

# TODAY'S A/C

## & REFRIGERATION NEWS

### Serving the Southeast Region

Florida, Georgia, Alabama, Tennessee  
North Carolina, South Carolina



SFACA Hosts "Happy Hour"  
Zoom Meeting Online (see page 6)



RGF Environmental Group Continues to Help  
America Get Back to Business (see page 12)



Reconnecting Refrigeration Equipment  
After Quarantine (see page B10)



Ritchie Introduces The BulletX  
Vacuum Pump (see page 10)

## The Next Six Months: Scenario Planning for a Pandemic Economy



Jeff Schlichenmeyer  
Publisher

Covid-19 dramatically altered the contracting and distribution landscape in the first-half of 2020. Although the impact has been uneven, nearly all businesses in the plumbing, heating, and cooling industry have been affected by the viruses outbreak and the subsequent economic shutdown. As stay-at-home orders are being lifted and the typically busy summer season upon us, what might the future hold for the industry?

Tim Fisher - HARDI Team Leader of Market Intelligence - conducted a webinar and discussed various economic scenarios in play for the rest of the year, and how each scenario could affect contractor and distributor businesses.

Economic forecasting, no matter the pedigree or experience of the one making the prediction, is a humbling exercise. Projecting one month into the future is difficult, but if your methodologies and understanding of the economic landscape are sound, you can make predictions with a high degree of accuracy. Projecting two to three months out requires largely the same amount of work as projecting one month out, but the number of variables that can affect the economy - for good or for bad - increase dramatically. For example, in late December the HARDI Market Intelligence team began its process of evaluating the landscape and building industry forecasts based on historical trends and what we knew in the moment. So how did those forecasts pan out? Well January looked great, but something odd

happened in mid-February that ruined our outlook. Sarcasm aside, the rise of Covid-19 perfectly illustrates my point - despite our understanding of the world as it appeared to us in December, we could not and did not accurately predict the world of June 2020. Nevertheless, forward-looking projections are an essential part of business, and as such, in the paragraphs that follow I outline a range of possible scenarios HARDI is exploring for how the next six months might play out.

### Worst Case Scenario: Second Shutdown

The Covid-19 outbreak and subsequent economic shutdown sparked a recession unlike any in modern history. During what has to this point been the worst stage of the crisis, unemployment leapt from 3.5 percent in February to 14.7 percent in April - a loss of more than 20 million jobs. Fortunately, as the lockdowns have eased and business activity has resumed, the weekly increase in unemployment claims appears to be relenting. Unemployment declined to 13.3 percent in May, and 2.5 million people went back to work. However, as medical experts have warned, the recent spike in Covid-19 cases shows that we are not yet out of the woods. Should the current uptick in cases trigger government-imposed shutdowns around the country, the HVACR industry should be prepared for extensive losses. A second shutdown would cause an increase in job losses and place mounting stress on American households - many of whom are already at their breaking point. From an industry standpoint, it seems highly unlikely that households or businesses concerned about their economic health would launch new construction projects or replace aging equipment when a simple repair job will do.

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## Service World Expo Is On In Tampa, Florida



(COPPELL, Texas) - June 29, 2020 - Service Nation, Inc. announced that Service World Expo, the largest residential contracting show in the nation, will proceed as planned on September 22 - 24, 2020, at the Tampa Bay Convention Center. This is the first year Service World Expo will be held in Tampa, Florida.

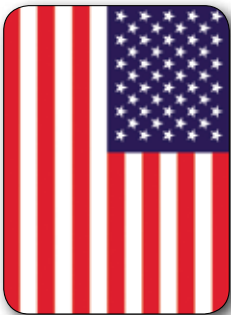
The upcoming event will be the fifth annual expo and has rapidly become the premier event of its kind. The expo is designed for residential busi-

ness owners who want to improve their profitability by leveraging the newest strategies and leadership techniques. With incredible breakout speakers, numerous networking events, and an exhibit hall that provides the latest technologies, attendance for residential business owners is a must.

"Service World is a game-changer for residential contractor business owners," said Matt Michel, President of Service Nation. "Even with the current pandemic, residential home services business owners are seeing some of their best growth ever. The expo provides attendees the latest innovations, best business practices, and expert training to help business owners thrive for years."

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A contractor was curious about our new pricing package (see below).

He was a smaller contractor who had it in his head, i.e. believed, that he had to have the lowest prices for a customer to buy. He couldn't explain a \$200 difference in the price to replace a system.

He told me that all of the customers with money were taken by other contractors. There was nothing that I said that changed his mind...or even opened his mind to the possibility that people don't always buy on price (ok, about 20% of the population does...those are not your customers).

I finally said, "I can't help you." We amicably hung up the phone. And it truly was I CAN'T help you rather than I WON'T help you.

Soon after I got really frustrated. I knew that he was destined for low, if any, profitability and wouldn't have the funds to grow unless he changed his mindset. He bought a job rather than was operating a company. And there was nothing I could do to change his mind.

Will there be times that customers won't buy? Of course. It's often been said that people buy at the speed of trust. If they trust you quickly, then they will buy from you quickly. If they don't trust you, they won't buy until they do. And, if they never trust you, then they won't ever buy from you.

This contractor, who was convinced that people bought only on price and that all the people with money were being taken care of by other contractors, never got their trust. If he had, he could have explained the difference in prices and why his higher price was more advantageous to the customer. Would they all have bought? Probably not. However, more would have.

Selling on price alone doesn't work in the long run. That's why Val-pak doesn't work, in my opinion, for the long term. Every study I have done with contractors who have used Val-Pak shows that these people are interested in the lowest price only.

You get the low price sale mentioned in Val-Pak, but at what profitability? People who call are not loyal. They don't invest in maintenance plans. They are the 20% who always buy on price. If you're not in Val-Pak the next time, they will call a contractor who is. (NOTE: If you have different results and are willing to share, I'd love to talk with you about your results...I'd love to be proven wrong in this one!)

Unless you are WalMart or Amazon whose sales volume is in the billions, if your profits aren't high enough with a reasonable net profit per hour, you don't have the cash to give raises, buy trucks, invest in training, and other necessary things to find and keep great employees.

Lee Rosenberg, one of my first clients in the 1980's, always said that, "It is easy to make money in this industry and it is easy to lose your shirt in this industry." Lee was President of ACCA and with his son, operates a very profitable company in San Antonio, Texas.

So, do you want customers who appreciate value, are loyal to you, and allow you to earn a reasonable profit... or do you want customers who only buy on price? The choice is yours.

Next Up: Four Ways to Get Rid of Your Hidden Sales Prevention Department

Last week I wrote about uncovering your hidden sales prevention department. If you discovered that you actually have one, here are four ways to get rid of it.

1. Talk about it. Bring the subject out in the open. Give stories where you thought that a customer wouldn't be interested in IAQ, a new system, a remodeling project, etc. and you were pleasantly surprised when the customer said yes.

This is a conversation you might have many times in many meetings until everyone gets comfortable

asking the questions and getting rid of their own biases.

2. Role play. Get everyone comfortable asking the questions you want asked. If your employees can ask the questions in front of their peers, they can ask them in front of the customer. Here are a few questions:

- Does anyone in your home have allergies?
- Do you have hot or cold rooms in your home?
- Your equipment is reaching the manufacturer's expected life, you might want to think about replacing it.

3. Record telephone conversations.

This is the best way to teach your team members who are in contact with your customers by phone. The team members are often surprised at what they say since they don't remember their exact words or tone.

4. Ride with the technicians.

When you ride with the technicians you can show them how you want the questions asked in the customer's home or office. The rule: watch one, do one, (and sometimes teach one).

When you eliminate your sales prevention department, you will have more engaged customers, a growing customer referral base, and more revenue.

Check out 9 Critical Thinking Skills Videos added to the Soft Skills Videos on HVACChannel.tv

Sometimes it is not the technical things that cause you to lose a customer. Sometimes it is the intangibles, the soft skills, that cause you to lose a customer. "Soft skills" are critical to keeping and growing your customer base. This video series is designed to help your team improve listening skills, communication skills, and build a more than satisfied customer base.

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## Indoor Air Hygiene Solution Center Combines Expertise from Industry Leaders to Help Reduce Viral Spread as the World Re-Opens

Chicago, Illinois – June 24, 2020 – The leading Indoor Air Quality experts within Madison Industries have joined forces to launch the Indoor Air Hygiene Solution Center at [IndoorAirHygiene.com](http://IndoorAirHygiene.com) to further their shared mission to make the world safer, healthier and more productive in the fight against COVID-19. This free resource will help people open their doors with confidence and maintain healthy indoor spaces moving forward—from universities and school districts to businesses and medical facilities.

“As the scientific community better understands the spread of COVID-19, they are increasingly looking at airborne transmission. People are unsure about the safety of re-opening and the health risks associated with going back to the indoor spaces we are used to,” said Kris Howard, Group President, Filtration Group Indoor Air Quality. “The collective, unparalleled expertise we have in HVAC and air filtration across Madison Industries is now all in one place. Our group of experts can offer scientifically validated advice and solutions that ensures the high quality of air in these spaces.”

The average American spends up to 90% of their time indoors, making it more important than ever that the indoor environments in which we live, work, shop, socialize and receive medical care are optimized to keep us safe from the novel coronavirus and other airborne pathogens. The resource center at [IndoorAirHygiene.com](http://IndoorAirHygiene.com) provides step-by-step guides and personalized recommendations that will help people purify the air by removing pollutants, managing humidity, bringing fresh outside air to indoor spaces and/or cleaning recirculated indoor air—all critical measures to reduce viral spread.

Indoor Air Hygiene also provides a competitive advantage to business owners who communicate their focus on safety to their employees and customers. The solutions available in the Indoor Air Hygiene Solution Center are designed to give employees and customers peace of mind and confidence that their safety is the top priority.

The Indoor Air Quality innovators and entrepreneurs across Madison Industries are leading experts in every aspect of air hygiene, including HEPA filtration, air sanitation, humidity control, ventilation, sanitized make-up air, molecular filtration and cleaning/remediation protocols. Industry leading brands include Addison, Phoenix, Santa Fe, Ultra Aire, Quest, Rapid Engineering, WeatherRite, Phoenix Air Systems, Bananza, Purafil, Dafco, and Filtration Group HVAC. For more information visit [www.indoorairhygiene.com](http://www.indoorairhygiene.com).

## Air Pros USA Brings Cleaner Air to Boys and Girls Clubs of Broward County

*Local company teams with Fresh-Aire UV and Gemaire Distributors to install UV light technology*

Davie, FL (July XX, 2020) - Air Pros USA Residential and Commercial Air Conditioning Services (Air Pros USA) teamed up with industry partners to donate and install 150 Fresh-Aire UV light systems to the Boys and Girls Clubs of Broward County (BGCBC), Florida. This collaborative donation brings advanced UV technology to 11-club locations so returning children and volunteers will have healthier indoor environments.

“The need for quality indoor air is more critical than ever. We are hopeful that our efforts to improve the air in these safe environments will help more families have the confidence to let children return to the clubs and take advantage of their amazing programs,” said Anthony Perera, founder of Air Pros USA.

Perera is also an Advisory Council member for BGCBC and aligns closely with their mission to enable youth to reach their full potential as productive, caring, and responsible citizens.

“We are constantly working to make the clubs safe for children to pursue their passions and this donation gives us peace of mind that we will all be breathing cleaner air as we welcome back kids and teens,” said Matt Organ, of Boys and Girls Clubs of Broward County. “We’re thankful to Anthony and his partners for their generous contributions.”

