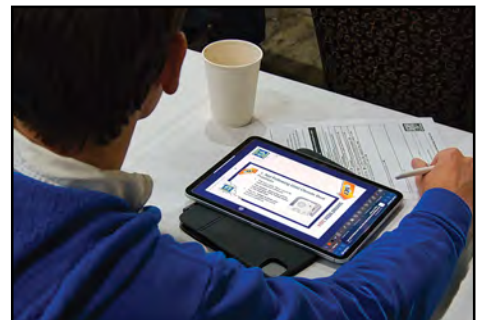


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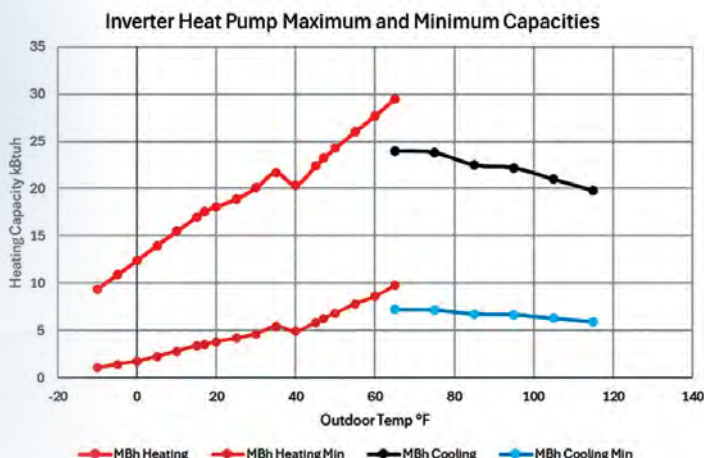
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10 TECHNICAL: Maximize Dehumidification with Modern Heat Pumps

Inverter-based heat pumps are enabling their use in cold-weather climates. Here is what you need to know.

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Are You Ready to Set the Tone for the Year to Come?



Mike Weil is editor-in-chief and director of communications and publications at National Comfort Institute, Inc. Contact him at ncilink.com/ContactMe.

It's been a month since returning from the 2024 High-Performance HVAC Summit, and there is still a glow from all the excitement that event invokes in most people who attend it. Including me.

What is most exciting is how the continuing evolution of our industry and the growing acceptance of high performance creates so many opportunities and opens the door to an outstanding 2025.

In this month's issue, we provide a re-cap of Summit 2024 on [page 15](#).

The theme this year was “**OutPerform!**” That is what the practice of system performance is all about — not only creating HVAC systems that outperform anything other contractors do but also creating a culture and approach that allows your company to outperform itself.

I'm talking about having background systems and procedures to enable your team to test, measure, and diagnose complete HVAC systems. This, in turn, helps your companies earn better yet fair profits and see more growth.

From where I stand, this sets the stage and the tone for the future.

For example, one of the main topics addressed at Summit was the newest inverter technologies in modern heat pumps. For the first time, heat pump options are becoming viable in colder climates. This tech is great for consumers and contractors alike.

Check out Ben Lipscomb's article on [page 10](#) to learn more about this trend and some of the challenges and opportunities it presents.

OTHER OPPORTUNITIES

To focus on providing consumers with safe and comfortable environments that are energy efficient, High-Performance HVAC™ Contractors

should also pay attention to some other opportunities that are out there.

Industry surveys show that **predictive maintenance** is trending upwards as contractors look for better ways to educate consumers and offer them better experiences.

I spoke with several contractors attending the Summit who were interested in the **A2L refrigerant changes** and how they could better train and prepare their teams to handle such changes.

Others looked at new **smart technologies** — not just products but also smart testing and measuring tools like [measureQuick®](#) and [True-Flow Grids](#).

Based on national consumer trends, homeowners are looking for better ways to control energy use and security in their homes and offices.

Contractors can help by using apps like measureQuick to not only gather measurement data, but then produce easy-to-understand reports that consumers can use to inform purchase and renovation decisions.

PROVIDING A PERSONAL TOUCH

During the **Summit Idea Meeting**, many of the lead generation and sales ideas shared by contractors revolved around setting their companies apart from competitors by providing customers with unique personal touches.

From lunch-and-learn programs to teach customers the advantages of new heat pump technologies to assembling product demonstration kits to help customers understand what is happening with their systems, contractors shared exciting and fresh ideas to service their markets better and grow their businesses.

They so set the tone for Summit.

And that in turn set the tone and created excitement for next year. Are you ready? NCI



Written by HVAC Professionals for HVAC Professionals

Why Use NCI's Online Training?

At [Accurate Heating and Air Conditioning](#), we use National Comfort Institute's (NCI) [distance learning and online university training platforms](#) for seven reasons:

- 1. Expert Instruction:** These courses are developed and taught by HVAC industry experts. We benefit from their insights, real-world examples, and advice.
- 2. Flexible Learning:** NCI's online platform allows everyone on my team to learn at their own pace and on their own schedule.
- 3. Comprehensive Curriculum:** NCI offers a wide variety of courses covering various aspects of HVAC principles from fundamentals to advanced topics.

Whether you're looking to improve technical skills, enhance business acumen, or stay up to date with industry trends, NCI has an online course for you.



- 4. Practical Applications:** This online training focuses on real-world applications, providing my team with the knowledge and tools necessary to succeed. Their platform helps us learn how to diagnose problems, troubleshoot issues, improve system performance, and even deal with difficult customers.
- 5. Certification Opportunities:** Many of NCI's courses lead to industry-recognized certifications. These certifications enhance our credibility, helps my techs to improve their job performance, and

increases their earning potential.

6. Affordable Pricing: NCI offers competitive pricing for its online courses, making it accessible to a wide range of industry professionals.

7. Strong Support: This organization provides excellent support to its students. You can contact their support team for assistance with course materials, technical issues, or any other questions you may have.

