) extension for geothermal through the IRA. ClimateMaster intends to drive the adoption of geothermal energy through this partnership.

Both partnerships launched in September 2022, and are active nationwide. [www.joinmosaic.com](http://www.joinmosaic.com)

CHILLERS

The Carrier AquaForce 30XV line was developed to ensure optimum performance in an air-cooled solution that's easy to install, easy to service, highly reliable and quiet. The 30XV delivers industry leading efficiency (IPLV Ratings greater than 22.0 available in certain models) and low sound. The smaller footprint 30XV can replace just about all older equipment going back two generations. The 30XV can be customized to fit most building needs, anywhere.



With value-added features such as fully air-cooled variable frequency drives and next generation sub-systems including rotary screw compressors and quiet AeroAcoustic® fan system, integrated with microchannel condenser coils, the 30XV is made for versatility, robustness and efficiency. Its user-friendly control with color touchscreen display is self-optimizing, enabling the 30XV to run at optimum performance at any given set of conditions. The 30XV is ideal

for applications including schools, hotels, data centers, office buildings and more. To learn more about the Carrier AquaForce 30XV variable-speed air-cooled chiller and its innovative free-cooling offer, visit: [carrier.com/30XV](http://carrier.com/30XV)

To maximize profitability and value, an efficient use of space is critical for any business. Samsung's DVM S system provides high heating and cooling capacity within the same product cabinet dimensions enabling businesses to use their space more efficiently. The DVM S hybrid heat exchanger offers a 49 percent larger heat models) and low sound. The smaller footprint 30XV can replace just about all older equipment going back two generations. The 30XV can be customized to fit most building needs, anywhere. With value-added features such as fully



air-cooled variable frequency drives and next generation sub-systems including rotary screw compressors and quiet AeroAcoustic® fan system, integrated with microchannel condenser coils, the 30XV is made for versatility, robustness and efficiency. Its user-friendly control with color touchscreen display is self-optimizing, enabling the 30XV to run at optimum performance at any given set of conditions. The 30XV is ideal for applications including schools, hotels, data centers, office buildings and more. [carrier.com/30XV](http://carrier.com/30XV)

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The award-winning YORK® air-cooled YVAA variable speed drive screw chiller features increased operating efficiency, a reduced footprint, reduced sound levels and low-GWP refrigerants.

The YVAA chiller is highlighted by advanced technologies including series





flow evaporators, next generation microchannel condenser coils and EC fans to create higher levels of full and part load efficiency. A patented, liquid-cooled variable speed drive improves reliability and performance.

The YVAA chiller offers more flexibility through an optimized design with expanded configuration options at each cooling capacity.

When designing the CenTraVac chiller, Trane focused on reliability, efficiency and system versatility, all of which were enabled by fundamental design choices.



The direct drive compressor delivers reliability through simplicity of design and fewer moving parts, while enabling industry-leading efficiencies and the lowest sound and vibration levels.



The semi-hermetic motor operates in a cool and clean environment, extending the life of the chiller and eliminating the heat that would otherwise impact the mechanical room. The multi-stage compressor provides stable and reliable

operation across a wider range of operating conditions, and the low pressure design enables a near-zero refrigerant leak rate.

For larger cooling capacities, the CDHH model extends the proven CenTraVac design to more than 4000 tons. Duplex CenTraVac chillers utilize a series counterflow design with two independent refrigerant circuits that leverage thermodynamic staging to reduce energy consumption by 13 percent compared to a single compressor unit; and—when paired in a series configuration—increases the energy savings to 19 percent.

Trane by Trane Technologies has also introduced the new Thermafit Air-to-Water modular heat pump that offers flexible, all-electric heating and cooling; updates to its Voyager 3 and IntelliPak 2 rooftop units to meet the U.S. Department of Energy (DOE) 2023 minimum efficiency standards; and Trane's first air rotation unit, to improve indoor comfort and air quality in warehouses and large facilities. The Trane Thermafit Air-to-Water Modular Heat Pump Model AXM is a fully electric modular unit that owners can scale to match a building's heating or cooling load. The Model AXM moves heat rather than generating heat; thus, it can be three times more efficient than other

forms of electric heating. The Thermafit modular product line includes the Model AXM and eight product families that "bring buildings into the future of sustainable comfort." [www.trane.com/commercial](http://www.trane.com/commercial)

## HUMIDIFIERS / DEHUMIDIFIERS

The Dristeem LX Series is the only gas-fired humidifier that combines the highest efficiency on the market with ultra-low NOx in a single design.



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- Universal water control for use with any water type, including RO/DI water.
- Modulating output with minimum 5:1 turndown for accurate humidity control.
- Outdoor and indoor models for application flexibility.

All LX Series humidifiers feature our new touchscreen display. This new display has all the industry-leading functionality of the Vapor-logic® controller with an intuitive interface, animated graphics, and a Set-up Wizard for easier start-ups. [www.dristeem.com](http://www.dristeem.com)

A Trane Envirowise humidifier provides the right amount of moisture in every room. Having the correct humidity can help alleviate dry skin and allergy symptoms and protect valuables such as furniture, paintings and woodwork.



Envirowise eliminates the need for portable appliances. Capacity output is up to 18 gallons per day. The Envirowise works with all furnace models. Automatic control, for homes up to 4,200 sq. ft.

Other features: flow-through design; built-in fan; durable, rust-resistant housing; replaceable pad; bypass damper; controlled moisture distribution. An outdoor sensor is optional. When paired with Trane CleanEffects™ technology, an Envirowise humidifier will not only alleviate the dryness but also give the most advanced whole-house air filtration system. [www.trane.com/residential](http://www.trane.com/residential)

The Aprilaire Model 300 residential humidifier, a self-contained, whole-home, fan-powered evaporative humidifier for homes heated with boilers, mini-splits, radiant heat, and other ductless systems, although it can also be installed in homes with forced air where limited space is available for installation.



The new unit features 30 percent more capacity than the Model 350, Aprilaire's previous generation humidifier,

Quiet Fan Technology, and an extended dry-time fan. This self-contained evaporative humidifier draws air through an evaporative water panel and the unit puts out 13 gallons per day, achieving heat for evaporation using 120°F water and room temperature air.