To make the donation possible, Perera teamed up with Gemaire Distributors, a wholesale distributor of air conditioning and heating equipment and related parts and supplies in the HVAC/R industry, and Fresh Aire-UV, an award-winning commercial and residential UV light and carbon products provider.

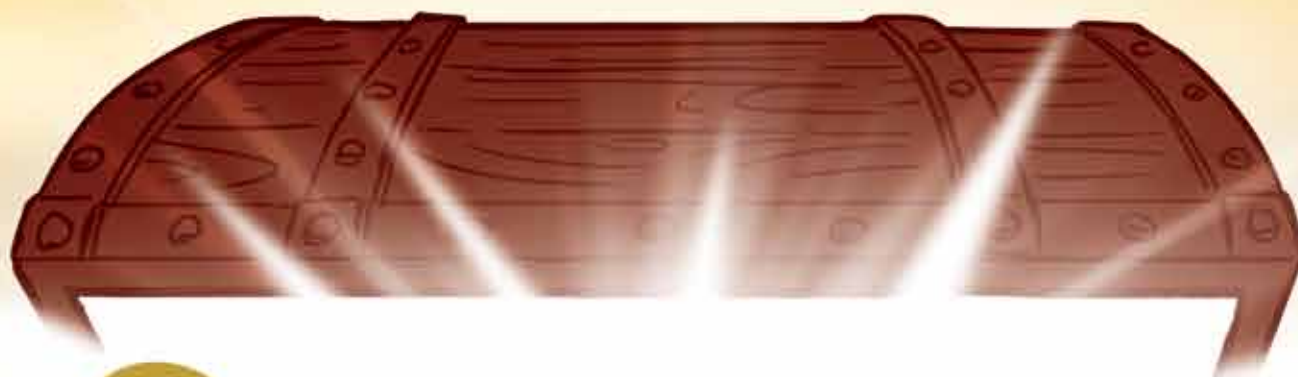
“I am extremely happy to have found business partners and friends at Gemaire Distributors and Fresh-Aire UV and grateful they stepped up for the community to help make this idea become a reality.”

UV light technology compliments air conditioning systems to improve indoor air quality by neutralizing viruses and other microbes as the air circulates through the ventilation system. UV light systems are tested and validated against surface bacteria, viruses, mold, and fungus, and have been shown to achieve up to 99.999996% reduction on microorganisms.

Air Pros USA was founded in South Florida in 2017 on the premise of integrity, reliability, and putting our customers first. Air Pros USA currently employs over 250 experienced professionals with 10 Service locations.



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## SFACA Hosts "Happy Hour" Zoom Meeting Online



SFACA conducted their first zoom meeting with their members giving brief overviews on Covid related topics. The Zoom meeting was held at 5pm, on Wednesday, June 17th. There was no cost for this event and it was open to everyone. The zoom meeting included two speakers: Skip Farinhas, SFACA President, and Ellis Wallman of CertiPay.

Skip Farinhas spoke about new legislation on PPPFA which is a reboot of PPP program. It was ex-

tended to 24 weeks and has better benefits like 5 year terms. Ellis Wallman discussed the payroll services and promotions available currently from CertiPay.

SFACA has been working hard to answer questions and keep the Covid Resource page on their website updated with current information. SFACA continues to only reach out with important updates as they don't want to overwhelm inboxes, while doing their best to support their members during this time.

One of SFACA's goals has been to provide social networking opportunities with topical speakers and to provide beneficial programs direct to their members during their meetings.

Due to the current social distancing guidelines, this has been challenging to do. SFACA is working to find an alternative to dinners and events. The silver lining to these alternatives is that SFACA is preparing for potential future meetings as well as provide virtual opportunities to their members.

## BIZCENTER USA Installs Advanced Body Scanner

BIZCENTER USA just installed a sophisticated Infrared Thermal Scanner model UTi 165K at its Reception. Now, everyone approaching our Reception is automatically scanned for body temperature. This advanced system automatically scans groups of people so avoiding the embarrassment of scans that must be placed too close to an individual. Whenever UTi 165K scans someone with a fever it emits a discreet signal.

BIZCENTER USA is the first coworking facility in Orlando to offer hospital-grade air filtration and purification. This next-generation Reme Halo system that we installed, produced by RGE, a leading environmental American company, comes with PHI and UV technology and is designed to eliminate bacteria, viruses, mold spores, odors, air pollutants and chemical odors. Reme Halo brings relief to those who suffer from allergies and other respiratory related issues, and kills 99% of viruses such as MRSA, H1N1, Norovirus, Swine Flu, and even the coronaviruses SARS-COV-1 and MERS-COV. The addition of Reme Halo to our four air conditioning units represents a tremendous plus in a safer environment for our clients.

Since the start of this pandemic BIZCENTER USA improved its cleaning methods with the use of industrial products such as the Vanguard Briza, sprayed all-day long throughout the company to kill bacteria, viruses and provide a pleasant fresh scent. Dutch Plus, a disinfectant applied to all surfaces such as tables, chairs, and door handles, is officially approved against a number of bacteria and viruses, including hepatitis A, B, C, Influenza A, HIV, H1N1, SARS-COV-1, and MERS-COV. A wall dispenser with foaming alcohol hand sanitizer and protective masks are freely available at the entrance.

We are proud to have only 23 private executive suites within our fully owned 4,400 sq. ft. facility and no shared desks or hot desks. Our architecture layout provides an easy way to keep social distancing at the same time that allows peace of mind for our suite users, thanks to sound reduced walls and ceilings, for a great, healthy, and secure working environment. Two internet connections – one with ultrafast 1 Gb – setup with load balancing and failover guarantee the best wired and wireless experience.

## Service World Expo Is On in Tampa, Florida

**Continued from cover**

"We feel it is important to continue with the show to support our essential workers who are out there working diligently to keep all of us safe during this difficult time," said David Heimer, Senior Vice President of Service Nation. "With that said, safety is our primary concern for the show as well. We will be working with the Tampa Convention Center, adhering to the latest CDC recommendations, and taking further steps to ensure our attendees are safe while attending the show."

Service World Expo will employ the following safety measures: temperature screenings, complimentary face masks, hand sanitation stations, and increased cleaning and sanitation of common areas.

Breakout sessions include highly sought after topics such as training, marketing, technology, operations, finance, and newly launched remodeling. Prices are currently \$349 until July 1st when it increases to \$369, then \$379 until September 1st, and \$499 until and during Service World Expo.

Service World Expo is an innovative, must-attend conference, trade show, and networking event for residential contractors in the Plumbing, HVAC, Electrical, or Remodeling industry. The event will feature inspirational keynotes like author and motivational speaker Kevin Brown, educational breakout sessions, a product showcase, and unbelievable experience you can only get in Tampa. For more information on Service World Expo, visit [www.ServiceWorldExpo.com](http://www.ServiceWorldExpo.com), email [info@ServiceWorldExpo.com](mailto:info@ServiceWorldExpo.com), or call 844.742.3970.



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# Trade Talk:

**By Tommy Castellano**  
Owner, Castellano A/C Services  
in Tampa, Florida



## It's Great to be an HVAC Contractor!

July is a really good month for the HVAC contractor ... especially if you live in beautiful, hot and humid Florida. The hotter it is, the better we like it ... right?

The phone is ringing off the hook for service calls ... the office is buzzing with everyone working non-stop from the moment they step in the door. Cha-ching ... there is money coming in every day, and the bank account looks healthier than it has all year. What could possibly be wrong?

Well, it could be that one of your best employees you've had working with you for the past 20+ years has mentioned they are thinking about maybe cutting back on their hours after this year's busy summer season ... or even whispering the dreaded "R" word. Retirement ... ouch!

As painful as it might be to see one of your most loyal team members leave the nest, you can't help but to wish them well ... they've worked hard, and of course deserve to be happy with whatever exciting adventures post-HVAC life has waiting for them.

But what does this mean for your company ... how do you begin to replace a valuable employee when they leave?

The first step is to look within the company. Sometimes this means doing a little shuffling of job descriptions, but you might find that looking at things a little differently could actually present some surprising new opportunities for how you manage your business.

The next step is posting an ad for your available position, and then screening job applicants ... the usual hiring process begins.

The task with hiring today is a bit different than in years past. It's no secret that the air conditioning industry is facing a skilled worker shortage. The recent recession saw many people leaving the business. And with the retirement of so many baby boomers these days, finding quality skilled workers is often an uphill battle.

In many cases, just finding a warm body will suffice, but the future of our industry deserves better than

that, which brings up an important discussion topic.

Why is there a labor shortage now?

Much of the problem today with a shortage of workers coming into our industry is caused by these common challenges for young people:

- There has been a move in the education system away from the trades, as many schools have eliminated classes such as shop class, auto mechanics, even welding. With high schools not offering those types of classes, young people who might have gravitated towards a career in the trades don't have the exposure that could have made all the difference for them choosing to pursue more of a hands-on career option.
- There is reduced outside encouragement for the construction-type field to be considered as a possible career. High school counselors typically emphasize kids to choose the path of a traditional four-year college ... going the route of education in the trades isn't really given much attention.
- Often times there's no encouragement from family members for young people to even consider the trades as a career alternative ... the family may not be familiar with anyone who works in the trades, and therefore doesn't realize what a viable career choice it could be.
- Industry image gets a bad rap. In general, people who work in the trades aren't viewed as glamorous, and their professions doesn't attract attention or generate enthusiasm. Young people don't realize what a rewarding profession it could actually be ... there is no limit to what someone with skills and good training can do to create an extremely successful business (and very comfortable lifestyle!).

Industry consultants for years have warned of an anticipated labor shortage for the trades. With the educational challenges mentioned above, combined with the aging of the workforce, it's understandable that there is not only a decline in workers, but a decline in experienced workers.

How do we solve the problem?

It always amazes me when I talk to others in our profession ... many will say they want 'something better' for their kids'. They encourage them to go away to college ... not so they can come back home and take over the business, but so they can 'get a job doing something better'. It's hard for me to understand why they wouldn't want their kids to follow them into an established business ... in an industry that has provided their family a good living and a nice life. It's ironic.

While it's not a problem that can be solved overnight, it is something that we can help to fix ... as seasoned trades-people, we need to be the ambassadors for our industry!

This is something we can start right now ... there is no cost or extra work involved. All that's needed is to remember that when you're having a conversation with anyone, from a parent to a young person, to always speak highly of the profession that has provided so well for you and your family.

Encourage others to see HVAC as an honest hard-working profession that is no different from that of a doctor or an accountant ... it's just a different job that someone is well-trained to perform, that can earn a person a very good living.

I sure don't know of any doctors or accountants who can install an air conditioning system, and I don't know of any air conditioning people I could call to help me if I need surgery or get audited by the IRS ... but isn't it good to know there are people who specialize in various professions who you can call when you need to get something done right!

It's all about perception and changing how people view the trades, especially HVAC. If we all spread the word, we can help to reduce the labor shortage and welcome a new generation of future fantastic employees for our companies.

It's hot, business is booming ... let everyone know how great it is to be an HVAC contractor!

Until next time,  
Tommy Castellano

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# Ritchie Introduces The Bullet®X Vacuum Pump

**BULLET®X Vacuum Pump Capabilities**  
*Make it the Best Vacuum Pump for the Money*



June 12, 2020  
– Ritchie Engineering Company, Inc., the leader in service tools for HVAC/R professionals and manufacturer of YELLOW JACKET® products, is proud to introduce the BULLET®X Vacuum Pump. The

latest upgrade to our BULLET® series offers users several performance and ergonomic improvements. With contemporary versions of both of our U.S. made vacuum pumps (we upgraded the SuperEvac™ in June 2019), YELLOW JACKET® continues to strengthen its position as the premier vacuum pump manufacturer in the HVAC/R market. Visit [www.yellowjacket.com](http://www.yellowjacket.com) for details.