I find that NCI's online training offers a valuable opportunity to enhance HVAC knowledge and skills. With expert instruction, flexible learning options, and a comprehensive curriculum, NCI is the ideal choice for my company and should be for yours as well.

— by Ron Mathias, Accurate Heating and Air Conditioning 

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National Comfort Institute: *Pioneering High-Performance HVAC*

Sometimes, the paths we walk in life take us to unexpected places. That can be good or bad or both. When it comes to doing things right, doing things in a transformational way means being open to changes and opportunities and having perseverance to make something good happen.

That is precisely how National Comfort Institute (NCI) came into being.

Founded in 1994, NCI has been instrumental in transforming the HVAC industry's approach to "High-Performance HVAC™ system performance," focusing on delivering comfort, efficiency, and safety to end-users. Dominick Guarino and Rob Falke, the founders of NCI, embarked on a journey

to re-center the HVAC industry around actual system performance and customer comfort rather than solely on energy efficiency.

Guarino joined the HVAC Industry in 1987 when he became part of the *Contracting Business* magazine team, first as an associate editor, eventually becoming chief editor and associate publisher.

Falke worked in his family's HVAC contracting business in central California. In fact, he helped his father buy that business.

Eventually, Guarino filled a similar role, leaving the magazine to work for a Cleveland, OH, area HVAC contractor.

Guarino recalls, "Separately, Rob and I saw the industry shifting away

from providing optimal comfort in buildings and focusing almost exclusively on energy efficiency. We met for the first time to test a mutual friend's home, and began talking about this. Together, we thought it would be amazing to realign the industry with its core mission: delivering comfort through high-performance systems."

THE BIRTH OF NCI

The initial inspiration for NCI was that shared vision between Guarino and Falke, both veterans in the HVAC field who had seen the industry lose sight of its priorities. By the 1990s, government agencies like the Department of Energy (DOE) and the Environmental Protection Agency (EPA) had set increasingly stringent energy-efficiency standards, often overshadowing other critical factors like air quality and comfort.

Guarino expressed his concern in a 1992 article published in *Contracting Business* titled "The Comfort Revolution," which challenged HVAC contractors to refocus on the end-user experience.

Around the same time, Falke was experimenting with applying commercial air balancing techniques to residential systems. He concluded that "there was no reason why the same techniques of measuring system pressures and airflows couldn't be applied to residential systems," an insight that would shape NCI's approach.



NCI launched its **High-Performance HVAC Summit** as part of *Contracting Business* magazine's HVAC Comfortech trade show and conference. Pictured here is the late Rob "Doc" Falke (center) running hands-on testing with contractors at the show in the early 2000s.

In 2018, under Rob Falke's leadership, NCI helped spearhead the development of [ASHRAE/ANSI 221](#), an industry standard that embodies NCI's processes for evaluating residential air distribution systems.

Guarino highlights this achievement as an example of NCI's impact on establishing industry standards: "We are proud to contribute to standards that raise the bar for HVAC performance."

ADAPTING TO DIGITAL TRAINING IN A POST-COVID WORLD

Then 2020 happened. The COVID-19 pandemic prompted NCI to rethink its training delivery, accelerating its move toward online learning. Within weeks of the initial lockdowns, NCI launched virtual certification and recertification programs, enabling contractors to continue their professional development remotely.

"We were fortunate to be able to pivot so quickly," Guarino says. "Now, we offer both online and in-person classes, which allows us to reach contractors where we normally wouldn't."

NCI's online learning platform has become an integral part of its offerings, with a university providing courses in High-Performance HVAC principles and soft skills like customer service and sales.

This shift demonstrates National Comfort Institute's commitment to

adapting to modern challenges while ensuring contractors know the latest techniques and technologies.

UNIQUE TRAINING APPROACH AND FUTURE ASPIRATIONS

NCI differentiates itself from other training organizations by teaching the technical skills required in HVAC and helping contractors apply these skills to educate customers and recommend solutions.

"We're more than a technical training organization," Guarino emphasizes. "We build confidence in our trained professionals, enabling them to use testing and diagnostics in all customer

diagnostics and performance optimization. These tools are part of a broader strategy to make testing and diagnostics more accessible and intuitive, ensuring contractors can offer the highest-quality service in the field.

Guarino sees these advancements as crucial to maintaining NCI's role as the "essential training partner for contractors, distributors, and manufacturers" over the next decade.

ADDRESSING TECHNOLOGY AND EDUCATION CHALLENGES

The HVAC industry faces a rapidly changing technological landscape, presenting challenges and opportunities.

Guarino points out that new refrigerants and inverter technologies require a higher level of technical expertise, particularly in areas like airflow management, which is critical for inverter-based systems.

"Airflow has never been more important than it is now with today's advanced equipment," he states.

To help contractors meet these challenges, NCI continues to develop specialized training and support

resources that address the nuances of modern HVAC systems.

In addition to technical changes, Guarino says the company emphasizes the importance of educating homeowners on the value of a properly installed HVAC system.

"Homeowners need to understand



Over the years, the Cleveland, OH training center was where a lot of in-person, hands-on training, and certification classes took place.

interactions. This approach differentiates them in their markets and helps set them up for success."

Looking ahead, Guarino says that NCI plans to continue expanding its digital tools, such as the [Comfort-Maxx™](#) and [AirMaxx™](#) applications, which help contractors with real-time

why their equipment costs more and what value they're receiving," he explains. "A well-trained contractor who uses precision instruments can deliver top performance for this significant investment."

A LEGACY OF EXCELLENCE IN HVAC TRAINING

Since its founding, NCI has impacted the HVAC industry by focusing on performance, comfort, and safety. With a solid commitment to advancing industry standards, developing cutting-edge training programs, and fostering a community of high-performance professionals, NCI is leading the way in transforming HVAC from a trade into a true craft.

"At NCI, we're not just teaching con-

tractors how to work with HVAC systems; we're teaching them how to build trust and deliver measurable comfort to customers," he concludes. "That's the legacy we want to leave behind."