The Model 300 is for homes up to 3,500 square feet (tight construction) and can be easily installed by joist- or wall-mounting in a basement, utility closet, laundry room, or crawl space with access to water. It is hard or flexible duct compatible, with output via floor or baseboard grills and features a quick water panel replacement at the bottom of the unit. At about 14 x 12 x 22-inches, the unit is compact, weighs less than 30 pounds, and includes Aprilaire's Model 65 digital humidistat. [www.aprilaire.com](http://www.aprilaire.com)

Bryant's HUMCRLF Preferred™ Large Fan-Powered (LFP) humidifier with up to an 18-gallon water vapor output supports a large home. It is hard or flexible duct compatible, with output via floor or baseboard grills and features a quick water panel replacement at the bottom of the unit. At about 14 x 12 x 22-inches, the unit is compact, weighs less than 30 pounds, and includes Bryant's Model 65 digital humidistat. [www.bryant.com](http://www.bryant.com)



system if space is a problem. The Bryant Preferred™ whole-home dehumidifier removes up to 95 pints/day of moisture

through a MERV 8 filtration system and is ENERGY STAR® certified. To learn more about Bryant's dehumidifier, visit <https://www.bryant.com/en/us/products/dehumidifiers/dehxx/>.

A Carrier humidifier can "moisturize" dry, heated winter air, making customers' home feel more comfortable. Carrier's HUMCRLF1518-A12 Performance™ Large Fan-Powered (LFP) Humidifier with up to an 18-gallon water vapor output supports 4,200 square feet. With an expanded aluminum evaporator pad, Carrier's LFP humidifier measures at 10.3 x 15.9 x 18 and comes with a 5-year limited warranty out of the box or 10-year limited warranty upon registration.

The Carrier® Performance series dehumidifier is available in two sizes, for a whole-home solution or a humid basement. Both sizes work quietly to wring out humidity from the air so you can save on utilities and be comfortable. And they're designed to be configurable with your existing system in a multitude of ways or operate independently away from your system if space is a problem. Sources report the Carrier Performance™ whole-home dehumidifier removes up to 95 pints/day of moisture through a MERV 8 filtration system and is ENERGY STAR® certified.



## SOFTWARE



Lytix, Inc. has launched the Lytx Asset Tracking Service to augment its industry-leading fleet management solutions. Available now in the U.S. and Canada, the Asset Tracking Service can be used by fleet managers looking for a streamlined approach to locating and managing their powered equipment.

Lytix also announced several new maintenance enhancements for its Fleet Tracking Service, scheduled for release later this year. Approximately \$1 billion of large machinery is lost or stolen in the United States every year. In response, Lytx seeks to provide fleet managers with an efficient solution that can quickly help them secure and locate their most important powered assets. Available now, the all-new Lytx Asset Tracking Service is designed for fleet managers who need timely information about their



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A new release of the Fulcrum no-code platform is delivering unique, location-aware options to maximize the performance and agility of field teams as they execute safety, quality, and other programs. In addition to using Fulcrum to modernize their mobile workforces with data collection, intelligent automation, and data-driven insights, Fulcrum now also offers direct integration with geographic information systems such as Esri™ ArcGIS™.

When contracting companies use Fulcrum to create mobile apps and intelligently automate workflows, they open up the possibility of easily creating “apps with maps” that provide location context for field teams’ inspection, asset management, equipment installation, and other activities—without writing code. Fulcrum also connects these field activities with the back office by automatically tagging records with location data and supplying built-in location intelligence to anyone who has permission to see the information.

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Communicate with your entire fleet, and send daily schedules to your field staff’s mobile devices, reducing travel time and increasing billable hours. Once a job is complete, invoice the customer immediately, and accept payment in the field, improving your cash flow. Simplify job management with simPRO, your complete, end-to-end operations management software. Track jobs. View work schedules. Improve customer service.

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

Sera Systems is a full-suite field service management software solution that is increasing revenue by more than 50% for small-to-midsize companies compared to their previous FSM solution within the first six months of usage. Sera focuses on time management, profit margin, cash flow, and membership management using each client’s own data to boost financial performance and establish long-term business viability and growth.



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3. Admin Portal—displays information including job time efficiency and profitability – for each job and in aggregate – while providing live data for business-critical KPIs.
4. Customer Hub—customers can post images and problem descriptions, text with techs, and have secure access to service histories, invoices, tech notes, and warranties. For additional information, visit [www.sera.tech](http://www.sera.tech).

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## RESIDENTIAL FURNACES

### Allied Air Enterprises

Allied Air Enterprises announces the new 96G2E 96% AFUE Two-Stage Constant Torque Gas Furnace for higher efficiency and easy installation. Allied also announces a re-alignment of their single-stage constant torque 95% AFUE



furnace models to 96%. The new Allied Air furnace and upgrades for the three brands can help enable customers to qualify for local rebates and incentives when requirements are 96% or higher. The new high-efficiency gas furnace is ENERGY STAR® Certified and features a self-diagnosing control board for easy operation and servicing. The two-stage gas valve adjusts heat output to optimize comfort and efficiency,

while the constant torque blower motor maintains consistent airflow and even temperatures with up to 1/3 less energy than a fixed-speed blower.

The compact, 33-in. high unit features left or right side utility connections, removable floor base, rotatable draft inducer and pre-bent, pre-drilled duct flanges as well as up-flow to horizontal conversion with no modifications.

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

### Amana

Amana® brand AVZC20 inverter-driven heat pumps provide up to 21 SEER and 10 HSPF performance. Compatible with off-the-wall ComfortBridge™ Technology, the AVZC20 features high-performing Comfort Speed inverter technology designed for consistent indoor comfort and quiet, variable-speed, energy-saving operation. Using the CoolCloud™ mobile app via Bluetooth, technicians can quickly commission, configure, diagnose the system. Sources say outstanding heat transfer properties are delivered using a seven-millimeter, refrigeration-grade premium copper tubing and aluminum-fin condenser coil configuration. Recognized as Most Efficient of ENERGY STAR®.

Contractor-friendly features include Amana brand control algorithmic logic; sweat connection service valves with easy access to gauge ports; top/side maintenance access; single-panel access to controls. The AVZC20 is available in 2- to 5-ton units with heating capacities of



22,800 - 52,500 BTU/h, and covered by a Lifetime Unit Replacement Limited Warranty and 10-Year Parts Limited Warranty. Designed, engineered and assembled in the USA. [amana-hac.com](http://amana-hac.com)

### Carrier

In June 2022 Carrier introduced a redesigned Performance™ series 17 two-stage air conditioner and Performance™ series 17 two-stage heat pump that are compliant with



the upcoming 2023 Department of Energy (DOE) minimum efficiency requirements. In addition, these two products have been tested under the new 2023 test procedures and have SEER2, EER2 and HSPF2 ratings published.

In the South Region, any air conditioning unit that does not meet the new requirements cannot be installed as of January 1, 2023. Fines for installing non-compliant air conditioners can be as high as \$503.00 per unit.