The YELLOW JACKET® brand name is synonymous with the highest quality and most complete line of HVAC/R tools in the industry. The brand's roots go back to 1946 when Ritchie Engineering Company, Inc., became a hose manufacturer.

# The Next Six Months: Scenario Planning for a Pandemic Economy

Continued from Cover Story

Consequently, HARDI projects that in the event of a second shutdown (were it to begin in July and last from 1-2 months) that total demand for AC and ASHP equipment would decline between 35 and 45 percent by year-end from 2019 totals.

No Second Shutdown, Slow to Moderate Recovery  
Demand for AC and ASHP equipment – both on a residential and commercial basis – is highly correlated with measures of consumer and producer sentiment, construction spending, new and existing home sales, and a variety of other related metrics. Yet the reason economists, analysts, and other industry professionals have recently been acting as amateur epidemiologists is because, frankly, the direction of the pandemic is the only thing that matters. A return to economic normalcy will only happen once Covid-19 is behind us. On the construction front, once the pipeline of existing construction projects is empty businesses will not sink money into new projects until they have a reasonable expectation of their profitability. That's why construction is one of the last industries to be affected by a recession, and one of the last to recover. Housing construction, home sales, and consumer sentiment are more prone to roll with the ebbs and flows of the economic tide, but these metrics are also unlikely to fully recover until the pandemic is behind us.

Unemployment is a more interesting case. Un-

employment is fundamentally a matching problem, meaning when someone moves from employment to unemployment, it takes time for them to search and find a new job. That friction is one of the prime reasons why, after reaching its peak in a recession, the unemployment rate has historically only declined .55 percent each year. If we assume that unemployment rates remain above 10 percent for the foreseeable future, and that commercial activity moves in fits and starts as the pandemic drags on, it would appear unlikely that the economy – and the HVACR industry – recover at anything beyond a slow to moderate pace. In such a scenario, we anticipate AC and ASHP shipments to be down 20-25 percent from 2019 totals.

Moderate to Fast Recovery

The slow to moderate recovery scenario we outlined above assumes that the current recession unfolds as recessions have in the past. However, the current recession is unlike anything we've ever seen. This recession was not caused by a financial crisis, a stock-market collapse, an oil crisis (at least not entirely), or a bubble – it was the result of a global pandemic and government mandated economic shutdown. Therefore, it's entirely possible that this recovery will be faster than others in recent memory. As in the case of the slow to moderate recovery, unemployment offers a useful lens to view the potential outcomes in play. As we've already explained, in a

more traditional-style recession it takes time for the unemployment rate fall. However, the matching problem that exists in a traditional recession could be a much smaller problem in this one. While it's true that it takes time for workers who have been permanently laid-off to find new work, 15.3 of the estimated 21 million unemployed Americans count themselves as temporarily unemployed, meaning they could, in theory, be recalled by their former employers within a moments notice. Were that to happen, the unemployment rate would fall from 13.3 percent to 3.6 percent overnight. Although the likelihood of 15.3 million temporarily unemployed workers going back to work at once is incredibly remote, it does at least seem plausible to expect unemployment rates to decline faster from this crisis than in past ones. If unemployment falls to the levels predicted by the Federal Reserve (9.3 percent), business activity will likely normalize faster than in past recessions. In that scenario we project AC and ASHP shipments to be down 12-18 percent from 2019 totals by year end.

This piece is a summary of a webinar held on May 27th, 2020. For a more complete overview please visit <https://hardinet.org/>



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## Message from FRACCA President Rick Sims



It's rare that you turn on the news and see an air conditioning contractor in an orange prison jump suit being booked into jail and facing 385 years in prison and more than \$290,000.00 in fines and restitution. Louis Bruno and nine of his employees are finally being held responsible for years of ripping off consumers. Florida Attorney General Ashley Moody has had enough. Allegations from 245 complaints to FL. Attorney General's office claim that Bruno Air often began installation of HVAC units without obtaining the proper permitting, and in numerous instances, consumers were left with HVAC units that were either incomplete or incorrectly installed. According to the civil complaint, Bruno failed to return consumers' calls regarding the incomplete installation of HVAC units or the failure of units to pass inspection. Other charges surround fraudulent use of financing programs and customer electronic signatures and fraudulent use of a notary. The reported financial losses to consumers total \$2.3 Million.

Florida HVAC contractors cringed when Bruno was featured on a 2015 CNBC edition of "Blue Collar Millionaires" in which the host introduced him as "a former street hustler who has gone from peddling sham watches to pocketing cool millions". FRACCA members have endured complaints since 2012 but have no authority to discipline non-members; Bruno was not welcome to join any FRACCA chapter due to his widely known abuses. SWACCA received numerous complaints from both HVAC contractors and consumers who wanted something done. SWACCA always pointed out that none of their members carried out business like Bruno and that he was not welcome to join chapter ranks. FRACCA VP Will Barnes who worried of the black eye that Bruno was giving to our trade said in a press release "it's good to get someone like Bruno off the streets". Barnes and other contractors had too often been called in too late for consumers victimized and left with bad installations, discomfort, and financial damages. The arrests have been a long time coming for both consumers and contractors.

## Ritchie Engineering Company Hires Director Of Engineering

*Proven professional to lead  
YELLOW JACKET® Engineering Division*



**Greg Guse**

BLOOMINGTON, MN (May 17, 2020) – Ritchie Engineering Company, Inc., the leader in service tools for HVAC/R and automotive professionals and manufacturer of YELLOW JACKET® products, announces the hiring of Greg Guse as Director of Engineering.

Greg is responsible for driving product strategy and development, as well as contribute to the marketing and business strategy for the YELLOW JACKET HVAC/R and Automotive Divisions. "We are thrilled to welcome Greg to our team," said Tom Ritchie, President. "He has a wealth of knowledge and experience in engineering that will serve our customers and brand very well."

Greg Guse comes to Ritchie Engineering Company with more than 20 years of experience in power generation engineering, including the design of the triple dumping truck and refuse trucks. Most recently, Greg worked as the Mechanical Engineering Manager of the Value Enhancement Team at Alliance Laundry Systems in Ripon, WI.

A Minnesota native, Greg graduated from Minnesota State University in Mankato with a Bachelor of Science in Automotive Engineering & Technology and earned his MBA degree in International Business from Marquette University.

Bruno was infamous for cold calling other contractors' customers and claiming that they had purchased their service company. This happened on two occasions to me. Our customers were solicited by phone and when our customer stated that we were handling their maintenance and service, the Bruno employee lied and claimed that they had purchased our company. This same thing happened to many other companies. We will never know how many times they were not caught and those customers still genuinely believed that Bruno bought their service provider.

I would receive skepticism whenever I would say it will eventually catch up to him; contractors had their doubts; I am not sure I really believed it myself. Bruno seemed able to get away with anything. Legitimate contractors applaud the attorney generals' efforts and are eager to see justice. We see this as a strong message to anyone thinking about using our trade to scam Floridians. We also take notice that employees are not held above accountability.

## AHRI Releases April 2020 U.S. Heating and Cooling Equipment Shipment Data

### Central Air Conditioners and Air-Source Heat Pumps

U.S. shipments of central air conditioners and air-source heat pumps totaled 634,036 units in April 2020, down 14.7 percent from 743,068 units shipped in April 2019. U.S. shipments of air conditioners decreased 18.6 percent, to 398,040 units, down from 488,907 units shipped in April 2019. U.S. shipments of air-source heat pumps decreased 7.1 percent, to 235,996 units, down from 254,161 units shipped in April 2019.

Year-to-date combined shipments of central air conditioners and air-source heat pumps decreased 0.7 percent, to 2,585,007, down from 2,604,077 units shipped during the same period in 2019. Year-to-date shipments of central air conditioners decreased 1.5 percent, to 1,579,040 units, down from 1,602,941 units shipped during the same period in 2019. The year-to-date total for heat pump shipments increased 0.5 percent, to 1,005,967, up from 1,001,136 units shipped during the same period in 2019.

## RGF® Environmental Group Continues to Help America Get Back to Business!

RGF® Environmental Group is partnering with businesses nationwide in an effort to help them open their doors post-COVID 19. Businesses across America are installing RGF's REME HALO, an induct air purifier, to remove impurities such as viruses and bacteria from the air.

RGF is proud to manufacture and supply this product to help businesses across the country provide a safer environment for not only their employees, but their customers as well.

The REME HALO is being installed in gyms, daycares, restaurants, office buildings, public transit networks, government and military facilities,

assisted living, hospitals and dentist offices nationwide. As front-line workers continue to risk their lives to keep us healthy and phase one workers start to open up America again, RGF is working to keep their workplaces virus-free.

RGF manufactures over 500 environmental products and has a 35+ year history of providing the world with the safest air, water and food without the use of chemicals. RGF is an ISO 9001:2015 certified research and innovation company, holding numerous patents for wastewater treatment systems, air purifying devices, and food sanitation systems. For more information visit RGF.com



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# CoolAutomation Introduces Internet of Climate Cloud Solutions for HVAC Service Professionals



CoolAutomation, an industry leader in HVAC connectivity solutions, is launching its new cloud-based HVAC Remote Service Provision and Control Application Solutions.

The new solutions allow HVAC service professionals to diagnose HVAC problems remotely and save unnecessary and costly travel time. HVAC professionals can now remotely troubleshoot issues using real-time and historic data trends and big-data analysis, and receive automatic error and anomaly notifications in their office or on their mobile phones.

According to Roy Muchtar, VP of Products at CoolAutomation, "The Service Provision Solution is truly revolutionary for HVAC service companies and professionals as it provides the ability to remotely and intelligently monitor, diagnose, and proactively service HVAC systems". He adds, "As the world is facing one of the major pandemics in history, with travel restrictions affecting almost every aspect of how industries operate, it is even more evident that having the infrastructure for remote services is an essential element in assuring business continuity. Our new Service Provision Solution provides exactly the tools that will allow HVAC service providers to offer remote services to their existing clients while attracting new customers who now understand the value of remote service for their business".

The Service Provision Solution delivers many unique benefits such as remote HVAC diagnostics and monitoring, customizable predictive maintenance alerts and error notifications, and built-in support for multi-vendor HVAC environments.

Using the new Service Provision Solution, HVAC service professionals can define rules for automatically identifying system anomalies that may indicate potential system malfunctions. Together with push notifications, this provides a powerful and unique preventive maintenance service offering. Furthermore, in commercial HVAC deployments, it is quite common to find

more than one HVAC brand installed in one site or facility. HVAC companies and service professionals now have a one-stop solution to remotely access, diagnose, and service such hybrid installations.

With many businesses currently rethinking expenses, these new tools can improve HVAC service providers' efficiency and drive operational costs down: fewer unnecessary site visits and travel downtime, preliminary 'remote visits' that help HVAC service teams arrive prepared on-site with the right equipment and spare parts, expedited support cycle from diagnostics to repair and optimized system efficiency for better customer experience.

The Solution was tested over the first quarter of 2020 and now supports our customers in the US, Israel, and Australia.

In addition to the Service Provision Solution, CoolAutomation is also launching its new cloud-based HVAC Control Application.

The Control Application allows end-users to remotely control their HVAC with features such as turning units on/off, setting temperature setpoints, changing operation modes, setting custom schedules, and more. The new application presents immediate feedback and confirmation from the HVAC unit that the change was made and displays actual error codes to help with troubleshooting or contacting service teams.