The story of this organization is that of two men who started on paths, taking them in one direction but then changing and evolving, leading them to their future. It wasn't easy. It sometimes wasn't fun. By believing in perseverance and having a mission, they wound up exactly where they were meant to be.

As NCI looks toward the future, it remains poised to evolve alongside the industry, continually raising the

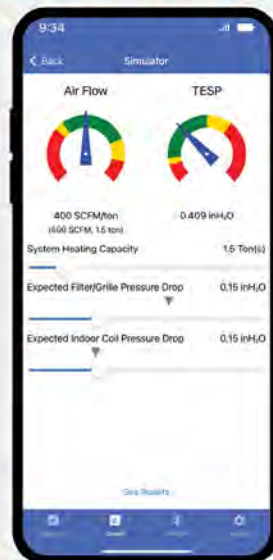
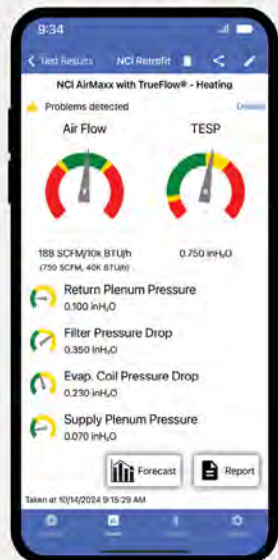


In 2024 NCI re-located its headquarters to Morristown, TN.

bar for what HVAC professionals can achieve. Through innovative training, digital tools, and a dedication to quality, NCI empowers the next generation of HVAC contractors to excel in an increasingly complex field, setting new standards for performance and customer satisfaction. **NCI**



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Maximize Dehumidification with Modern Heat Pumps

As inverter-based heat pumps become more common, I'm surprised to hear from some contractors and homeowners that humidity control has become more of an issue than it was with single or two-stage equipment. We all know humidity is removed in cooling mode, but only when the system runs.

Inverter systems are designed to operate at a lower capacity for longer periods, theoretically improving their dehumidification performance. So, what is happening, and how can we ensure we don't end up with unhappy customers due to high humidity after they shell out big money for a shiny new system?

EQUIPMENT SIZING

Equipment sizing was the first thing that came to mind as I started thinking about this issue. I sometimes hear a repeated myth that sizing doesn't matter with inverter systems – you can

oversize them, and they will operate at a lower capacity.

While it's true that inverter systems can modulate down to meet a lower load, there is a limit to how low they can go. If a system is oversized, it will need to shut down more often in low sensible load, high humidity scenarios (i.e., shoulder seasons, summer nights, etc.). The closer the maximum capacity at design conditions matches the peak cooling load, the better the system will dehumidify.

Oversizing has been a rampant problem in our industry for decades, and so has the paradigm of like-for-like equipment replacement or even going up a size if the occupants aren't comfortable with their current system.

Gas-fired furnaces tend to be even more oversized than traditional heat pumps, so replacing a furnace with a heat pump of the same capacity is likely drastically oversized. **Completing heating and cooling load calculations for new heat pumps is critical.**

In humid areas, you should take another step with load calculations. Currently, load calculation software automatically breaks down sensible and latent loads for the location you select, but only for peak cooling conditions. Peak latent loads don't usually occur under peak cooling

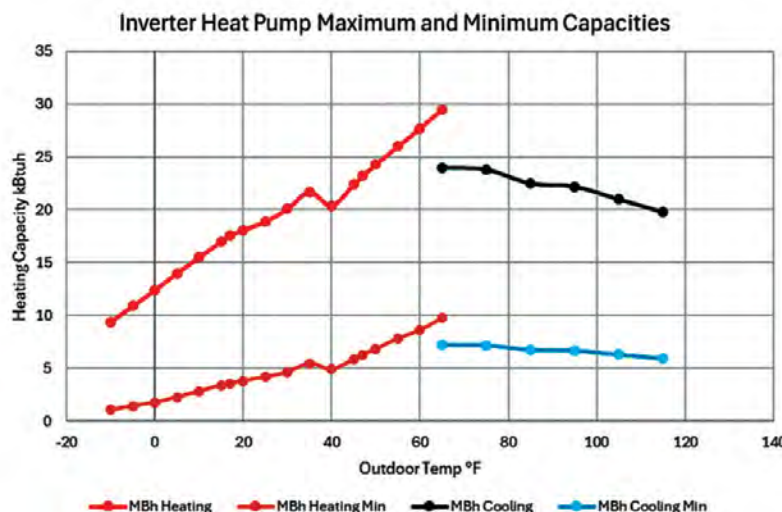


Figure 1 shows maximum and minimum inverter equipment heating and cooling capacities. The system will cycle on and off below the orange and blue lines to meet the load.



PENSACOLA INTL, FL, USA (WMO: 722220)

Lat:30.478N Long:87.187W Elev:125 StdP: 14.63 Time zone:-6.00 (NAC) Period:94-19 WBAN:99999 Climate zone:2A*

Annual Heating, Humidification, and Ventilation Design Conditions

Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB		WSF
			99.6%			99%			0.4%		1%				
	99.6%	99%	DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD	
1	29.9	33.8	12.6	10.5	35.2	17.6	13.4	39.9	24.0	54.6	21.0	54.7	8.5	0	0.410

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
7	14.2	93.9	77.6	92.0	77.4	90.3	77.1	81.2	87.9	80.2	87.1	79.4	86.4	8.6	190
Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Extreme Max WB
0.4%			1%			2%			0.4%		1%		2%		
DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	
79.4	153.4	84.3	78.4	148.0	83.7	77.4	143.1	83.1	44.8	87.9	43.7	87.0	42.9	86.4	90.3

Figure 2 - ASHRAE design conditions for Pensacola, FL. Peak Dehumidification conditions are given in DP, HR, and MCDB. You'll need a psychrometric chart or calculator to find RH to input into load calculation software.

conditions, so checking the loads under peak dehumidification conditions is necessary.