The Performance 17 air conditioner earns an impressive Seasonal Energy Efficiency Ratio (SEER) rating of up to 18.0 and an Energy Efficiency Ratio (EER) rating of up to 14.5. The Performance 17 heat pump reaches SEER ratings of up to 18.5 EER 2 ratings of up to 14 and Heating Seasonal Performance Factor (HSPF) ratings of up to 9.5. These two stage models provide enhanced humidity control by operating in low stage to extract more humidity from the indoor air. The Performance series 17 air conditioner and Performance series 17 heat pump are among the first in a line of products that meet the 2023 efficiency standards to be released in 2022. [www.carrier.com/residential](http://www.carrier.com/residential)

### Daikin

Recognized by EnergyStar As a 'Most Efficient 2021' system DZ20VC heat pumps deliver outstanding



year-round indoor comfort, with up to 10 HSPF heating and 21 SEER cooling performance.

The DZ20VC employs Daikin's proprietary inverter technology with high-efficiency variable-speed swing and scroll compressors. Daikin Inside Intelligence constantly monitors performance for trouble spots. A high-efficiency ECM indoor condenser fan motor with advanced fan design moves



air quickly and quietly. Features include refrigeration-grade 7mm copper tubing and aluminum fin condenser coil; coil and ambient temperature sensors; diagnostic indicator lights, seven-segment LED display, and fault code storage; field-selectable boost mode; factory-installed muffler and crankcase heater; acoustically engineered, high-density sound control blanket; and a heavy-gauge galvanized steel cabinet with sound-control top.

Daikin's DZ20VC is available in 2 to 5 tons, backed by a 12-Year Unit Replacement Limited Warranty and 12-Year Parts Limited Warranty. [www.NorthAmerica-Daikin.com](http://www.NorthAmerica-Daikin.com)

## Goodman

The Goodman® brand GVZC20 heat pump capitalizes on inverter technology to drive up to 10 HSPF heating and 21 SEER cooling performance.

Goodman's inverter-driven systems provide tremendous efficiencies, helping reduce compressor wear and tear. They run at more energy-conserving speeds, reach indoor comfort settings more quickly, balance heat load through continuous dehumidification, and operate at lower sound levels, avoiding the constant on/off cycling compared to single- and two-stage systems.

The GVZC20 is ComfortBridge™ communicating technology compatible, allowing for easy commissioning and diagnostics using the CoolCloud™ phone/tablet application.

Contractor-friendly features include Goodman control algorithmic logic; diagnostic indicator lights, seven-segment display with fault code storage; coil/ambient temperature sensors; sweat connection service valves; easy gauge port access and more. Available in 2- to 5-ton units, with 23,400-52,000 BTU/h heating capacities. [goodmanmfg.com](http://goodmanmfg.com)

## Lennox

Building on its promise of innovation and providing the highest efficiencies, Lennox developed the Dave Lennox Signature® Collection SL25XPV heat pump, the most precise



and efficient heat pump on the market. The variable-capacity, inverter-driven, ultra-efficient heat pump features system ratings up to 24 SEER and up to 11.8 HSPF, earning it the



2022 Most Efficient ENERGY STAR® designation.

Part of the Ultimate Comfort System™, the SL25XPV features Lennox TruHeat Performance, which delivers a greater amount of heat compared to traditional heat pumps, resulting in a feeling similar to the rich, warm comfort of a gas furnace – even during the coldest outdoor temperatures. Precise Comfort® technology adjusts heating and cooling output in precise increments to perfectly match energy use with comfort. Plus, with a special sound-dampening system and the ability to primarily run at low speed, the SL25XPV absorbs outdoor noise and drastically minimizes the sound of air kicking on or off inside the home. [Lennox.com](http://Lennox.com)

## Rheem

The Rheem® Endeavor™ Line Classic Plus® Series R962V is an ENERGY STAR® certified furnace featuring 96% AFUE, resulting in energy efficiency savings. With quieter operation top-of-mind, insulated cabinets and truly variable speed airflow technology make these units one of the quieter furnaces available. Additionally, with the latest in sensor technology, the EcoNet® monitoring system provides a new level of protection, control and energy savings. The unit also boasts PlusOne® Diagnostics with built-in Bluetooth connectivity and Rheem Contractor app compatibility, which are all specifically designed to streamline installation and simplify service.



## Trane

The new Trane Platinum XV20i Heat pump is part of a new line of equipment featuring Trane Link, a revolutionary communication technology that simplifies installation, commissioning, and remote monitoring of Trane's variable speed systems. Created to provide technicians with a plug and play experience, Trane Link assists with installation accuracy of the XV20i through automated configuration, charging and system testing. Technicians can ensure a speedier setup as Trane Link self-identifies the equipment, provides automatic connection through Bluetooth mesh, and utilizes standardized color-coated wiring. Through Trane Link, technicians also can experience more efficient service calls and troubleshooting, as the technology provides the exact data they need on their own smart device. Trane Link equipment will be available to independent Trane dealers nationwide in Fall 2022. [trane.com](http://trane.com) **CB**



# Distributors, Contractors and Succession Planning

One of the last business decisions HVAC contractors face is also one of the biggest.

by Candy Cunningham

**A**n effective succession strategy requires unique discipline, focus, and fortitude. It's easy to understand why many business owners put succession planning off as long as possible. It's complicated, time-consuming, and touches on sensitive topics such as family, money, and leadership.

First, some questions: *Can you afford to exit? / Is your business in solid financial shape? / If not, what will it take to get there? / Who will lead the company after you exit? / Who are all the stakeholders in the company, and what do you owe them? / What are the tax and other financial implications of your exit? / Is there a contingency plan?*

Most HVAC distributors aren't experts in succession planning for residential and commercial service contractors. So how can you help your customers prepare for this significant step?

## Make Life Easier for Them

You don't have to develop a succession strategy for your customers or introduce them to your financial planner. But every resource or service you share helps save time or effort and reduces day-to-day challenges inherent to running a contracting business. Doing this ensures they have more time to focus on a strategy to pass their company on to the next generation.

For HVAC distributors, it can be a critical way to build trusting, long-lasting relationships. Here are some proactive steps HVAC distributors can take to help their contractor customers thrive in the succession planning process.

## 1. Build the Best Training Network in Your Service Area

The less time business owners spend on training team members, the more time they have to take care of the financial and legal intricacies of their succession plan. Help your customers by offering comprehensive training support that frees them from the responsibility of coordinating or monitoring ongoing learning sessions. Connect customers with manufacturers who provide product training on maintenance, repair, and installations. Encourage manufacturers you work with to arrange training opportunities for the HVAC professionals in your area. Work with professional organizations and vocational schools to develop new opportunities.

## 2. Be a Resource for Regulations

Contractors, as a rule, keep up with the latest local, state, and national regulations that apply to their industry. In recent years, the pace and scale of regulatory change have accelerated. It's hard for one person to navigate the increasingly complex network of rules and regulations in any given service area.

You don't have to know everything about your area's codes and permits, licensing requirements, environmental standards, safety rules, or other regulations. You should know where to find that information quickly and understand how it affects your customers. Keep yourself in a position to answer any of their questions or to point them in the direction of experts who can help. Be

sure to include the latest news updates in your email marketing campaigns.