According to Yaron Benvenisti, CoolAutomation CEO, "As an industry leader in technologies for HVAC automation and connectivity, we are delighted to unveil these 2 products. Our Internet of Climate (IoC) solutions are a universal concept designed to allow any climate system to be internet-connected easily, securely, and reliably. These technologies will play a crucial role for any professional within the HVAC service, management, or home and building automation industries – especially in today's accelerated rate of demand for remote technology and adoption."

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# ARS/Rescue Rooter of Tampa Bay Surprises Healthcare Hero on COVID-19 Frontline with Home Services Makeover



ARS/Rescue Rooter of Tampa Bay, a local HVAC provider and part of the American Residential Services (ARS) Network of Brands, is providing a new HVAC unit to Karie Soto, a deserving RN at Lakeland Regional Hospital as part of the ARS Cares Healthcare Heroes program. The program is an extension of the year-round, company-wide ARS Cares initiative, and is rewarding more than 50 free home services makeovers to healthcare professionals across the country during the current COVID-19 crisis.

Soto was nominated by her sister and a friend. As physically and mentally hard as it is especially during COVID-19, Karie says that working with the patients and her fellow nurses is the most rewarding part of be-

ing a nurse on the floor. She continues to use the skills she has learned to help improve the quality of care offered at Lakeland Regional Hospital. The installation of Soto's new HVAC unit was completed on June 12th.

Following the announcement of the ARS Cares Healthcare Heroes program on May 13, family, friends, and co-workers were invited to share stories of why a Tampa Bay area frontline worker was deserving of home improvements that would deliver relief and relaxation. ARS received more than 400 nominations.

The ARS Cares initiative was launched in 2016, and since that time, more than 90 home services makeovers have been completed, donating more than \$500,000 of HVAC systems and water heaters to deserving recipients. To learn more about ARS Cares and view official Terms & Conditions, visit [ars.com/ars-cares](https://ars.com/ars-cares).

# HARDI Distributors Report 10.2% Revenue Decline in May

COLUMBUS, Ohio, June 29, 2020 – Heating, Air-conditioning & Refrigeration Distributors International (HARDI) released its monthly TRENDS report, showing the average sales performance by HARDI distributors was a decrease of 10.2% percent during May 2020. The average annual sales growth for the 12 months through May 2020 is 0.4 percent.

"May was a very strange month with cooler than normal temps in much of the eastern part of the country while much of the western half was warmer than normal," said HARDI Market Research & Benchmarking Analyst Brian Loftus. "Besides the weather and various levels of COVID-19 related challenges, this year May had two fewer billing days than May 2019. When you adjust for the billing days, the sales change for the month across our seven reporting regions ranged from down 20% to up 20%."

The Days Sales Outstanding (DSO), a measure of how quickly customers pay their bills, was near

47.5 days. "The DSO increased by 1.5 days versus May of 2019," said Loftus. "We expected the economy to slow in 2020 so have been concerned about DSO from the start of 2020. This year is tracking a day or two slower than last year which is about as expected."

"The economic data is volatile and confusing and will remain that way for another couple of months at least," said Loftus. "Initial Unemployment Claims have declined for five consecutive months; new home sales were strong and retail spending surged in May. We also see that Continuing Unemployment Claims have been about flat for four consecutive weeks and the latest Industrial Production report was disappointing. COVID-19 is still with us and so is the economic uncertainty."

HARDI members do not receive financial compensation in exchange for their monthly sales data and can discontinue their participation without prior notice or penalty. Participation is voluntary, and the depth of market coverage varies from region to region. An independent entity collects and compiles the data that can include products not directly associated with the HVACR industry.

HARDI members market, distribute, and support heating, air-conditioning, and refrigeration equipment, parts and supplies. HARDI proudly represents more than 480 distributor members representing more than 5,000 branch locations, and close to 500 suppliers, manufacturer representatives and service vendors.

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By Gerry Wagner, Vice President HVAC Technical Training  
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**115 VOLT VS 230 VOLT:** The GREE mini split product line offers 115 volt single zone mini split systems in the VIREO and the LIVO models.

What exactly is the advantage of the 115 volt vs 230 volt system, if any?

Well, let’s take a close look...we will use the LIVO as our reference point.

MODELS	LIVS09HP115V1B	LIVS12HP115V1B	LIVS09HP230V1B	LIVS12HP230V1B
Cooling Capacity (min-max)	Btu/h 9,000 (2,764-10,819)	12,000 (3,753-12,000)	9,000 (2,764-10,819)	12,000 (3,753-12,000)
Heating Capacity (min-max)	Btu/h 9,000 (2,081-12,281)	13,000 (3,413-13,000)	9,000 (2,081-12,281)	13,000 (3,413-13,000)

Above we see the performance (capacity), data for the LIVO 9 & 12K 115 volt models vs 230 volt. The performance is similar with the 115 volt having a slightly lower low end and a slightly higher high end. All in all, a wash I would say.

MODELS	LIVS09HP115V1B	LIVS12HP115V1B	LIVS09HP230V1B	LIVS12HP230V1B
SEER/SEER	16/19.5	16/19.5	16/19.5	16/19.5
HSPF/ECOP	9.0/9.5	9.0/9.5	9.0/9.5	9.0/9.5

Above we see the efficiency ratings...they are identical other than a slight difference in EER. Once again, I’m calling it a wash.

MODELS	LIVS09HP115V1B	LIVS12HP115V1B	LIVS09HP230V1B	LIVS12HP230V1B
Cooling Temperature Range	-1°	0 - 75°	0 - 75°	0 - 75°
Heating Temperature Range	-1°	-4 - 75°	-4 - 75°	-4 - 75°

Above, we see the cooling and heating temperature range and it is identical for both the 115 volt and the 230 volt LIVO.

MODELS	LIVS09HP115V1B	LIVS12HP115V1B	LIVS09HP230V1B	LIVS12HP230V1B
Voltage / Phase / Hertz	115V / 1 / 60Hz	115V / 1 / 60Hz	208-230V / 1 / 60Hz	208-230V / 1 / 60Hz
Rated Current Cooling	amps 75.9	19.0	6.8	6.0
Rated Current Heating	amps 10.7	19.2	6.0	6.7
MCA	amps 10	20	9	9
MOCF	amps 25	30	15	15
Interconnecting Wire	AWG14 / 4	AWG14 / 4	AWG14 / 4	AWG14 / 4

Above we see the electrical characteristics and finally we see some tangible differences between the 115 volt and the 230 volt equipment.

But do we? At first glance, it would appear that the 230 volt equipment has a sizeable advantage in “rated current amps” in both cooling and heating. What we must remember here is that the 230 volt equipment has two “hot” legs from the power source so we must X the 230 volt amp rating by two. For example...

MODELS	LIVS09HP115V1B	LIVS12HP115V1B	LIVS09HP230V1B	LIVS12HP230V1B
Voltage / Phase / Hertz	115V / 1 / 60Hz	115V / 1 / 60Hz	208-230V / 1 / 60Hz	208-230V / 1 / 60Hz
Rated Current Cooling	amps 75.9	19.0	6.8 X 2 = 13.6	6.0 X 2 = 12
Rated Current Heating	amps 10.7	19.2	6.0 X 2 = 12	6.7 X 2 = 13.4
MCA	amps 10	20	9 X 2 = 18	9 X 2 = 18
MOCF	amps 25	30	15 X 2 = 30	15 X 2 = 30
Interconnecting Wire	AWG14 / 4	AWG14 / 4	AWG14 / 4	AWG14 / 4

Power bills use Kilowatts / Hour as their unit of measurement. The formula to figure Watts usage requires both volts and amperage:

Watts = Volts X Amps

So, using the LIVS09HP115V1B as the reference point...

115 (volts) X 11.3 (amps) = **1299.50 Watts**

Let’s look at the LIVS09HP230V1B...

230 (volts) X 5.8 (amps) = **1334 Watts**

All of a sudden, all advantage is lost and the “rated current amps” are a wash as well. Same goes for the Minimum Current Amps MCA and the Maximum Over-Current Protection MOCF. The cost of operation is essentially the same.

You can go to the DOE webpage for APPLIANCE & EQUIPMENT STANDARDS PROGRAM and see that the estimated annual cooling and heating cost are identical for the 115 volt and 230 volt LIVO models.

I found a great article written by Matthew Simmons of INYO Pools that addresses one advantage the 230 volt system has...here is an excerpt:

*“Most houses in the US have access to 230 volts as you may have noticed when installing heavy duty appliances such as a washer and dryer or electric range. In the pool industry, pool motors with a horsepower output of two or above almost always are 230 volt hook up only. This is because with high voltage comes great amperage.*

*When we flick the switch on a monster of a 3 HP motor, that mechanism demands amps to be able to fire the capacitor, switches and windings. If there is a delay in amps reaching the motor, it may cause the motor to overwork and overheat to compensate. This extra work put in by the motor means it is more likely to fail earlier than it should.*

X 2 = 11.6 X 2 = 12  
X 2 = 12 X 2 = 13.4  
X 2 = 18 X 2 = 18  
X 2 = 30 X 2 = 30

*Think of it as if we were sipping a thick milkshake but all we have is a thin straw. When you begin to sip on the straw no matter how hard you try, you will go red and eventually quit with your thirst not quenched. That is essentially what happens to a big motor using 115 volts. It’s got a fever, and the only prescription is more amps. Now switch that tiny straw with a hefty wide straw, your work load lessens. Voltage is the straw, and the amps are the milkshake. Voltage is just there to help convey the amps to the unit.”*

I love the milkshake analogy...**BRILLIANT!**

So, the 230 volt system holds an advantage with getting more amps to the equipment quicker and it does so with a smaller diameter wire. I think Mat-

thew’s milkshake and straw analogy might have been better understood if he said 230 volts is like using two straws as opposed to one. The 230 volt system can utilize a smaller diameter wire which will be less expansive then that used for 115 volts...here lies a possible cost savings when the power source is a fair distance from the equipment.

ELECTRICAL REQUIREMENTS				
Unit Size (Btu/h)	Voltage	Min Circuit Amps (MCA)	Max Overcurrent Protection (MOP)	Main Power Wire Size (AWG)*
9,000	115v - 1ph 60Hz	17	25	12/3
12,000	115v - 1ph 60Hz	20	30	10/3
9,000	208/230v - 1ph 60Hz	9	15	14/3
12,000	208/230v - 1ph 60Hz	9	15	14/3

The above is from page #5 of the LIVO installation manual. Note the larger wire required for the 115 volt systems (the smaller the number, the larger the wire, i.e., 10/3 is larger than 14/3).

I think the difference between 115 volt vs 230 volt lay in the application...not the equipment.

What I mean is...take the residential home with an old, outdated electrical service. It may not have the space available in the breaker / fuse box to accommodate a 230 volt circuit, (requiring two breakers/double pole as opposed to one). Not every homeowner right now can afford to upgrade the home’s electrical service and have a GREE mini split system installed...choices must be made and luckily, there are choices!

In this scenario, the 115 volt product allows the installer to offer the homeowner all the advantages the GREE product has to offer...inverter compressor, onboard diagnostics, 23 SEER (VIREO) and more! So, that all said, I think the difference between the 115 volt vs 230 volt equipment is limited to the following...