Unfortunately, most programs don't provide these conditions automatically based on location, so you must manually enter them.

LOAD CALCULATIONS SOFTWARE INPUTS

To find the peak dehumidification conditions, you can visit [ASHRAE Meteo](#) and find the location. The conditions provided are in terms of Dew Point (DP), Humidity Ratio (HR), and Mean Coincident Dry Bulb (MCDB).

Load calculation software inputs are usually Dry Bulb (DB) and Relative Humidity (RH). You'll have to plug in MCDB and either DP or HR into a psychrometric calculator to find the RH.

With these values in hand, you can save a copy of your completed load calculation, manually enter the peak dehumidification conditions, and rerun the calculation to find the true peak latent load.

Once you do this, you will likely find that the latent load is higher than that

calculated for peak cooling conditions, as shown in **Figure 2**.

In this approximately 1,700-sq. ft. home in Pensacola, the sensible cooling load for the peak dehumidification conditions is around 26% lower than the peak sensible load, but the latent load is around 50% higher.

Be sure to check the equipment's latent capacities at both the cooling design conditions and dehumidification design conditions, and remember that the equipment will be operating at less than full capacity at the dehumidification design conditions.

In this case, the equipment will operate at about 75% sensible capacity ($14,503 \div 19,565$).

So, we should assume we'll get about the same percentage latent capacity at the dehumidification design conditions and will likely need supplemental dehumidification.

EQUIPMENT SELECTION

Since we know the home's load, we can now focus on equipment selection. Again, dehumidification is maximized when the cooling capacity matches the

peak cooling load as closely as possible. However, we also have heating to consider. In **Figure 3**, the heating load closely matches the cooling load, so the selection is straightforward.

In cooler, humid climates, heating load may greatly exceed cooling load, so we must decide whether to select equipment based on heating or cooling requirements. There are arguments for both ways on this question.

If you size to the heating load, you will likely have to provide a dedicated dehumidifier to maintain acceptable humidity levels in the home. Why? Because the system will cycle off too often under lower load, high humidity conditions.

If you size to the cooling load, then you will need to provide supplemental heating, typically with inefficient electric resistance heat that can make heating bills skyrocket.

I lean toward sizing for the higher load, either heating or cooling, to take full advantage of the heat pump's efficiency. Of course, that may mean I'll need additional dehumidification through a separate dehumidifier. This

1% Cooling Design Conditions

Building Loads				
Total Heating Required Including Ventilation Air:	23,765 Btuh	23.765 MBH		
Total Sensible Gain:	19,565 Btuh	83 %		
Total Latent Gain:	4,097 Btuh	17 %		
Total Cooling Required Including Ventilation Air:	23,662 Btuh	1.97 Tons (Based On Sensible + Latent)		

1% Dehumidification Design Conditions

Building Loads				
Total Heating Required Including Ventilation Air:	23,765 Btuh	23.765 MBH		
Total Sensible Gain:	14,503 Btuh	70 %		
Total Latent Gain:	6,164 Btuh	30 %		
Total Cooling Required Including Ventilation Air:	20,667 Btuh	1.72 Tons (Based On Sensible + Latent)		

Figure 3 – Comparison of building loads under peak cooling conditions vs. peak dehumidification conditions.

course of action avoids electric heat strips altogether.

Even when sizing for cooling, supplemental dehumidification is often necessary in humid climates, especially in modern high-efficiency homes. A good building envelope can significantly reduce sensible loads. Still, latent loads remain about the same as they would for an inefficient home because a lot of that moisture comes from indoor sources like people, cooking, laundry, etc.

OTHER SIZING CONSIDERATIONS

When sizing for the heating load, opting for a cold-climate heat pump usually makes sense. Cold-climate heat pumps provide higher capacity to lower temperatures than standard inverter units. This can minimize the gap between heating and cooling capacities, providing better dehumidification performance and higher cooling efficiency.

There are no standard criteria for what qualifies as a cold-climate heat

pump, but I would suggest the following considerations:

- Variable capacity, oversized compressor and coils, vapor injection
- 95% to 100% capacity down to 5°F
- Operate down to negative temps (-4°F to -13°F)
- Base pan heater.

The chart in **Figure 4** compares the heating performance of a cold-climate heat pump model to the standard inverter example in **Figure 1**.

Both models are nominally rated at two tons, but the cold-climate model can actually provide 2.5 tons at the standard rating temperature of 47°F. It retains the complete two tons down to 5°F.

This figure also plots the load of the Pensacola home we looked at in **Figure 3**. The cold climate model will easily meet the peak heating load at the 34°F design temperature, but the standard model would require heat strips – even in Florida!

When selecting equipment, remember that all inverter equipment

does not perform similarly. Different makes, models, and even sizes within a single model range can have dramatically different performance characteristics. Check the performance for the specific makes, models, and sizes you're considering installing.

I've heard of inverter equipment matched with single or two-speed blowers by the manufacturer as a budget option. Such systems cannot modulate down very far because the airflow cannot be adjusted to match compressor output.

If these budget models do modulate down, latent performance will be poor because the airflow will be high compared to the compressor output. These systems are not a good choice for areas with high humidity, and I would steer clear of them altogether. Review the expanded performance data of the specific make and model you select.

I've also seen research indicating that **ductless** heat pumps do not control humidity as well as **ducted** heat pumps. I'm not sure why this is,

but I guess that ductless units tend to keep airflow higher relative to capacity than their ducted cousins. Why?

Because they must distribute the air through the space from a single air handler head rather than through multiple supply registers.

Regardless, it may be best to think twice about using ductless systems where humidity is a concern.

INSTALLATION, COMMISSIONING, AND CONTROLS

Proper equipment installation using adequately sized, well-insulated ducts that don't leak is required to operate any equipment properly. Inverter systems are no different.