## 3. Be a Savings Clearinghouse

You have access to some of the most reliable and up-to-date information on rebates, and other savings opportunities contractors can apply to their purchases or offer customers.

## 4. Connect Customers with Pro Services, Information

Distributors must be prepared to guide contractors to helpful, professional services they may not be aware of, such as accounting, marketing, or dispatching services and software. These tasks can eat into the productivity and profitability of HVAC businesses and small business owners.

Help customers understand these time-consuming tasks can be automated or streamlined, freeing up time for succession planning. Cultivate relationships with representatives from local chapters of professional organizations who can clue you and your customers into all available resources.

Leveraging expertise, relationships and other available resources is a great way to demonstrate your commitment to your customers. Building trust over time may not solve their most complicated succession issues, but it can help them find the time and energy to address planning challenges. **CB**



**Candy Cunningham** is the *Distributor Relationship Specialist & Trainer for Business Development Resources (BDR)*, the premier provider of business

training and coaching to the home service industry. [www.bdrco.com](http://www.bdrco.com)

# Mergers & Acquisitions: Is it Time?

Selling your business may feel like the end of an era, but it can also introduce you to new beginnings.

by Dena Jalbert, MBA, CPA

**S**elling your business may feel like the end of an era, but it can also introduce you to new beginnings. Exploring what's next and what's possible for your HVAC company may be exactly what you need to transition into your next chapter.

Mergers and acquisitions (M&A) is a plausible way to grow your business while reaping the rewards of your many years of labor – whether enjoying retirement or aiming for bolder, greater goals.

Here's everything you need to know about M&A – including how it works for your industry and why now is the right time for you to sell:

## What is M&A?

Mergers and acquisitions are financial transactions between companies involving:

- The combination of two companies and then operating under one entity (merger)
- A company purchasing most or all of another's assets, gaining control of the latter (acquisition)

M&A is often used as a strategic move. The alliance of two companies or consolidation of assets allows the organization to grow. And contrary to common perception, it's something that does not happen only among mega-corporations. It's also a viable option for HVAC business owners looking to enhance their company's value when developing an exit plan.

The challenges of the HVAC industry today

HVAC is a hyper-fragmented market, with thousands and thousands of businesses across the country. These smaller businesses have the opportunity to grow and scale, but they don't have the capital to do so. Also, they don't have the buying power with the equipment manufacturers to optimize their margins.

## How do M&As Benefit HVAC Companies?

The consolidation in the HVAC industry enables smaller companies to join forces to make one larger organization, reap the economies of scale, and expand beyond where they could take the business on their own.

As of this writing, private equity (PE) dollars continue to pour into the HVAC industry. More than ever, PE firms are becoming acutely aware of the importance of heating, ventilation, and air conditioning

companies. These providers offer an essential home service, the demand for which has only risen as the work-from-home setup became permanent for many people. They also happen to be in an industry that proves to be recession-resistant.

With this robust M&A activity comes the opportunity for HVAC businesses to grow exponentially. There are also benefits to selling your company, including:

### Potential to Scale

When businesses consolidate or get acquired, the resulting organization is often more productive and efficient. The smaller company gains access to capital, gets better bargaining power, and reduces costs due to high-volume production.

### Access to New Markets

Usually, the acquirer kicks off an expansion strategy that broadens its market base. On the one hand, you're giving the buyer access to your loyal customers. On the other, being absorbed into its network allows you to tap new markets, which you will not otherwise have reached, given the time, money, and effort involved.

### Enhance capabilities

From lead generation to sales and marketing to disaster response, having a partner or acquirer can enhance your capabilities. It gives you access to training, knowledge, and best practices to improve your employee and customer retention.

### Reasons an M&A is Right for You

While the opportunities sound amazing, there are also risks associated with M&A. For this reason, you must weigh the pros and cons before deciding to sell your company. Here are the crucial factors that can help you determine whether pursuing an M&A is right for you:

### You've been planning your retirement

After creating and adding massive value to your business for many years, you're now planning to retire and pass on the baton. Selling your company helps unlock

*Continued on page 31*



# SERVICE CLINIC: Installation Defects Kill Air Filter Performance

Design and installation are critical ingredients for an air filter to perform as intended.

by David Richardson

**A**ir quality continues to be a hot topic in our industry. Your customers are more aware of the air they breathe than ever before. They also want the best filtration on the market to protect their loved ones and are doing more research than ever before. This research often leads them to a filter that looks good on paper but could have unintended consequences for their HVAC system.

There's much more to filtration than just the marketing hype. Design and installation are critical ingredients for an air filter to perform as intended. Let's look at four installation defects that kill air filter performance and reduce their effectiveness.



Measuring the return air filter grille pressure drop reveals much about the filter's condition. Pressure drops that look too good to be true can indicate a bigger problem, such as duct leakage.

National Comfort Institute

## 1. Poor Filter Rack Design and Installation

One common issue that kills air filter performance is the design and installation of the filter rack. Poorly fitting racks with inadequate seals allow unfiltered air to move around the filter instead of through it.

**It's important to remember the building connects to the HVAC system and could have as much, if not more, influence on the air quality problems you deal with.**

As you examine the systems, you maintain and service, it's common to discover gaps that could pull a cat through. When installed at the air-handling equipment, this bypass and leakage often result in dirt accumulating on the blower wheel, indoor coil, and secondary heat exchanger. A visual inspection and attention to detail are typically all you need to reveal this issue.

If the filter is the correct size, the repair is minor—you'll need sheet metal, gaskets, and silicone. If the filter is undersized, repairs are more involved. Many contractors will offer upgrades that include a sealed rack with a properly sized filter.

## 2. Filter Grilles and Duct Leakage

When an air filter is in a remote return grille, there are two sources of reduced filtration - the grille itself and return duct leakage. If you've ever heard a filter move back and forth in the grille as the blower turns on and off, you've encountered a poorly fitting filter grille.

As you probably know, air takes the path of least resistance. Remember that dirt travels along with it. Poorly fitting filter grilles result in unfiltered air moving into the system. You'll often notice this as dust streaking on the exiting airside of the filter.

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## SERVICE CLINIC

Duct leakage isn't as obvious a problem unless you dig deeper. Pressure in a system increases as you get closer to the blower. This means duct leakage increases near the air-handling equipment. Any unsealed penetrations in the return duct between the filter and equipment allow unfiltered air to enter the duct system. This air is from attics, crawl spaces, or garages, and it's air you don't want to breathe.

You can correct this with gasket material at the filter grille and targeted sealing of the return ducts. Before you perform this work, be sure the filter grille and return ducts are the correct sizes.