	115 volt	230 volt
Wire size		✓
Breaker size (single vs double pole)	✓	
Larger BTU capacities		✓

**ABOUT THE AUTHOR:** Gerry Wagner is the Vice President of HVAC Technical Training for Tradewinds Climate Systems. He has 38 years in the HVACR industry working in manufacturing, contracting and now training. You can contact Gerry by email: gwagner@twclimate.com and also please visit our website:www.twclimate.com

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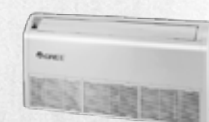
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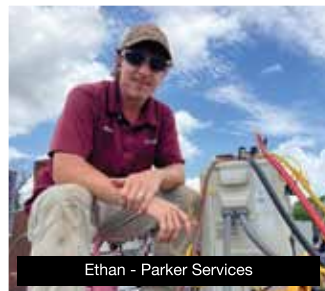


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In celebration of National HVAC Tech Day and World Refrigeration Day, Tropic Supply created several video tributes to thank the essential, frontline workers in both the HVAC and Refrigeration industry. As a company, we wanted technicians to know how much our families appreciate their hard work and dedication to keep our homes and businesses cool and refrigeration systems up and running. In recent months, many have risked exposure to COVID-19 to keep our community comfortable and essential businesses open. We know it is sometimes a thankless job, and did not want their efforts to go unrecognized. Please join us in thanking our hardworking technician community by commenting on the tribute videos posted to the Tropic Supply YouTube channel.



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# MOISTURE AND AIRFLOW

## WHAT DOES 400 CFM PER TON HAVE TO DO WITH MOISTURE REMOVAL?

article by  
Andrew C. Ask, P.E.



I have been requested to write a column on airflow. Is it 400 CFM per Ton? Or not? I'll do that soon. Before we get into that I'd like to review the fundamental relationship between airflow and moisture removal.

Let's start out by seeing what it takes to remove 100 lb of water vapor from the air over the period of a day, 24 hours. 100 lb, 12 gallons. That's a lot of water; but not crazy-lot. It might take that much dehumidification to dry out a big leaky house.

I'm going to convert the 100 lb to grains, a common unit of measurement for moisture in air. There are 7,000 grains in a pound of water, so we will be removing:

100 lb/day x 7,000 grains/lb = 700,000 grains/day of water vapor to be removed.

Each pound of 75°F./ 50% rh room air contains about 65 grains of water vapor. Real scientists working in pounds of moisture would say .009286 lb/lb-dry air. Isn't 65 grains easier to say?

Let's suppose we can drop that moisture content by 10 grains/lb, to 55 grains. Air at 54.5°F. / 90% rh is 55 gr/lb. We know how to do that, right? if we have the refrigeration cycle properly set up.

At that rate we will have to process:  
700,000 grains ÷ 10 gr/lb-air = 70,000 lb of air in one day.

That in turn is 70,000 lb ÷ 24 hr/day = 2,917 lb/hr ÷ 60 minutes/hr = 48.6 lb of air/minute.

You will recall that each pound of air occupies 13.3 cubic feet (or that it weights 1/13.3 = .075 lb/CF; take your pick), so:

48.6 lb/minute x 13.3 CF/lb = 646 CFM  
We will have to process 646 CFM. Gosh, that's not too bad. We can move that much through 1.5 or 2.0 ton air conditioner, can't we? Yes, if the compressor runs 24/7. Shifting from fundamentals to the real world for a moment, if you had a big house, 5-ton load, letting a 1.5 ton system run 24/7 out of control, no way it can satisfy the sensible load (not

over-cool), might be a pretty good strategy.  
Now let's change up the numbers and see what happens to airflow.

If we could get down to 50°F./90%rh with a moisture content of 48 grains, each pound of air we process would remove 65 – 48 = 17 grains and:

700,000 ÷ 17 = 41,176 ÷ 24 = 1,716 ÷ 60 = 28.6 x 13.3 = 380 CFM.

That could be a 1.0 ton unit with 4-row evaporator coil.

On the other hand, what if our air conditioner delivered 60°F./80% rh air @ 62 grains?

Our delta grains would be 65-62 = 3, and:  
700,000 ÷ 3 = 233,333 lb-air/24 hr ÷ 24 = 9722 ÷ 162 x 13.3 = 2,155 CFM.

We would need to run a 5-ton, .90 SHR AC system 24/7 to remove 100 lb of moisture each day.

Let me say all this in another way: it can take 5x as much air and AC to remove a given amount of moisture if the coil isn't cold, something the VRF manufacturers might think about—can't they come up with a better way to modulate capacity than slowing down the compressor on a call from the room thermostat?

Another way to think about these fundamentals: start with an airflow of 400 CFM, 1.0 traditional ton, cooling 75°F./ 50% rh room air to 54°F. saturated, 53.3 grains.

The moisture removal would be:  
4.5 x 400 CFM x (65-53.3) = 21,060 Gr/hr ÷ 7,000 = 3.0 lb/hr.

Each nominal ton of cooling can remove 3.0 lb of moisture. A representative 2-ton system might remove 6 lb/hr, 4x as much as the 70 ppd dehumidifier that might be connected to it. But only if the coil is cold.

Now slow down the fan to 300 CFM per ton and suppose that results in 50°F./90% rh leaving air, 48 grains.

The moisture removal for this same 1.0 ton sys-

tem would be:  
4.5 x 300 CFM x (65-48) = 22,950 Gr/hr ÷ 7,000 = 3.28 lb/hr.

This computation illustrates how changing Airflow affects moisture removal, an increase of about 10% in this case, by reducing Airflow from 400 to 300 CFM per ton.

Although it technically does not affect system Airflow, let's see why we were talking about 100 lb of water vapor per day. Start with another big, round number: drying 80 CFM of Outdoor Air from outside to inside conditions. That's how much OA you might introduce to a large home with a mechanical ventilation system. How many pounds of air does that amount to in a day's time?

80 CFM x .075 lb/CF x 60 minutes/ hour x 24 hours/day = 8,640 lb of air per day.

That's a lot of hot hair...even more than I produce at a seminar. At design outdoor humidity conditions in Ft. Myers, each pound of outdoor air contains 146 grains of moisture; indoor air contains 65 grains. So we have to remove the difference:

146-65 = 81 grains/lb=air difference or Δ grains  
In our example that amounts to:  
8,640 lb air x 81 grains ÷ 7,000 grains/lb = 99.98 lb water removal per day.

That's right, a ventilation rate of 80 CFM OA will introduce 100 lb of water to the home in 24 hours. A perfectly tuned 2-ton AC would have to run 17 hours without short cycling to take out that much water. If you have much less than 75% run time you better be thinking about a different dehumidification strategy.

So be thinking of moisture removal when you set Airflow. Lower Airflow and more grains depression (lower dew point) will result in more moisture removal. Until next month then...stay tuned.

Andy Ask is a Ft. Myers HVAC Engineer and Building Science Consultant to Madison IAQ.

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## Nu-Calgon Launches New Line of Eco-friendly Refrigerants



St. Louis, MO – Nu-Calgon has launched the EcoPure™ line of hydrocarbon eco-friendly refrigerants, along with a Charging Assembly that simplifies their use in the field. EcoPure R-290 propane and R-600a isobutane refrigerants

meet AHRI 700 Standard (99.5% pure), and they have zero ozone depletion and very low global warming potential. The purity of these refrigerants prevents unwanted problems from occurring within refrigeration systems.

Non-odorized EcoPure refrigerants include a re-sealable valve on the canister, allowing contents to be used to completion. Some competing refrigerants on the market use a piercing valve-type setup, which forces the contractor to use the entire can once it is opened; plus it invites an added hazard with use of a flammable refrigerant.

The EcoPure Charging Assembly securely holds the refrigerant in an inverted position to precisely meter liquid refrigerant to gram-weight accuracy. There's no need to use a cumbersome manifold gauge set for charging while trying to weigh the refrigerant amount. The Charging Assembly prevents less refrigerant loss and is the simplest, most reliable and most accurate approach for charging liquid into the refrigeration system.

For over 70 years, Nu-Calgon has been providing quality specialty products for the HVACR market. The company's complete line of products includes coil cleaners, descalers and refrigeration oils, as well as products for indoor air quality, water treatment, ice machine maintenance and other applications. When it comes to Nu-Calgon products, the name on the outside means quality on the inside. For more information, visit [www.nucalgon.com](http://www.nucalgon.com).

## AHRI Members, Others Seek Tax Credit Expansion

Arlington, Va. — A number of American manufacturers of heating, cooling, and water heating products and equipment – members of the Air-Conditioning, Heating, and Refrigeration Institute (AHRI) -- joined more than 750 contractors and distributors from across the country in asking Congress to extend and expand existing tax credits for home energy efficiency improvements.

In a letter to House and Senate leadership, the companies, which represent some 2.4 million American jobs, requested the extension as a means to help equipment manufacturers, technicians, installers, distributors, and homeowners alike in weathering the pandemic that has cost more than 400,000 jobs since March of this year.

AHRI is in strong support of extending and expanding the tax credit as a means of restarting the moribund economy brought about by the coronavirus pandemic. "This expansion would be a shot in the arm for manufacturers, distributors, installers, and consumers alike and would go a long way toward jump-starting our economy," said AHRI Sr. Vice President of Government Affairs Samantha Slater.

"This tax credit has a proven track record. It puts

contractors and manufacturers in this industry back to work while making home improvements that lower homeowners' heating and cooling bills, improve home comfort, and address important environmental objectives," the letter states, while seeking a reset of the lifetime single-use cap on the credit and raising the amount from the current 10-15 percent of eligible expenditures to 30 percent, up to \$2,400, for the purchase and installation of energy efficient cooling and heating systems, windows, insulation, water heaters, and other energy efficiency improvements.

The letter touts the success of a similar initiative, during the recession of 2008-2009, that raised the credit to \$1,500 for certain equipment, which drove "billions of dollars in economic activity."

In closing, the letter notes that "nearly 80 percent of energy efficiency companies have fewer than 20 employees, and these small businesses have been the hardest hit in our sector by the pandemic shutdown, with workers unable to get into homes and buildings to do their work," and concludes that "providing a robust tax incentive for homeowner energy efficiency improvements will quickly restart this industry and help put these workers back on the job."

## ASHRAE Offers Free Building Reopening Webinars

ATLANTA (June 12, 2020) – ASHRAE Learning Institute (ALI) will offer three free webinars plus a detailed course targeted to the European and Middle East regions, focused on mitigating potential health risks during reopening of buildings closed during the COVID-19 pandemic.

"As buildings begin to reopen after the COVID-19 closures, it's important to make sure that building readiness plans are in place for the safe and efficient operation of HVAC systems," said 2019-20 ASHRAE President Darryl K. Boyce, P.Eng. "These free online training opportunities will provide strategies to ensure a safe and healthy indoor environment for building occupants." Drawing upon guidance from an international team of indoor environment and building system ex-

perts, "COVID-19 and Buildings: Re-Occupation after Lockdown," identifies the equipment and procedures that are essential in protecting occupant health, bringing attendees up to date on the environmental conditions that are recommended to prevent the spread of the disease. This course takes place on July 8.

"Analysis of Airflow Patterns and Flow Path of Airborne Contaminants" on July 21, demonstrates how the supply air flow paths, induced air flow paths, and exhaust grille placement can work collaboratively to establish protective and effective contaminant control. The webinar provides valuable insight to healthcare design engineers, facility managers and owners in designing the HVAC systems for patient rooms. To register visit [ashrae.org/onlinecourses](http://ashrae.org/onlinecourses).

## It's Hurricane Season... Power Outages Now Become a Fact of Life!

You never know when they will hit, or how long they will last. But you do know this: unless you have a backup generator, your AC (or heating) is not going to work while the power is out, and not everybody can afford or has the room for a whole house generator.

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### THE NEW DSS DISCONNECT/STANDBY SWITCH

quickly and easily allows you to run your AC system during a power outage using only a small portable generator. The compact DSS switch replaces the disconnect on your condenser and provides an easily accessible port for you to plug in your small generator and be up and running in just a few minutes. There's no need for expensive whole house generators with complicated transfer switches.