Another universal requirement is correctly setting airflow and refrigerant charges for proper system operation. When setting airflow, a lower range of 300 to 350 CFM/ton helps lower the equipment's Sensible Heat Ratio (SHR) and is helpful in humid climates.

Fine-tune the refrigerant charge after setting this lower airflow.

Regarding controls, most inverter systems use communicating thermostats that have some built-in functionality that is helpful for moisture management. There is often a "dry mode" that keeps airflow lower relative to capacity throughout the operating range.

Dry mode helps maximize latent capacity at the expense of some total capacity as the equipment modulates down. Confusingly, some manufacturers call this the "humid mode."

The lesson: you must know the equipment you sell!

Along with dry or humid modes, some thermostats allow you to set an overcooling allowance when indoor

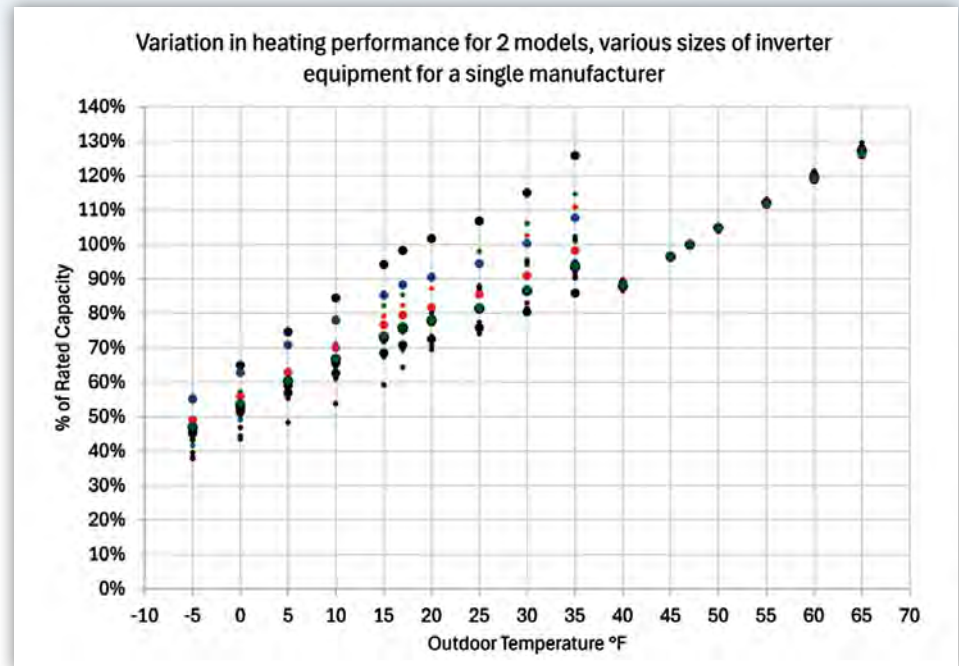


Figure 4 - Even similar equipment offerings from the same manufacturer can perform quite differently. Get the specific data for the unit(s) you are considering!


humidity is high. I recommend limiting overcooling to 1°F or 2°F below setpoint, which could lead to a cold and clammy feeling in the room.

IT COMES DOWN TO SIZING, SELECTION, AND SETUP

As you can see, a lot goes into thinking through sizing, selecting equipment, and setting it up correctly (The *Three "S's"*) to provide customers with first-rate moisture management even with today's excellent and smart inverter heat pumps. During your next few heat pump jobs, take your time and think through the Three S's, and you'll begin to understand what you need to do in your area to make systems work as well as they can.

You'll soon discover standard practices you can apply to every job that make your heat pumps work much better than competitors simply doing like-for-like replacements.

Maybe you'll only install cold-climate heat pumps. Perhaps you'll always install a standalone dehumidifier. Maybe you'll avoid a brand whose performance doesn't match well with the homes you tend to work on or your climate.

Feel free to comment and share any best practices you've found in your area. I would love to hear how others are approaching moisture management with heat pumps or even just heat pump design in general. 



Ben Lipscomb, P.E. has more than 16 years of experience in the HVAC industry, including laboratory and field research, Design/Build contracting, and utility energy efficiency program design.

He is [National Comfort](#)

[Institute's](#) director of engineering and utility services. You can contact him at ncilink.com/ContactMe with any questions.



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Breaking Records and Setting the Stage to OUTPERFORM in 2025

Last month the High-Performance HVAC Industry gathered in Asheville, NC to regroup, recharge, and set the stage to **Outperform** in their marketplaces in 2025. What does this mean? It means contractors and other industry professionals go together from all across North America to learn how to apply technical knowledge and training to improve the safety, health, comfort, and energy efficiency of your customers' homes.



For the first time, industry influencers conducted live podcasts from NCI's High-Performance HVAC Summit.

Outperform was the theme for this year's Summit and is the mission of National Comfort Institute (NCI). NCI CEO and President, Dominick Guarino, told the record-breaking audience during the event's opening general session, "Our mission is to help you implement high performance in a step-by-step, easy to follow method.

"This year we have created an experience that

includes peer-to-peer interactions, questions, learning opportunities, and sharing with fellow like-minded contractors," he said. "Here you will brainstorm new ideas with peers, relax in a truly productive environment, and gain valuable knowledge from all of the comprehensive workshops and general sessions."

CHANGES ARE COMING

Changes in the HVAC industry are happening faster than ever before. Electrification, heat pumps, inverter technology, new refrigerants, and new efficiency standards are just a few of the challenges and opportunities in front of us.

The key is to be prepared, proactive, and educate your team to meet the new opportunities head-on.

This ties directly into the Summit's **Outperform** theme. Among the many breakout workshops were special sessions covering the new heat pump technology, the new refrigerants, and what changes in terms of comfort, installation, and service. It also changes how High-Performance HVAC™ contractors test, measure, and diagnose comfort issues for their customers.