### 3. Excessive Filter Face Velocity

The next problem can appear even with a perfectly sealed filter rack and duct system. Excessive face velocity pulls particulate through the filter media instead of capturing it. You will typically encounter this when the media is undersized for the volume of air it filters.

Sizing is one reason pleated and electrostatic filters have such a poor reputation. It isn't the filter media itself; the size is the problem. Each filter media type has a specific airspeed range to operate within effectively. When airspeed exceeds this range, the filter cannot capture particulate. Instead, it pulls through or around the media. Then, it accumulates

inside the air-handling equipment or moves through the duct system.

It requires a bit of design work to correct this issue. Email me for a free procedure if you're interested in learning more about how to size an air filter. My email is below.

### 4. Air Handler Cabinet Leakage

Filter access panels, electrical penetrations, and cabinet leakage allow unfiltered air to move around the filter and introduce pollutants into the duct system. In recent years, equipment manufacturers have done a better job of reducing cabinet leakage. However, there is still a lot of equipment out there that needs your help.

**Each filter media type has a specific airspeed range to operate within effectively. When airspeed exceeds this range, the filter cannot capture particulate.**

This problem is like poor filter rack design. You can correct it using similar principles. You will use more silicone and gasket material to reduce cabinet leakage and ensure air passes through the filter. Attention to minor details can reap big rewards when solving this issue.

Remember, if you decide to reduce cabinet leakage, you must seal the panels in a manner that allows for access to the equipment later. Think twice about using mastic to accomplish this task. The service department will hunt you down if they have to chisel it off the panels.

### Look Beyond the Equipment

Don't forget to consider other particulates from exterior sources that may never even make it to the air filter. These include insulation fibers, pet dander, and vacuum cleaners that blow as much back into the room as it picks up.

It's important to remember the building connects to the HVAC system and could have as much, if not more, influence on the air quality problems you deal with. **CB**

*David Richardson serves the HVAC industry as director of training for National Comfort Institute, Inc. (NCI). NCI specializes in training that focuses on improving, measuring, and verifying HVAC and Building Performance.*

*If you're an HVAC contractor or technician interested in a free filter sizing procedure, contact David at [ncilink.com/ContactMe](http://ncilink.com/ContactMe) or call 800-633-7058. NCI's website [www.nationalcomfortinstitute.com](http://www.nationalcomfortinstitute.com) is full of free technical articles and downloads to help you improve your professionalism and strengthen your company.*

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## Section 608 Technician Certification

HVACR technicians are required to pass an EPA-approved test to earn Section 608 Technician Certification. The tests are specific to the type of equipment the technician seeks to work on.

**E**PA regulations (40 CFR Part 82, Subpart F) under Section 608 of the Clean Air Act require that technicians who maintain, service, repair, or dispose of equipment that could release refrigerants into the atmosphere must be certified.

Technicians are required to pass an EPA-approved test to earn Section 608 Technician Certification. The tests are specific to the type of equipment the technician seeks to work on. Tests must be administered by an EPA-approved certifying organization. Section 608 Technician Certification credentials do not expire. Core tests taken as an open book exam cannot be used to get your Universal Certification. The core test must be taken as a proctored exam in order to attain Universal Certification.

EPA regulations (40 CFR as above) under Section 608 of the Clean Air Act define a “technician” as an individual who performs any of the following activities:

- Attaching and detaching hoses and gauges to and from an appliance to measure pressure within the appliance.
- Adding refrigerant to or removing refrigerant from an appliance.
- Any other activity that violates the integrity of a motor vehicle air conditioner (MVAC)-like appliance or small appliance (other than disposal).

Apprentices are exempt from certification requirements provided they are closely and continually supervised by a certified technician.

### Types of Certification

EPA has developed four types of certification:

1. For servicing small appliances (Type I).
2. For servicing or disposing of high- or very high-pressure appliances, except small appliances and MVACs (Type II).
3. For servicing or disposing of low-pressure appliances (Type III).
4. For servicing all types of equipment (Universal).

The tests for each of these certification types cover different topics. Technicians must pass an EPA-approved test to earn Section 608 technician certification.

Below are some of the topics covered on the tests for each of the four types of technician certification. (Note that universal certification involves topics pertaining to the other three types of certification). The four types of certification are: Core; Type 1 (Small Appliances); Type 2 (High-pressure); Type 3 (Low-pressure).

### Core

#### Environmental Impacts

- Destruction of ozone by chlorine
- Presence of chlorine in chlorofluorocarbon (CFC) and hydrochlorofluorocarbon (HCFC) refrigerants
- Identification of CFC, HCFC, and hydrofluorocarbon (HFC) refrigerants (not chemical formulas, but idea that R-12 is a CFC, R-22 is an HCFC, R-134 is an HFC, etc.)
- Idea that CFCs have higher ozone-depletion potential (ODP) than HCFCs, which in turn have higher ODP than HFCs
- Understanding of the atmospheric effects from the types of refrigerants
- Health and environmental effects of stratospheric ozone depletion
- Evidence of stratospheric ozone depletion and role of CFCs and HCFCs

#### Clean Air Act and Montreal Protocol

- CFC phaseout date
- R-22 phaseout date
- Venting prohibition at servicing
- Venting prohibition at disposal
- Venting prohibition on substitute refrigerants
- Maximum penalty under the Clean Air Act
- Montreal Protocol (the international

agreement to phase out production of ozone-depleting substances)

### Section 608 Regulations

- Definition/identification of high and low-pressure refrigerants
- Definition of system-dependent versus self-contained recovery/recycling equipment
- Identification of equipment covered by the rule (all air-conditioning and refrigeration equipment containing CFCs or HCFCs except motor vehicle air conditioners)
- Need for third-party certification of recycling and recovery equipment
- Standard for reclaimed refrigerant [Air Conditioning, Heating, and Refrigeration Institute (AHRI) Standard 700-2016]
- The sales restriction
- The Clean Air Act prohibition on venting

### Substitute Refrigerants and oils

- Absence of “drop-in” replacements
- Incompatibility of substitute refrigerants with many lubricants used with CFC and HCFC refrigerants and incompatibility of CFC and HCFC refrigerants with many new lubricants (includes identification of lubricants for given refrigerants, such as esters with R-134; alkylbenzenes for HCFCs)

- Fractionation problem--tendency of different components of blends to leak at different rates

## Refrigeration

- Refrigerant states (vapor versus liquid) and pressures at different points of refrigeration cycle; how/when cooling occurs
- Refrigeration gauges (color codes, ranges of different types, proper use)
- Leak Detection

## Three R Definitions

- Recover
- Recycle
- Reclaim

## Recovery Techniques

- Need to avoid mixing refrigerants
- Factors affecting speed of recovery (ambient temperature, size of recycling or recovery equipment, hose length and diameter, etc.)