Electrical codes require all condensers to be fitted with a disconnect switch, and this is the primary function of the DSS Switch.

What makes the DSS Switch truly unique is that it incorporates a standby generator switch as well. In the event of a power outage, any portable generator can quickly and easily be connected directly to the AC system, enabling it to continue operating in cooling or heat pump mode until the outage is over.

Fully assembled in the USA from UL listed components, the DSS Switch conforms to all current code requirements. It toggles easily between main panel off position and generator on position. The DSS switch incorporates 2 LED lights to notify the user of the power supply status.

Whole house generators are costly and often are not permitted or face challenges from zero lot line restrictions, so in many cases they are simply not a viable option. Initially designed for energy efficient ductless systems and small ducted systems as well, the DSS Switch bypasses the main panel. This provides an easily installed economical method to allow a single circuit appliance to run independently direct from a generator.

- Available in 3 sizes to handle a 120 volt system rated at 15 Amps or a 240 volt system rated up to 30 Amps.
- Suitable for ductless or ducted systems in cooling or heating mode.
- 3 position switch toggles easily between off, house power and generator positions.
- Includes 2 LED'S to indicate system power status.
- Quick and easy to install.
- Plug n play wiring.
- Fully assembled in the USA.
- All components are UL listed.
- Code conformant.



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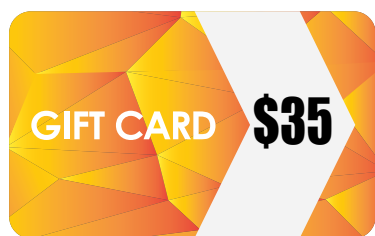
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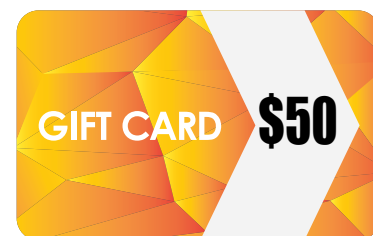
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## New Munters Whitepaper Explores How Humidity Affects Viral Infectivity and Longevity



Amesbury, Mass. (June 18, 2020) – There is a demonstrable link between humidity and the infectivity and longevity of a variety of viruses,

such as influenza and coronaviruses, according to a new whitepaper by Munters, a global leader in energy-efficient and sustainable air treatment solutions. Titled “How Humidity Control Can Reduce Viral Infectivity and Longevity,” the scientific report addresses how it is possible to reduce the transmission and longevity of harmful viruses by controlling indoor Relative Humidity (RH) levels.

The paper is based on gathered research, including studies on the efficiency of respiratory droplet transmission at humidity and temperature, virus survival and transmission at absolute humidity levels, and the effect of environmental parameters on the survival of airborne infectious agents. Among the most notable and timely findings, the research demonstrates that at RH levels between 40 and 50%, many types of common and harmful viruses such as influenza and coronaviruses are rendered inert much more quickly than at RH levels of less than 20%.

“Viruses that cause respiratory illnesses are of-

ten transmitted by viral particles through coughing, sneezing, talking and breathing,” said Martin Ginty, Global Pharmaceutical Industry Manager for Munters. “Research referenced in our whitepaper suggests that maintaining an indoor RH% level between 40 and 50% yields the maximum protective effect from both aerosolized and settled virus particles and that by maintaining these levels, it is possible to contribute to a healthier, safer environment.

“This evidence is particularly relevant in locations where winter tends to consist of low outdoor temperatures and low indoor humidity, as these conditions provide a favorable environment for viral transmission,” added Ginty. “By effectively controlling indoor climates in these locations, it is possible to limit the transmission of harmful viruses.”

Maintaining target RH levels can be accomplished using humidity control solutions which facilitate precise RH control for indoor environments. Furthermore, the whitepaper concludes that humidity control is always useful, but particularly during a typical ‘flu season,’ where outdoor temperatures and absolute humidity tend to be lower.

For more information on how humidity control can reduce viral infectivity and longevity, download the Munters whitepaper at <https://www.munters.com/en/virus-control?country=us>.

## Mitsubishi Electric Trane HVAC US M-Series SUZ Available with Hyper-Heating INVERTER®

SUWANEE, Ga. – June 8, 2020 – 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, announces the expansion of the SUZ universal outdoor unit to include Hyper-Heating INVERTER® (H2i®) technology.

The single zone outdoor unit is part of the M-Series product line from METUS, which includes indoor units, outdoor units and controls for residential and light commercial applications. Available in 9,000, 12,000, 15,000 and 18,000 BTU/H capaci-

ties, the SUZ with H2i technology delivers indoor comfort in extreme cold weather conditions maintaining performance at outdoor temperatures as low as -13 degrees Fahrenheit. At 5 degrees Fahrenheit outdoors, the system is designed to deliver up to 100% of its rated heating capacity.

Ideal for residential or light commercial applications, the SUZ outdoor unit is designed with a built-in base heater and Blue Fin anti-corrosion coating over the coils.

For more information about the SUZ universal outdoor unit visit [www.mitsubishicomfort.com](http://www.mitsubishicomfort.com).

## HOPE for HOMES Act of 2020 to Stimulate the Residential Energy Efficiency Industry



June 24, 2020 – Washington, DC – The Building Performance Association actively supports the HOPE for HOMES Act of 2020, which

includes immediate relief and long-term support for the residential energy efficiency contractor industry negatively affected by the COVID-19 pandemic. Introduced in the House and Senate on June 24, the bill has bipartisan support and offers a two-pronged approach to support online contractor training and fuel re-hiring while providing incentives to homeowners to invest in energy efficiencies in their homes.

Since the start of the pandemic, the energy efficiency sector has lost over 413,000 jobs with projections to lose many more if immediate action is not taken. HOPE for HOMES Act proposes \$500 million to support online training for contractors, preparing them to significantly advance America’s existing home infrastructure through the \$6 billion Home Energy Savings Rebate program.

“We need the HOPE for HOMES Act for immediate stimulus for our contractors to receive adequate training to revive the industry,” said Steve Skodak, CEO of Building Performance Association. “Providing accessible training for contractors on one side and incentive for homeowners to apply energy efficiencies to their home on the other creates a clear opportunity for everyone.”

Through the establishment of grants for online workforce training, residential contractors will immediately gain access to online training designed to prepare them to conduct comprehensive home energy efficiency retrofits. These stipends will allow contracting businesses to re-hire and re-invest in their employees during the economic downturn.

The Home Online Performance-Based Energy-Efficiency (HOPE) qualification is designed to serve as a pathway to participate in the Home Owner Managing Savings (HOMES) rebate program, which would provide rebates to homeowners who undertake energy efficiency home retrofits, thereby supporting contractor small businesses that are providing energy efficiency products and installations for their customers. The program will spur the creation of important jobs in contracting, manufacturing and retail sales of energy-efficient technologies and products. Contracting jobs are inherently local, and many will be provided by small business contractors. The HOPE for HOMES Act would support these small businesses and local job creation across the country during a time of need.

Along with the advocacy work of Building Performance Association and support by its members, HOPE for HOMES Act has the wide support of organizations across the industry including Air Conditioning Contractors of America (ACCA), Johnson Controls, Mitsubishi Electric Trane HVAC, National Association of Home Builders (NAHB) and National Association of State Energy Officials (NASEO).

The bill will be introduced in the House by Rep. Peter Welch (D-VT), Rep. David McKinley (R-WV), Rep. Tony Cardenas, (D-CA), Rep. André Carson (D-IN), and Rep. Paul Tonko (D-NY) and in the Senate by Sen. Chris Van Hollen (D-MD) and Sen. Jeanne Shaheen (D-NH).

The Building Performance Association is a membership-driven 501(c)6 industry association dedicated to advancing the home and building performance industry. Built upon three decades of experience, the association is well-positioned to provide industry support through key areas including advocacy, education, programs, networking, publications, and community. Our members are individuals, companies, and organizations who work to deliver improved energy efficiency, health, safety, and environmental performance to people in their homes across the United States and Canada.



**HVAC School**  
For Techs by Techs

## What to Check Before Condemning the TXV

By Bryan Orr



Bryan Orr

I just noticed this portion of the Carrier air handler sticker for the first time the other day. I’m like most techs, it’s easy for us to ignore the great info posted right in front of you on the data tag because so many of the notices contain info

you are used to seeing. I like this list because it is very practical

Verify airflow is correct – Easier said than done but this includes a visual inspection of the air filter, evaporator coil, and blower wheel, checking all of the air handler/furnace /control settings and verifying you are getting the correct calls/signals and then checking static pressure. Some purists suggest actually “measuring” total system airflow but this can be very tricky unless you own a TruFlow grid or are very experienced with a hot wire anemometer.

Check Subcooling at the outdoor unit and verify charge – You need to have a solid line of liquid deliv-

ered to the TXV for it to do its job. Get the charge set first by subcooling before overanalyzing valve operation.

Confirm TXV bulb is properly attached and insulated – This should be done with a factory brass or copper strap or with a stainless steel strap. In all cases, it should be snug with the entire bulb making good suction line contact. If a bulb is loose or uninsulated it will generally run lower than design superheat.

Verify the system is free of contaminants and moisture – This is less something you can “verify” and more something you prevent by purging nitrogen, flowing nitrogen while brazing and evacuating to below 500 microns with a standing decay test. It is im-

portant as part of your diagnosis leading up to “bad TXV” diagnosis that you check for temperature drop across any filter driers or screens first.

Be sure the evaporator and condenser coils are clean – This is just good general advice and something we should be checking along with air filters and

blower wheels anyway.

— Bryan

*The post What to Check Before Condemning the TXV appeared first on HVAC School.*







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# Performance Pointers

by David Richardson



## Better Flexible Duct Installations in Four Steps

When you test poorly performing systems that use flexible ducts, there are reoccurring installation problems that lower airflow and reduce comfort and efficiency. However, with some attention to detail, you can easily correct and prevent the most common mistakes. Let's expand on how you can provide better flex duct installations to assure your systems work as intended.

### Avoid Sharp Turns

To increase the performance of your installations, avoid sharp flex duct turns at all costs. Systems work best when you route ducts as straight as possible. Because of many obstacles found in homes today, this isn't an option.

When a duct must make a turn, do your best to keep it to a minimum. Long sweeping turns work best and allow an easier path for air to travel. Sharp, 90-degree turns kink the flex duct internally and reduce room airflow. As the sharp turn restricts the duct, static pressure in the system rises causing a decrease in system performance.

Some common places these restrictions occur are improper duct connections to takeoffs and boots. At the connection point there is often an abrupt turn that destroys airflow. Solve this by providing plenty of support for the duct where it changes direction or use a sheet metal elbow.

Structural framing is another common obstacle you'll find in many attics. To get around them, you may need to reroute ducts or find another location to avoid sharp turns.

### Increase Duct Support

Sags and kinks from inadequate duct support are a common cause of poor airflow and comfort complaints. Many installers only support the duct every five to six feet, which results in severe drooping. This condition will worsen over the life of the duct system and continue reducing airflow. Ideally, flex duct should not sag more than one inch in a four-foot length.

Kinks in the ducts require additional support. When you use narrow materials for hanging such as plumbing strap or wire, the duct becomes choked at that point. In severe situations, wire can cut into the duct causing air leakage into unconditioned areas of the building.

When these defects exist, air gets choked off and slows down. To correct these problems, provide support at more frequent intervals such as every three feet instead of five, six, or seven feet.