BREAKOUT SESSIONS FOR THE NEXT LEVEL OF SUCCESS

This year's breakouts were presented by both high-performance contractors as well NCI instructors and included the following:

- **How to Build a High-Performance Culture in Your HVAC Business** — Presented by John Boylan, General Manager, Lakeside Service, Brighton MI
- **Anatomy of the High-Performance Sales Process** — Presented by Dawn Mroczek, Sales Manager, GV's Heating & Air, Glenview, IL



- **High-Performance HVAC Renovations from Start to Finish** – Presented by Dustin Cole, Owner, Cole Air, Inc., Lake Charles, LA
- **How to Take Combustion Testing to the Next Level** – Presented by NCI Instructor Mark Hunt
- **The Sweet Spot: Where Building Science and HVAC Intersect** – Presented by Rob Minnick, NCI Instructor
- **Customer Communication: Drop the Technospeak** – Presented by Chuck Worley, Worley Home Services, Yorktown, VA
- **Climate Resilient Heat Pump Strategies** – Presented by Ben Lipscomb, NCI Director of Engineering and Utility Programs
- **How To Solve the Top 10 Inverter Installation Issues** – Presented by Bryan Orr, President, Kalos Services and HVAC School
- **How to Properly Design with Today's Heat Pumps** – Presented by Adam Mufich, NCI instructor
- **The Air Upgrade Cure: A Simple Solution to HVAC Equipment Failures** – Presented by David Richardson, NCI VP of Training
- **PerformanceTown – Take Your Testing Accuracy to the Next Level** – Taught by the NCI Instructor Team.
“This is my first Summit experi-

ence,” says Anthony Woo of Climatisation ACG, Inc. of Montreal, Canada. “My main reason for being here was to learn more about indoor air quality from John Ellis, but then I started meeting all these people who think the way I do.”

“I was really impressed with Dawn Mroczek’s class on high-performance sales. And the networking — I absolutely loved meeting so many different people from both Canada and the U.S. They were all so willing to share ideas and experiences.”

SUMMIT FIRSTS

The 2024 Summit marked the largest in attendance ever. With more than 200 attendees, 30% of which were first timers, shows that the high-performance approach is moving into its second generation, according to NCI CEO and President Dominick Guarino.

This is also the first Summit where HVAC Industry social media influencers attended AND conducted live streaming and podcasts throughout the event.

One influencer, Bryan Orr, was also the keynote speaker and an instructor in the inverter breakout session.

His keynote focused on how to get and keep great people on your team. He discussed recruiting the right people and keeping them engaged and

More than 200 attendees were welcomed to Summit by NCI CEO and President Dominick Guarino (right).



fulfilled so they stay with your team.

Back to the influencers, some of those who participated in the live stream and podcast events included:

- John Ellis from Dynamic Air Consulting Services
- Louise Keller of UEI
- Jim Bergman from measureQuick®
- Brian Orr from Kalos Services
- Steve Rogers from The Energy Conservatory and others.

Contractor attendee Tom Hearn of Hearn Plumbing and Heating, Madison, OH, says that Summit is a place where he and his team come to learn what is new in the industry as well as to recharge their “batteries.”

“The industry needs to pay attention to the concepts of high performance as NCI teaches them,” he says.

“They do a phenomenal job at setting the standard of how HVAC equipment should be installed in someone’s home. Coming to Summit helps you understand what the standard should be for every homeowner and company across the country,” Hearn adds.



Dominick Guarino recognizes those technicians and contractors who won scholarships to attend the 2024 Summit.

PERFORMANCE TOWN

As has been the NCI tradition for many years, Summit included hands-on testing experience on several working HVAC systems to help attendees learn more about delivering high performance through diagnostics.

NCI's John Puryear, Casey Contre-ras, and [measureQuick's](#) Jim Bergman guided participants through testing principles, instruments, mobile apps, and processes to help attendees discover the hidden defects impeding system performance.

THE IDEA MEETING

Contractors convened for the famous contractors-only Idea Meeting hosted by Chuck Worley of [Worley's Home Services](#), Yorktown, VA, and Mike Weil of NCI. This meeting consisted



Jim Bergman demonstrates the measureQuick app during one of Summit 2024's PerformanceTown sessions.

of two one-hour sessions: one dedicated to High-Performance Lead Generation and the other to Sales.

Attendees presented their ideas on each topic and then voted for those they felt were the best. The winning ideas were from:

— **Lead Generation:** Nick Lupo of Control Point Mechanical, Shrewsbury, MA, won for his customer lunch and learn focused on the new heat pump technologies.

— **Sales:** Creating a product demonstration kit for use at home shows and on sales calls won in this category. Will Horner of Canco ClimateCare, Newmarket, Ontario, Canada, won the cash prize.

PARTNER TRADESHOW

Nineteen partner exhibitors managed tabletop displays around the general session ballroom so contractors could talk with them during breaks and regularly scheduled trade-show hours.

Exhibitors also participated in NCI's Annual Preferred Partner Prize Drawing. Attendees received "game cards" that had to be stickered by each exhibitor and then turned in to be eligible for the drawing.

This year's exhibitors included the following:

- Arzel Zoning
- Baker Distributing
- Conduit Tech
- Daikin
- Duct Saddles
- Evergreen Telemetry

- Fieldpiece
- MeasureQuick
- MSA Bacharach
- National Carbon Monoxide Awareness Association (NCOAA)
- Online Access
- RE Michel
- RectorSeal/DustFree
- Sauermann
- Testo
- The Energy Conservatory
- TruTech Tools
- TSI
- UEI Test Instruments.



The contractor attendees were focused on learning from all the vendor partners during the 2024 NCI Summit in Asheville, TN.

ANNUAL AWARDS BANQUET

No NCI HVAC Summit would be complete without the Annual Awards Banquet, where NCI recognizes outstanding achievements by High-Performance HVAC contractors across North America.

Dominick Guarino told attendees, "Tonight's event is one of my favorite parts of every Summit. It's an opportunity for us to shine a bright light on the real heroes of this group – our amazing Award Winners.