## Dehydration Evacuation

- Need to evacuate system to eliminate air and moisture at the end of service

## Safety

- Risks of exposure to refrigerant (e.g., oxygen deprivation, cardiac effects, frost bite, long-term hazards)
- Personal protective equipment [gloves, goggles, self-contained breathing apparatus (SCBA)-in extreme cases, etc.]
- Reusable (or "recovery") cylinders versus disposable cylinders [ensure former Department of Transportation (DOT) approved, know former's yellow and gray color code, never refill latter]
- Risks of filling cylinders more than 80 percent full
- Use of nitrogen rather than oxygen or compressed air for leak detection
- Use of pressure regulator and relief valve with nitrogen

## Shipping

- Labels required for refrigerant cylinders (refrigerant identification, DOT classification tag)

## Type 1 (Small Appliances)

### Recovery Requirements

- Definition of "small appliance"
- Evacuation requirements for small appliances with and without working compressors using recovery equipment manufactured before November 15, 1993

- Evacuation requirements for small appliances with and without working compressors using recovery equipment manufactured after November 15, 1993

## Recovery Techniques

- Use of pressure and temperature to identify refrigerants and detect noncondensables
- Methods to recover refrigerant from small appliances with inoperative compressors using a system-dependent or "passive" recovery device (e.g., heat and sharply strike the compressor, use a vacuum pump with non-pressurized recovery container)
- Need to install both high and low side access valves when recovering refrigerant from small appliances with inoperative compressors
- Need to operate operative compressors when recovering refrigerant with a system-dependent ("passive") recovery device
- Should remove solderless access fittings at conclusion of service
- Hydrofluorocarbon (HFC)-134a (also called R-134a) as likely substitute for chlorofluorocarbon (CFC)-12 (also called R-12)

## Safety

- Decomposition products of refrigerants at high temperatures

## Type 2 (High-Pressure)

### Leak Detection

- Signs of leakage in high-pressure systems (excessive superheat, traces of oil for hermetics)
- Need to leak test before charging or recharging equipment
- Order of preference for leak test gases [nitrogen alone best, but nitrogen with trace quantity of hydrochlorofluorocarbon (HCFC)-22 (also called R-22) better than pure refrigerant]

### Leak repair requirements

- Allowable leak rate for commercial and industrial process refrigeration
- Allowable leak rate for other appliances containing more than 50 pounds of refrigerant
- Leak repair recordkeeping
- Extensions to the timeframe to repair leaks that exceed the threshold leak rate

## Recovery Techniques

- Recovering liquid at beginning of recovery process speeds up process

- Other methods for speeding recovery (chilling recovery vessel, heating appliance or vessel from which refrigerant is being recovered)
- Methods for reducing cross-contamination and emissions when recovery or recycling machine is used with a new refrigerant
- Need to wait a few minutes after reaching required recovery vacuum to see if system pressure rises (indicating that there is still liquid refrigerant in the system or in the oil)

## Recovery Requirements

- Evacuation requirements for high-pressure appliances in each of the following situations:
  - Disposal
  - Major versus non-major repairs
  - Leaky versus non-leaky appliances
  - Appliance (or component) containing less versus more than 200 pounds
  - Recovery/recycling equipment built before versus after November 15, 1993
- Definition of "major" repairs
- Prohibition on using system-dependent recovery equipment on systems containing more than 15 pounds of refrigerant

## Refrigeration

- How to identify refrigerant in appliances
- Pressure-temperature relationships of common high-pressure refrigerants [may use standard temperature-pressure chart--be aware of need to add 14.7 to translate pounds per square inch gauge (psig) to pounds per square inch absolute (psia)]
- Components of high-pressure appliances (receiver, evaporator, accumulator, etc.) and state of refrigerant (vapor versus liquid) in them
- The idea that hydrocarbons are not approved for retrofits

## Safety

- Shouldn't energize hermetic compressors under vacuum
- Equipment room requirements under American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Standard 15 (oxygen deprivation sensor with all refrigerants)

## Type 3 (Low-pressure)

### Leak Detection

- Order of preference of leak test pressurization methods for low-pressure systems



# Refrigeration *Service Today*

1. Hot water method or built-in system heating/pressurization device such as Prevac
  2. Nitrogen
- Signs of leakage into a low-pressure system (e.g., excessive purging)
  - Maximum leak test pressure for low-pressure centrifugal chillers
  - Leak inspection requirements for appliances that exceed the leak rate
  - Reporting for chronically leaking appliances

## Leak repair requirements

- Allowable annual leak rate for commercial and industrial process refrigeration
- Allowable annual leak rate for other appliances containing more than 50 pounds of refrigerant

## Recovery Techniques

- Recovering liquid at beginning of recovery process speeds up process
- Need to recover vapor in addition to liquid
- Need to heat oil to 130°F before removing it to minimize refrigerant release

- Need to circulate or remove water from chiller during refrigerant evacuation to prevent freezing
- High-pressure cut-out level of recovery devices used with low-pressure appliances

## Recharging Techniques

- Need to introduce vapor before liquid to prevent freezing of water in the tubes
- Need to charge centrifugals through evaporator charging valve

## Recovery Requirements

- Evacuation requirements for low-pressure appliances in each of the following situations:
  - Disposal
  - Major versus non-major repairs
  - Leaky versus non-leaky appliances
  - Appliance (or component) containing less versus more than 200 pounds
  - Recovery/recycling equipment built before versus after November 15, 1993
- Definitions of “major” and “non-major” repairs

- Allowable methods for pressurizing a low-pressure system for a non-major repair (controlled hot water and system heating/pressurization device such as Prevac)
- Need to wait a few minutes after reaching required recovery vacuum to see if system pressure rises (indicating that there is still liquid refrigerant in the system or in the oil)

## Refrigeration

- Purpose of purge unit in low-pressure systems
- Pressure-temperature relationships of low-pressure refrigerants

## Safety

- Equipment room requirements under ASHRAE Standard 15 (oxygen deprivation sensor with all refrigerants)
- Under ASHRAE Standard 15, need to have equipment room refrigerant sensor for R-123

Source: U.S. Environmental Protection Agency

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BY CHARLIE GREER

## 10 Best Things to Do on Service Calls

Here are the top ten ways service techs and salespeople can gain credibility:

**1. Put their mind at ease regarding their immediate problems within the first two minutes.** Address the situation or need that prompted the service call first. Then you're their hero and their mind will be relaxed and open to what else you have to say. Don't walk in the door and start selling service agreements or bringing up additional products or services until you've put their mind at ease regarding their original complaint.

Develop a calming, comforting, and reassuring tone of voice when explaining the problem, when it can be repaired, and the price to do so.

**2. Check everything over.** The more stuff you look at, the more things you'll find that require attention. You'll quote more work on every call, and the more you quote, the more you'll sell. The more you sell on every call, the more profitable you'll become.