When installing more support, make wise choices in strapping materials to prevent kinks. At a minimum, use three-inch wide hanging straps or metal bands to cradle the duct. When you use these two methods, you can make your flex duct installation perform as well or better than sheet metal duct systems.

### Remove Excess Core

Another common defect that results in low airflow occurs when the flexible duct inner core bunches up as it's fastened to a boot or takeoff. This happens if you don't pull the core tight and cut it to length. If you don't cut the inner core and pull it tight, once you pull the insulation over the boot or collar this problem gets worse because the core further compresses.

When renovating duct systems, we often remove up to three additional feet of core that a visual inspection would have missed. As a result, we've measured airflow increases of 30 to 40 cfm on a six-inch duct.

So, remember to stretch ducts out as tight as possible. Once you connect the duct to the boot or takeoff, stretch it tight again from the opposite end to make sure you remove any excess core. Complete the connection by attaching the other end and finishing the install.

### Size It Right

You can follow the three previous steps to the letter and still doom a duct system to poor perfor-

mance if you size ducts according to old-school rules-of-thumb. When you size flexible ducts with methods intended for sheet metal duct, low airflow and high static pressure will result. These duct materials have two different interiors. Sheet metal has a smooth surface while flex has an uneven helix core.

Your systems will perform much better if you design your flexible ducts larger. Many like to use the .10 friction rate on a duct calculator and assume a six-inch duct delivers 100 cfm. If this is your expectation, the results will disappoint you.

However, if you must use a metal duct calculator and default value, size your ducts at the .05 friction rate and follow the installation guidelines above. This gives you a greater chance of success and delivers systems that perform closer to intentions.

### Trust but Verify

The rubber truly meets the road when you measure the airflow delivery of your systems. You can battle over duct design methods all day long, but until you take measurements and verify the installation delivers the required airflow, it's strictly a guess.

I encourage you to cover these four details with your installers and give them the flexibility to do the job right the first time. Your customers will appreciate it.

**David Richardson** serves the HVAC industry as a curriculum developer and trainer for the National Comfort Institute, Inc. (NCI). NCI specializes in training focused on improving, measuring, and verifying HVAC and Building Performance.

If you're an HVAC contractor or technician interested in learning more about airside testing, contact David at [davidr@ncihvac.com](mailto:davidr@ncihvac.com) or call him at 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.

## HVAC Solutions Supplier NAVAC Highlights Three Models Ideal for Industrial and Commercial Operations



Lyndhurst, NJ – NAVAC, the world's largest supplier of HVAC vacuum pumps in addition to a wide array of tools, gauges, charging machines, recovery units and other industry-specific items, is introducing a set of solutions designed to significantly reduce the hassle and time needed to service large industrial and commercial HVAC systems.

Industrial and commercial HVAC systems typically contain exceedingly high amounts of refrigerant to be removed. Many also have a lengthy heavy-duty cycle, requiring HVAC tools servicing them to run continuously for extended periods – often days rather than hours. Another servicing challenge for recovery units and vacuum pumps is the frequent presence of moisture and other contaminants found in these systems. Considering these factors, pre-

ture equipment failure has been an all-too-common occurrence.

It is exactly these obstacles that the NAVAC units address. Designed to overcome tough commercial and industrial applications, the solutions include the market's first four-cylinder recovery unit, and an industry-leading commercial and industrial grade vacuum pump.

For example, NAVAC's NRDC4M, as the world's first DC inverter 4-cylinder recovery unit, is the fastest and most powerful machine of its kind on the market. Operating up to 40% faster than 2-cylinder units, the NRDC4M utilizes an efficient brushless DC motor and ultra-effective condenser with an oversized microchannel coil and three cooling fans. Featuring dual oil-free compressors, the unit is suitable for all commonly used refrigerants. The NRDC4M recovery unit is ideal for large tonnage commercial and industrial HVAC systems.

NAVAC also offers two vacuum pumps ideal for heavy duty applications. NAVAC's NP12DM Vacuum Pump features an industrial-grade design for a rare blend of durability, speed, and power. The unit also offers a flow rate of 12cfm for accelerated industrial performance, and its brushless DC-motor technology maintains peak efficiency while yielding a superior starting performance under low starting amperage and soft-starting down to 30°F. The

NP12DM's two-stage functionality and precision manufacturing provide an industry-leading ultimate vacuum down to 5 microns.

With its integral pump structure and advanced oil management system, the NRD16T Vacuum Pump thrives in demanding operating environments. The unit comes with a carrying cart for easy portability, and can perform evacuations even on large systems in matter of hours; competing units often take days. Its impressive flow rate of 12cfm provides fast, robust performance.

"The servicing of commercial and industrial HVAC systems is a market segment in particular need of new solutions to longstanding issues – especially overall job duration and premature equipment failure," said Stephen Rutherford, VP of HVAC Tools Business for NAVAC. "Aligning with our goal of providing user-friendly equipment and tools that are less complicated and save time, our portfolio of heavy-duty HVAC units offers expedited servicing with enhanced equipment reliability."

NAVAC is a global manufacturer that has dedicated over 20 years to the R&D and manufacturing of industrial vacuum solutions and HVAC/R tools. NAVAC draws upon its commitment to technical innovation, strong customer service and robust R&D allocation to deliver solutions offering unsurpassed efficiency, accuracy, and ease of use.



## Venstar's New Explorer Mini Fan Coil Digital Thermostats Deliver Big Features in a Small Footprint

CHATSWORTH, Calif., June 10, 2020 — Venstar®, a leading thermostat and energy management systems (EMS) manufacturer, today launched its new Explorer® Mini Fan Coil digital thermostats, the most affordable programmable Wi-Fi® thermostats on the market. Available in residential and commercial models, Explorer Mini thermostats pack big features into a small footprint of just 3.2 inches wide by 3.2 inches high and less than an inch deep. Explorer Mini thermostats are now available throughout North America from Venstar's exclusive network of Wholesale HVAC Distributors.

"Explorer Mini thermostats help save energy and improve indoor comfort while taking up less wall space. The most affordable programmable Wi-Fi thermostat available, Explorer Mini is also one of the smallest," said Steve Dushane, president and CEO of Venstar Inc. "With the Skyport Mobile App, users can remotely control their Explorer Mini thermostats from virtually anywhere."

On the Skyport Cloud website, users have access to more advanced programming options, including global changes to temperature, mode, time period schedules, Holidays and vacations as well as geofencing. For additional integrations, Venstar's Application Programming Interface (API) enables developers and installers to integrate the thermostats with other third-party systems, including most home automation systems. For more information on the Explorer Mini Fan Coil residential (T2100) and commercial models (T2150) and their features, visit Venstar: [www.venstar.com](http://www.venstar.com)



## Best Practices When Reconnecting Refrigeration Equipment After Quarantine

June 2020 - During these times of coronavirus pandemic, quarantine and lockdown procedures, many food service businesses have had to shut down for a while or had their demand strongly reduced. In result, some may have chosen to disconnect their refrigeration equipment to save energy. In this case, there are some easy measures that can be taken to protect the equipment in order to work properly when reconnecting it.

Tips for restarting disconnected equipment

If the equipment will not be used for many days and disconnecting it ends up being the proper choice, here are some recommendations by Application engineers David Ramirez and John Prall, and Technical Service specialist Denny Martin, all from Nidec Global Appliance, holder of the Embraco brand, a global reference in technology for the complete domestic and commercial cold chain. Both have many years of experience working with Embraco's compressors and refrigeration solutions.

- Before restarting, take the opportunity to make any maintenance needed in the equipment.
- It's very important to make sure that the condensers and evaporators are clean before restarting the equipment, as this will ensure proper operation.
- When restarting, be sure to check for any unusual noises like liquid slugging the compressor or fans out of balance before allowing the cabinet to be restocked. Once the equipment is started back up, make sure the cabinet has achieved the design temperature in the refrigerated space before allowing it to be stocked with product.
- There are two things that may occasionally happen when restarting the equipment after a long period of time: a longer time to reach the design temperature and an elevated energy consumption, which is normal in this situation.



- It's a good idea to allow the cabinet to achieve design temperature before stocking the product so as not to overload the equipment and increase pull down time unnecessarily. The compressor works hardest during a hot pull down and typically will remain at full load amperage until reaching the correct temperature.

- Once the product is loaded, check cabinet temperature again and note the time it took to pull down. Take amp draws on all motors if possible once the cabinet has reached temperature. It's also a good time to inspect and tighten all electrical connections.

- If it is necessary to restart the equipment with a big stock of product, then avoid turning it off again for at least 24 hours. It is also recommendable to allow the equipment to reach a stable condition of temperature before putting more products inside it again.

- The most important thing to consider when restocking equipment that has been off is that the product going into the cabinet is at temperature and not too warm or it will take very long to reach the appropriate temperature.

To conclude, David Ramirez explains that disconnecting equipment to save energy is not always the best choice if it is only for short periods of time. "Normally, you imagine that will improve the energy consumption of the equipment by shutting it off in moments of lower demand, such as during the night. But in this case, we have to take in consideration that when we disconnect an equipment, the internal temperature tends to get higher and when turning it on again, it will require a lot more energy to pull down the temperature", he explains. "The temperature variation also accelerates the decomposition of food and beverages, so the recommendation, in short period situations, would be to put the equipment in economy mode and not to turn it off", completes the engineer.

## Going to School on Long-term Cooling Tower Solutions

Sometimes, the best way to learn is by simply taking a fieldtrip. That's exactly the route two institutions recently took and received some valuable lessons.

For the Harnett County School District in North Carolina the time came when Western Harnett High School was in dire need of an improved cooling tower solution for an HVAC system. Used in combination with source water heat pumps to warm the high school, the original metal cooling tower had been patched so often that making additional repairs was no longer possible.

To come up with the best solution, the school district reached out to Jeff Shropshire, Project Manager for Brady Services, Greensboro NC. Brady provides comprehensive building solutions and technical support for building owners, facility managers, engineers and contractors. Recognizing the inherent weaknesses of traditional metal cooling towers Shropshire's team pursued a more durable and affordable solution that is steadily transforming HVAC and industrial applications: the engineered plastic cooling tower.

Constructed of high-density polyethylene (HDPE), this technology was first developed by Delta Cooling Towers ([www.deltacooling.com](http://www.deltacooling.com)), and has demonstrated unmatched durability and performance characteristics, even when compared with pricey stainless-steel models.

Because HDPE cooling towers are impervious to caustic environmental elements that continually attack metal units, ranging from marine air and airborne process exhausts to harsh gases from wastewa-

ter treatment. These engineered plastic cooling towers are unaffected by pH from water sources, including evaporation make-up water, and even the water treatment chemicals that attack metal towers from the inside out.

"Some of the school system's officials visited the Delta manufacturing plant to explore all the choices available and were so impressed with the company's HDPE technology - and the standard 20-year warranty - that this became the cooling tower-of-choice for the entire school system," Shropshire says.

The new cooling tower selected for Western Harnett High was a "modular" TM Series model that provides approximately 600 cooling tons.

Shropshire notes that these HDPE cooling tower cells are equipped with variable-frequency drives, which will greatly reduce energy costs for years to come.

Not long before that, Frostburg State University (FSU) was faced with a similar issue of replacing a failing cooling tower as part of an HVAC system overhaul. Initially, the engineering and maintenance team examined two basic options: a costly switch to a new air-cooled system, or the purchase of another metal-clad cooling tower to replace the old rusted-out unit that they continually struggled to maintain.