"More than just members and customers, you are the heart and soul of



this great NCI family,” he continued.

“Your success is what keeps us going. And we feel so blessed that you’ve chosen to become part of this caring group that continues to selflessly share what is working for you and mentor each other.”

This year’s awards were presented to the following:

- **Small Contractor of the Year** — *Southeast Clean Air Solutions*, Henrico, VA
- **Medium Contractor of the Year** — *Cole Air*, Lake Charles, LA
- **Large Contractor of the Year** — *Worley’s Home Services*, Yorktown, VA
- **John Garofalo Implementation Excellence Award** — *Vincent’s Heating & Plumbing*, Port Huron, MI
- **Jim Davis Technical Excellence Award** — *Henry Sterling of DiMarco & Associates*, Chagrin Falls, OH
- **Rob Falke Servant Leadership Award** — *John Boylan, Lakeside Service Co.*, Brighton, MI
- **Scott Johnson Training Excellence Award** — *Davis Services*, Spartanburg, SC

■ **Spirit of Excellence Award** — *Tom Johnson, TM Johnson Brothers*, Grandy, MN

■ **Sales Excellence Award** — *Hunter Wallace, Progressive Heating & Air*, Newnan, GA

■ **Vendor Partner of the Year Award** — *The Energy Conservatory*, Oakdale, MN

■ **The NCI 2024 Chairman’s Award** — *Nancy McKeraghan, Canco ClimateCare*, Newmarket, Ontario, Canada.

More details on each of these awards can be found on our website at nci-link.com/2024SummitAwards.

DAVID DEBIEN AWARD RENAMED

For 17 years the Technical Excellence Award was named for David Debien, an HVAC contractor from Houston, TX who resisted popular industry trends with regard to high SEER cooling systems — in his climate, they simply didn’t work.

Instead, he designed and built his own custom systems to handle the Houston area humidity. Then his team tested and verified their operation. His dedication to advancing

the industry and questioning popular trends embodied the heart and soul of this award.


But this year it was time for a change. Says David Richardson, NCI’s vice president of curriculum development and the very first Debien Award recipient, “We decided to rename this award in honor of another industry pioneer, our very own Jim Davis, a man who has saved more lives than we’ll ever know.

“Jim is the pioneer and daddy of modern day carbon monoxide and combustion safety training. In his honor, the David Debien Technical Excellence Award is now the **Jim Davis Technical Excellence Award.**”

Congratulations to all of this year’s winners.

NEXT YEAR IN AUSTIN, TX

Mark your calendars for the High-Performance HVAC Summit 2025. It will be held in Austin, TX, from September 9th through the 12th. We will have more information posted on GoToSummit.com.

Stay tuned for more information on pricing and registration. 

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Territory Managers Are Our Allies: Let's Be Theirs!

HVAC contractors don't get their equipment straight from the factory; they go through a distributor or a manufacturer representative. They'll often communicate with the territory manager (TM) for information about sales and programs. TMs do a lot more than just sell equipment; they also help contractors with whom they work.

Everyone in the value chain benefits from solid contractor-TM relationships: contractors, TMs, and consumers. These relationships enable TMs to meet their goals more easily, and contractors can have a reliable liaison representing the factory. Good TM relationships often leave room to negotiate pricing.

Contractors can start building that solid foundation once they understand what TMs want and what they do. Then, contractors and TMs can help each other work toward their respective goals together as they find common ground.

SO, WHAT DO TERRITORY MANAGERS DO?

Territory managers are the lifeline that connect contractors to manufacturers. It is within a TM's responsibility to be up to date on a wide number of issues that contractors may take for granted — like legislation changes on refrigerants.

Furthermore, TMs help contractors understand equipment changes, shortages, or even possible recalls. They even handle simple things like bulk savings on models, which allows contractors to

offer superior products at competitive prices.

On a typical day, a TM may check in on the branches in their territory and communicate with dealers to see if they can do anything to help them. They can assist with getting contractors into **factory-provided training** on new equipment or industry changes.

Territory managers can also help dealers navigate processes and procedures, including distributor tech support, credit, and warranty returns. They keep their dealers up to date on pricing, promotions, and any rebates. Contractors can then advertise these programs in their marketing

materials to attract customers.

Those are some typical responsibilities, but we all have days where we feel like we've accomplished something great at work — whether we've gotten to the root of a

difficult problem, installed and commissioned a system that will help customers reach their comfort goals, or simply had zero callbacks.

For TMs, one such day is when they can solve a problem for one of the contractors they work with — even if it means going out of their way. After all, **success for the dealer is success for the TM**.

TERRITORY MANAGERS WANT SALES

Now, let's look at what motivates territory managers. TMs receive sales quotas from manufacturers. Their primary goal is to move enough boxes to meet those quotas, which is why they want





to work with contractors who can reliably sell equipment.

Contractors are also salespeople, but they get deeper into the details: think of dialing in overall system performance and indoor air quality to achieve an individual customer's comfort and efficiency goals. Both roles are vital to the same overall objective: delivering comfort.

Contractors can be good partners in that process by following TMs' standard operating procedures and being mindful of their timelines for payment and warranty returns.

Oh, and equally as important – contractors should deliver high-quality results, especially during installation.

TIMELY PAYMENT & WARRANTY PROCESSING

Territory managers' targets aren't personal goals — they are time-bound objectives set forth by the manufacturer, and TMs must achieve them to maintain good standing in their jobs. When contractors are late with payments on purchases and have large

volumes of unprocessed warranty returns, they create major challenges that can put a TM in jeopardy.

Each TM will likely have standard operating procedures (SOPs) for ordering parts, equipment, or filing warranty claims. These SOPs are in place to make operations run smoothly and reduce overhead costs. Quick and reliable payments and warranty returns are great for the TMs.

Keep in mind that warranty returns aren't pleasant, and everyone wins if such claims are avoided by having a thorough installation, commissioning, and diagnostics process.