**3. Be an "active listener."** Customers want to be listened to and won't know you're listening unless you acknowledge what they've said, and demonstrate that you've heard them and understand their concerns. You do this by:

- Standing and listening, without doing anything else, while they're talking
- Repeating back to them what they've just said to you (even if it was erroneous or insane).

**4. Make eye contact.** People respond positively to eye contact and associate it with honesty. Plus, it shows confidence, which is extremely important. They want you to be confident.

**5. Make a positive visual impression.** Your first impression is crucial, and it's usually visual.

Ideally, service techs should base their personal appearance decisions on what will appeal to the widest variety of people possible. This includes the proper footwear, headgear, belt buckle and undershirt. This also includes your tools. If you're selling "quality," you better not be using cheap tools.

**6. Be organized.** This pertains to everything from your presentation, to your appearance, to the way you use your tools, to your truck.

From the moment you greet the customer, it must be obvious that you are:

- A professional
- Successful at what you do
- Have done this before and have a standard procedure that you follow in this type of situation

- Competent enough to be trusted to take this job and get it done without being watched.

They want you to be able to reach behind you to your tool pouch and, without looking, pull out the right tool and replace it when you're done. They don't want to see things thrown about randomly in your truck.

Don't spread things around in a haphazard fashion, talk to yourself, or make grunting or "struggling" noises while working on the equipment.

Carry a small mat with you and lay your tools and parts on it while you work.

Leave the work area as clean as you found it.

**7. Get the customer involved.** It's okay for the customer to leave you alone while you're doing your diagnostic procedure. In fact, it's often desirable. When it comes time to present your finding and recommendations, it's best to talk about the problem in front of the problem.

**8. Speak in simple terms.** Don't try to impress your customers with your intelligence by using a lot of big words. A confused mind always says "no." Keep your explanations short, simple and to the point.

**9. Do the whole job on the first visit.** For many techs, the focus is on running the maximum number of calls per day. This means often deliberately ignoring repairs or procedures that would benefit the customer, but are non-essential. This type of "tunnel vision" approach can cause callbacks, and one callback can suck the profits out of an entire day's work.

Doing everything that needs to be done while you're there reduces (or even eliminates) callbacks, and cuts down on travel time, which actually frees you up to see more customers and run more billable calls.

**10. Make sure customers understand their paperwork.** This goes a long way toward eliminating those annoying after-the-fact phone calls to the office from absent spouses, friends and family members. Doing neat paperwork and avoiding calls after the fact goes a long way toward making the people in the office happy and keeps them on your side. **CB**



**CHARLIE GREER** was voted "Favorite Industry Sales Trainer," is a member of the HVAC Hall of Fame, and the creator of "Tec Daddy's Service Technician Survival School on DVD". For information on Charlie's schedule or products, call 1-800-963-4822 or go to [www.hvacprofitboosters.com](http://www.hvacprofitboosters.com). Email Charlie at [charlie@charliegreer.com](mailto:charlie@charliegreer.com).



*Continued from page 21*

that value. Use your retirement funding goals to evaluate if the market conditions can generate the outcome you expect from the exit transaction.

**Potential for Expansion**

We cannot emphasize enough how PE investors can provide smaller businesses with additional capital, enabling them to scale. The potential to grow your company into a larger enterprise is possible after being acquired by a buyer or consolidated with other entities. With the latter, the acquirer plans to generate greater value—in which you can participate by retaining a smaller percentage of your stock – and then sell the resulting company to another investor in the future. This approach is called taking a “second bite of the apple.”

**Favorable Market Conditions**

Dealmaking in the HVAC industry remains robust. An average of more than 120 M&A transactions occur each year, compared to approximately 20 in 2011. The demand is high for strong assets. However, M&A experts highlight that the next cycle may not happen again for another decade. So if the factors align, they recommend taking advantage of the opportunity. Otherwise, it might be too late, and you’ll find

yourself competing with larger entities with access to these deep pockets instead.

**Timing is Key**

With a high investor demand, HVAC companies must be proactive in determining the right opportunity. If the signs are pointing to a profitable deal, you might want to seize it before this cycle finishes running its course.

During this time, an experienced M&A advisor can give you the knowledge and insight to analyze investment trends and evaluate market demand. Look for an expert who can make your exit transaction as smooth as possible by offering custom, strategic solutions so that you can choose the right buyer and snag the highest possible valuation for the business you have built for years. **CB**



**Dena Jalbert, MBA, CPA**, is the founder and CEO of Align Business Advisory Services, a top-rated mergers & acquisitions advisory firm for lower-middle-market businesses. Align is comprised of former business owners, operators, and executives who leverage their experience and extensive network to maximize the value of clients’ business.

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BY MATT MICHEL

## The Five R's of 2023

There are lots of dark clouds on the horizon for the economy and the HVAC industry. Fortunately, there are silver linings for residential replacement contractors.

### Record Profits

Something funny happened in the face of the shipment cliff for the replacement market. The shipment cliff was a reflection of the 40% contraction of the industry from 2005 to 2009, with 2010 essentially flat from 2009. The pandemic resulted in a large number of deferred replacements from 2020 into 2021, delaying the advent of the shipment cliff. However, it was expected to show up in 2022. Yet, revenue was up.

The increase in revenue was wholly the result of input price increases to contractors that were passed along by most contractors. Price increases hid the reduction in unit replacements.

Combine the greater revenue across fewer changeouts with less overall installation labor and record profits result. Enter



**Bad news on the RNC front affects the replacement market.**

SEER2 and the accompanying 18% to 25% price increases projected by manufacturers the same formula will apply in 2023 that made 2022 such a great year for contractor P&Ls in the residential replacement market.

### Record Plunge

The residential new construction (RNC) market outlook is in stark contrast to the replacement market. It is not pretty. As mortgage interest rates rise, home affordability plunges, taking housing starts with it. The National Association of Home Builders' Housing Market Index has dropped to 2012 levels.

Bad news on the RNC front affects the replacement market as new construction contractors step up their changeout activity. The additional competition is less of a problem than the new construction contractors' pricing practices.

### Recordkeeping

Starting in 2023, the SEER2 minimum efficiencies will kick in. If contractors have old inventory that fails to meet the new efficiency levels in the south and southwest regions, it will be illegal to install it. Furthermore you must prove your installations comply with record keeping. Contractors will be required to maintain model numbers, serial numbers, and AHRI matches for four years. While this is not overly



onerous, it is also easy to fall behind where it may be impossible to catch up.

In addition, the expected surge of IRS agents will create additional tax related recordkeeping burdens on contractors. The "wealthy" who will be targeted are likely pass through corporations (S-corps, and LLCs) that characterize most contractors. Now is the time to work with your CPA and review your reporting and ensure all business expenses are clean, legitimate, and defensible.