In search of a better option, FSU's in-house engineering staff turned to Casto Technical Services and its contracting operations manager, Paul Lancaster, who had assisted them on several projects over the years. Lancaster quickly ruled out converting to an

air-cooled system because of the costs to convert the entire system was not in the school's budget. On the other hand, replacing the existing system with another metal option would have inevitably led to more exorbitant cooling tower maintenance costs.

"The University's staff was very uneasy about replacing the cooling tower with another metal-clad unit because of the 'built-in' deterioration of the tower due to rust and corrosion, along with high maintenance costs," says Lancaster.

Lancaster says that the shortcoming of metal cooling towers cited by university in-house engineers were actually the strongest selling points of HDPE models.

Located in Maryland, Frostburg University happens to be within driving distance to the Delta Cooling's West Virginia plant. So, Lancaster and some of the team took a trip to the facility to see firsthand the manufacturing process of the one-piece, corrosion-proof shell.

"I've been in this business for 38 years, and I know a good solution when I see one," says Lancaster. FSU selected a Delta Paragon model with 200 cooling tons. These engineered plastic cooling towers are unaffected by pH from water sources, including evaporation make-up water, and even the water treatment chemicals that attack metal towers from the inside out.

"We created an optimum solution that will last for a long time," Lancaster concludes. For more information, contact Delta Cooling Towers, Inc.; (800) 289.3358; or visit the website: [www.deltacooling.com](http://www.deltacooling.com)



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## Carrier Launches Healthy Buildings Program to Help Customers Reinvent Their Buildings for Occupant Health

PALM BEACH GARDENS, Florida, June 2, 2020 — As people around the world adjust to a new normal, the health of our buildings – and how they influence personal health – is critically important. Today, Carrier introduced its Healthy Buildings Program, an expanded suite of advanced solutions to help deliver healthy, safe, efficient and productive indoor environments across key verticals including commercial buildings, healthcare, hospitality, education, retail and marine. In support of this, Carrier today also launched [Corporate.Carrier.com/HealthyBuildings](https://www.carrier.com/HealthyBuildings) to help customers consult with Carrier's experts to take advantage of the broad range of industry-leading healthy building technologies. Carrier Global Corporation (NYSE:CARR) is a leading global provider of innovative heating, ventilating and air conditioning (HVAC), refrigeration, fire, security and building automation technologies.

"COVID-19 has reinforced the important role that buildings play in ensuring and protecting public health," said Dave Gitlin, President & CEO, Carrier. "As people return to work, hotels greet guests, schools welcome back students and stores reopen, indoor air quality and safe buildings are of paramount importance. For the economy to successfully recover, people need to have trust in the safety of the buildings they are entering. New technologies like microscopic filtration systems and touchless building controls have gone from nice-to-have conveniences to must-have protections. The Carrier Healthy Buildings Program can help enable healthier and safer indoor environments as we get back to our new normal."

As a founding member of both the U.S. Green Building Council and the International WELL Building Institute, Carrier has long been an industry leader in enhancing building health to promote personal health. Now, it's essential that the world have the solutions and services that enable healthy environments.

"The company that invented modern air conditioning is uniquely positioned to deliver healthy building expertise," said Rajan Goel, who leads Carrier's Healthy Buildings Program as the head of Carrier's Building Solutions Group. "Through the Healthy Buildings Program, Carrier's experts will work closely with customers to not only design but operate, maintain and upgrade buildings that protect what's most important – the health of those inside."

## Milwaukee® Announces New Impact Resistant Gloves

MILWAUKEE, WI – Milwaukee Tool enhances safety on the jobsite with the introduction of new Impact Resistant Gloves, all of which are equipped with back-of-finger reinforcement and back-of-hand protection and are ANSI/ISEA 138\* impact-rated.

"In March of 2019, the International Safety Equipment Association (ISEA) set a new ANSI/ISEA 138 standard. Back-of-hand injuries are some of the most common hand injuries on the jobsite, so this standard was created to establish new performance requirements for hand protection that is designed to protect the knuckles and fingers from injury," said Zach Richman, Senior Product Manager for Milwaukee Tool. "As jobsite safety is emphasized across the nation, it is crucial for users to have hand protection that is equipped with back-of-hand protection when working with heavy materials and equipment. However, higher performance ratings often lower glove dexterity, so understanding the application is critical when choosing a glove. To align with this initiative, all of our new gloves are equipped with enhanced TPR for protection to meet the ANSI/ISEA impact rating of 2 while still maintaining dexterity and mobility."





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## Bryant Heating & Cooling Systems Announces Dealer of the Year

INDIANAPOLIS, June 23, 2020 — Family Heating and Air of Pensacola, Florida has been named the 2020 Bryant Dealer of the Year, the highest honor a Bryant dealer can receive. Each year, this award recognizes the company whose hard work, expertise and business acumen have helped them to stand out as a leader in the industry. Bryant, a leading supplier of heating, ventilating, and air conditioning (HVAC) equipment, is a part of Carrier Global Corporation, a leading global provider of innovative HVAC, refrigeration, fire, security and building automation technologies.

"Team Family is honored to be selected as the Bryant 2020 dealer of the year," said David Fowler, co-owner, Family Heating and Air. "I am incredibly proud of my team and it is confirmation of what I've been saying for years: Team Family is the best in the nation. We have always been dedicated to doing 'Whatever it Takes' to take care of the team and our customers."

Family Heating and Air has been a Bryant dealer since 2005 and its team boasts over 100 years of combined experience in the HVAC industry. The organization services northwest Florida and southern Alabama and its mission is to deliver unprecedented customer service and encourage team growth and development, all while leading the industry in home comfort solutions. Family Heating and Air was selected to Bryant's Circle of Champions in 2018 and has been a Bryant Medal of Excellence winner the last two years. In addition, co-owner Sonya Fowler is an active member in Bryant Women in HVAC and has been featured as a panelist at the organization's annual meetings.

"Bryant dealers are among the best in the business and they continue to raise the bar in our industry," said Justin Keppy, president, HVAC-Residential, Carrier. "Our 2020 Dealer of the Year, Family Heating and Air, exemplifies the values and commitment that the Bryant brand has come to represent in its more than 115-year history. Their team serves as an excellent example of how to run a successful business and ensure their customers and community are the top priority."

Bryant selected its 2020 Dealer of the Year from 21 Medal of Excellence winners, comprised of Bryant Factory Authorized Dealers throughout North America. The candidates were judged on overall sales growth, high-efficiency and indoor air quality equipment sales, customer satisfaction and participation in dealer programs and promotions. For more information about Bryant and to find a dealer near you, visit [www.bryant.com](http://www.bryant.com)

## New Research Predicts Decline In Restaurants, Hotels And Stadiums Beyond Election Day

MECHANICSBURG, Pa. — June 18, 2020 — A national study released today by the Healthy Spaces Initiative (HSI) reveals how often Americans plan to visit public spaces over the next six months and what measures would improve their confidence doing so in the post-COVID-19 landscape. The hospitality, food, live sports and transportation industries are poised to see significant declines in consumer visits to these spaces driven by lingering concerns about sanitation and the coronavirus.

Based on a representative survey of over 2,000 American adults, this new research paints a stark picture of significant changes in Americans' habits over the next six months, including:

- 24 percent decline in weekly visits to brick-and-mortar retail
- 23 percent decline in weekly visits to restaurants, bars and clubs
- 12 percent decline in visits to stadiums and arenas
- 7 percent decline in visits to hotels
- 7 percent decline in taking flights combined with a 16 percent increase in long-distance car travel

"We can see how habits have changed during the pandemic, but this study is significant for what it says about how Americans plan to act months after re-opening begins," said Jim Mooney, HSI partner and Enginuity CEO. "It's clear that a lot of businesses will suffer unless they take steps to improve the public's confidence in their ability to provide healthier spaces."

When asked what disease mitigation tools make a difference to them, a large majority of survey participants felt that indoor air quality and surface disinfection affected their decisions on where to work, shop and visit. Of those surveyed, 86 percent reported that sanitation and air quality were important. Similarly, 88 percent said that disinfecting surfaces mattered, as did 82 percent for air quality.

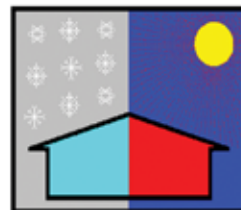
Furthermore, 84 percent of participants felt that employers were responsible for the ongoing monitoring and support of their employees' health.

"To satisfy the public's interest in clean indoor air and surfaces, businesses can turn to advanced solutions like Bipolar Ionization (BPI)," said Dr. Philip M. Tierno, Jr., Professor of Microbiology and Pathology at NYU School of Medicine. "Recent research has demonstrated that certain BPI technologies can achieve a 99.92 percent reduction in a coronavirus from indoor air and surfaces within 30 minutes. That's incredibly promising, especially at this time of a coronavirus pandemic."

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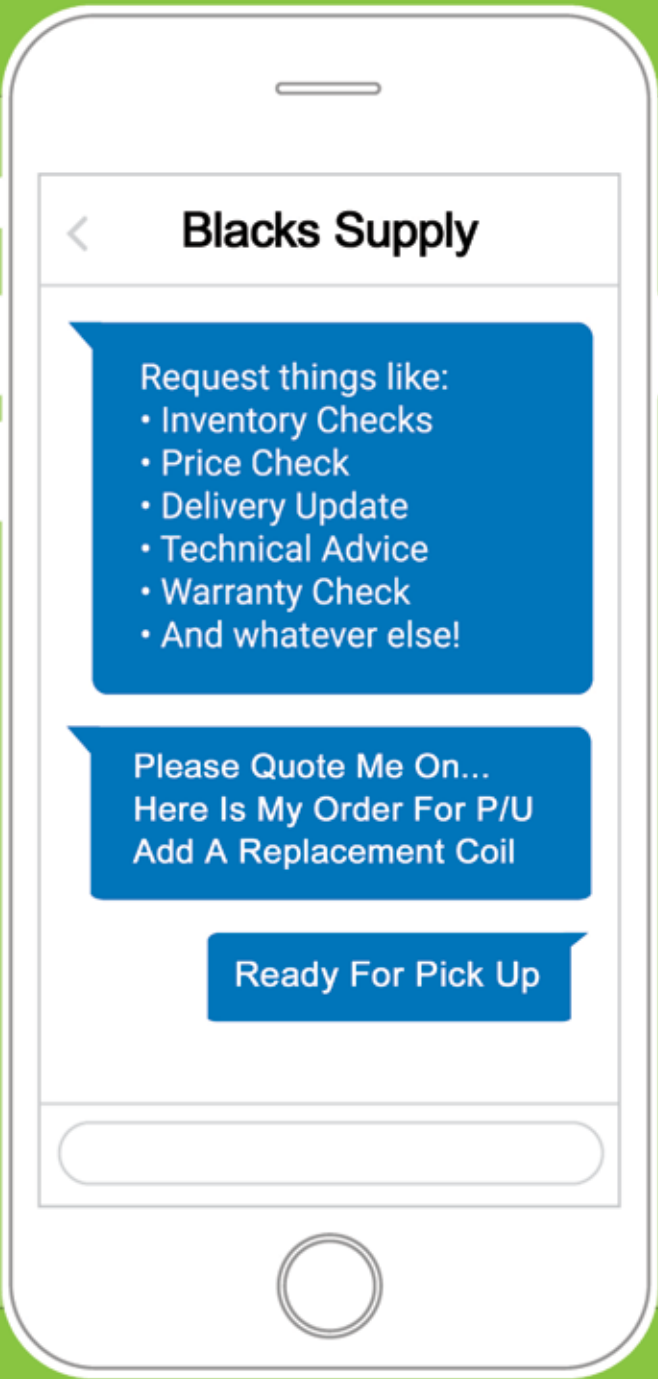
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