### Rebate Confusion

There is a lot of anticipation in the contracting community about the High-Efficiency Electric Home Rebate Program (HEEHRP). There is also a lot of confusion. The 100% qualification applies to consumers earning less than 80% of the area median income. The 50% qualification applies to consumers earning between 80% and 150%. It seems impossible for contractors to make these assessments, putting the qualifying burden on the customers. To add further confusion, each state energy office will administer the program, raising the prospect of 50 different approaches.

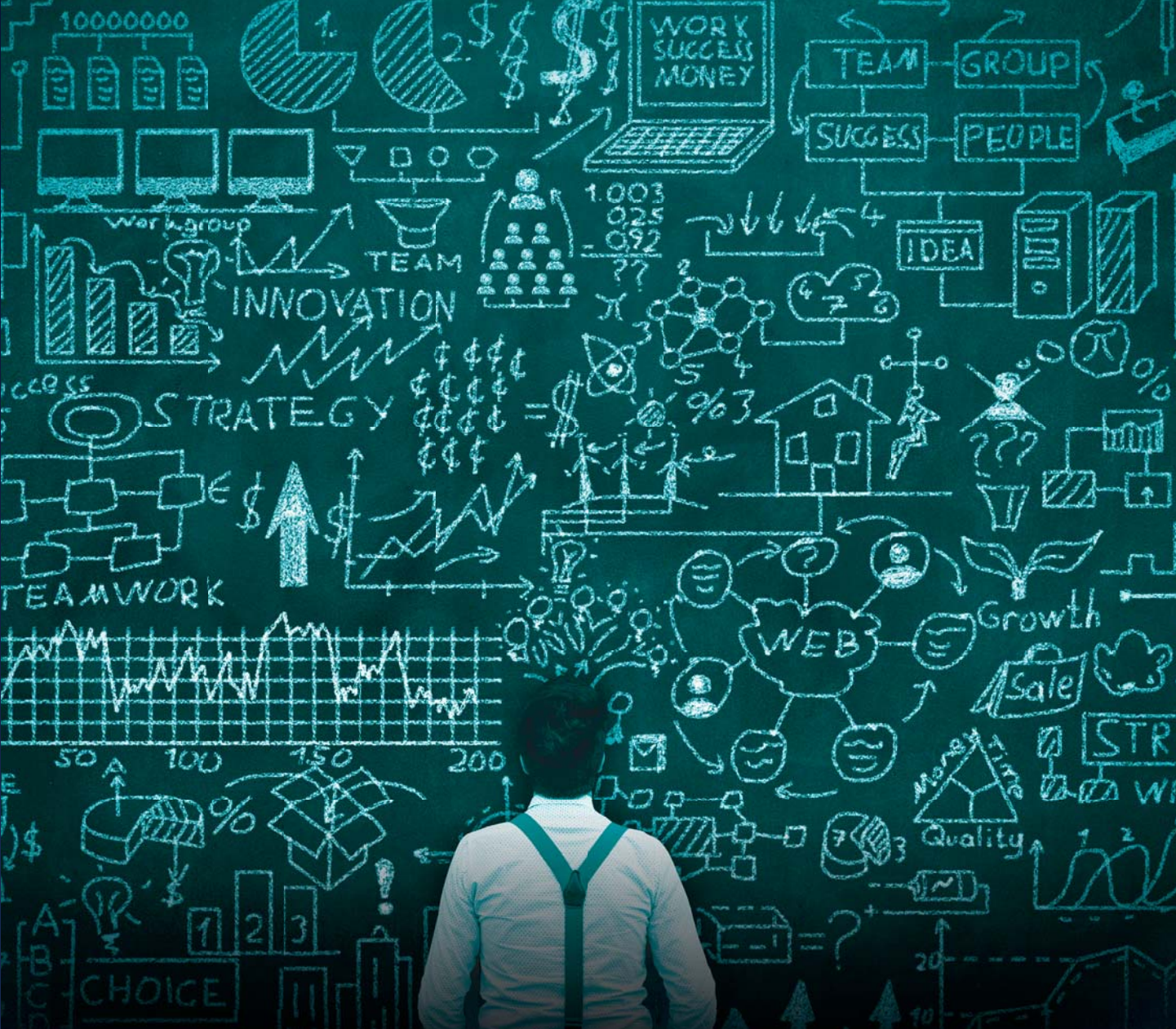
Even with the rebates, it seems unlikely that low-income homeowners will be able to afford qualifying equipment without long-term financing, which they are also unlikely to qualify for. Thus, the most likely recipients of the rebates are high worth retirees with little or no ordinary income, *if their state energy office does not count passive income towards the median income.*

### Refrigerant Confusion

No sooner will the industry absorb SEER2 than the new refrigerants will sweep in. It appears that manufacturers will settle on two different refrigerants, R-32 and R-454B. This means carrying four jugs of refrigerant when R-22 and R-410A are included. What can possibly go wrong? **CB**

*To minimize confusion and maximize opportunity in 2023 for your contracting business, join the Service Roundtable, contracting's largest business alliance. Learn more at [www.ServiceRoundtable.com](http://www.ServiceRoundtable.com) or call 877.262.3341.*





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Discover our next generation of single zone ductless products with low Global Warming Potential (GWP) R-32 refrigerant. Daikin *ATMOSPHERA* is available in four sizes from 9,000 to 24,000 BTU and is the first product from Daikin to use R-32 refrigerant in North America. Daikin *ATMOSPHERA* reduces the Global Warming Potential impact on the environment by up to 80% compared to similar R-410A systems. And R-32 has been shown in Daikin's labs to increase efficiency by up to 12% over R-410A with comparable products, lowering electricity consumption and indirect emissions. A noteworthy new feature includes a new hybrid cooling technology that dehumidifies even in low cooling loads and continues to maintain dehumidification once a set-point temperature is reached. The indoor unit also includes built-in Wi-Fi for connectivity to the Daikin Comfort Control App. In addition to the included wireless I/R controller, Daikin *ATMOSPHERA* is compatible with several other Daikin controllers, including the Daikin *One+* smart thermostat.



### ADDITIONAL INFORMATION

Before purchasing this appliance, read important information about its estimated annual energy consumption, yearly operating cost, or energy efficiency rating that is available from your retailer.

**R32**

Up to 27.4 SEER  
Up to 13.8 HSPF  
Up to 16.3 EER





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<sup>1</sup>Trane received the highest numerical score in the proprietary Lifestory Research America's Most Trusted<sup>®</sup> HVAC Brand study for years 2015, 2016, 2017, 2018, 2019, 2020, 2021 & 2022. Study results are based on experiences and perceptions of people surveyed. Your experiences may vary. Visit [www.lifestoryresearch.com](http://www.lifestoryresearch.com).