However, they are a fact of life in the HVAC industry, and TMs know that. While a TM might raise an eyebrow at a contractor with a large volume of warranty claims compared to other dealers in the area, they mostly care about timely processing.

Ideally, the purchase and credit for the warranty product should all happen in the same month.

TMs may start to sweat when large purchases (and large volumes of

warranty returns) are processed so late that the credit won't hit until the next month.

Delayed transactions can mess up their numbers and jeopardize their ability to meet their goals. Not to mention, they reduce the overall buying power the contractor now has, which reduces the amount of equipment they can purchase that month, inevitably hurting both parties.

Distributors may want their dealers to use mobile apps or websites to complete transactions online and cut out some administrative overhead. TMs often help their dealers navigate those processes, and they appreciate contractors who put forth a sincere effort to provide payments and submit warranty claims promptly.

RESPECT TIME AND EFFORT

This tip is quite simple. Treat TMs the way you would like to be treated by your customers. One way to show respect for their time is to know when to ask a question and when you can get an answer elsewhere.



it's all about
relationships

- Have a question about the equipment while troubleshooting? Check the manual first.
- Have a basic question about promotions offered by the manufacturer? Check the manufacturer's website first.

However, asking the TM will be your best bet if you have questions about product availability, pricing, or even new products that have yet to hit the shelves. Other items take time away from the TM's ability to do their job.

Contractors should recognize the value of working with a TM and treat that person as someone with their own schedule, responsibilities, and goals. Do that and TMs will be more willing to come through for you when you need it.

There will be times when you quickly need a part, and the only way to get it in a timely manner might be for the TM to get in their car and drive it to you. They'll likely do it if you have a good relationship, and everybody wins: the TM, the contractor, and the end user who needs the part for their HVAC system to work.

HIGH-QUALITY INSTALLATIONS AND CUSTOMER EDUCATION

Contractors and TMs have another

thing in common, whether they realize it or not: they represent the equipment's brand. Territory managers know this. They're representatives of the brand(s) they carry.

Contractors may advertise themselves as dealers of a specific manufacturer, but that's usually secondary to their company branding. However, a contractor's ability to carry out quality installation and commissioning procedures will affect **system performance and longevity**, which influence their customers' opinions of the company whose logo is on the unit.

During startup, contractors can be mindful of low-hanging fruit, like making sure variable-speed fans have their settings properly set based on the system tonnage.

Again, thorough commissioning takes things a step further and prevents issues like premature blower motor failure due to solvable high static pressure.

Premature part failures can make a customer question contractor or brand reliability, which could translate to lost business. That hurts the TM when it comes to meeting sales goals that increase year after year.

It's also up to the contractor to educate customers about their systems.

When the customer knows how their HVAC system works, they know what to expect of their system's performance and how to use it properly so that it lasts a long time.

Longevity and reliability look great for the HVAC unit's brand and the contractor, which can secure more sales in the future and more business for the TM.

A STRONG PARTNERSHIP IS KEY

Everyone in the **supply chain** — manufacturers, distributors, and contractors are in the HVAC business to make money and deliver quality indoor climate control to the end user.

As easy as it may be for HVAC field workers and business owners to direct frustration at manufacturers and distributors over pricing (which may or may not be warranted), we'd be wise to remember that TMs and contractors are on the same team.

None of us are perfect, but contractors and TMs can form strong, mutually beneficial relationships by showing genuine respect for each other and pride in their work.

What benefits contractors ultimately benefits TMs. Building a strong partnership with your TM is not only a smart business decision but also sets you apart from your competition. It is a win-win relationship. **NCI**



Emily Gutowski is the technical writer and content editor for **HVAC School** (founded by Bryan Orr), in Clermont, FL. She credits the following people for contributing to this article: Bryan Orr, Mike Layton (director of operations for Shore Distributors in Maryland), as well as Jesse Claerbout and Roman Baugh of **Kalos Services**. Emily can be reached at ncilink.com/ContactMe.

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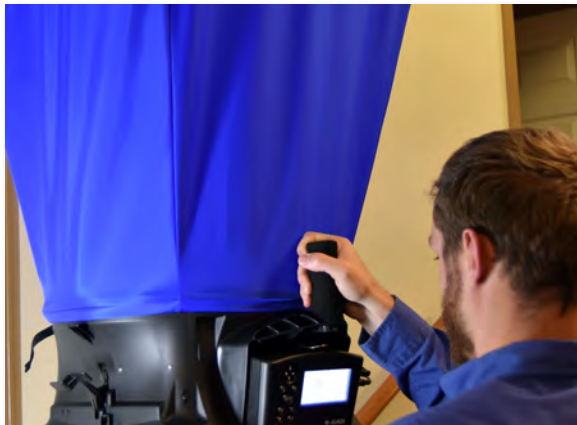
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Mastering HVAC Sales Through High-Performance Testing

In my earliest days in this industry, I never imagined the profound impact performance testing would have on my career and business. Over the years, I became a National Comfort Institute (NCI) member.

The result of membership and attending training was discovering that thorough testing and accurate measurements are not just technical procedures but essential tools for building trust and closing more sales.



THE BIRTH OF A NEW APPROACH

However, my early success as an HVAC business owner changed dramatically with a divorce and then bankruptcy. This unfortunate turn of events led to a brief hiatus from the HVAC contracting industry.

Upon my return, I was more determined than ever to differentiate my company through High-Performance HVAC™ practices.

High-performance work really sets my company apart. Imagine five contractors entering a home; we are the only ones equipped with instruments that provide real-time data. We use airflow hoods, static pressure tools, and other advanced equipment that broadcast information directly to

our cell phones.

Customers immediately notice this level of detail and expertise, often remarking that no other contractor has ever tested their ducts or measured airflow.

THE POWER OF THE FLOW HOOD

One of the most impactful tools in my arsenal is the airflow hood. Its presence alone sparks curiosity and opens up new conversations with customers. They have often told me that other contractors claimed their ductwork was fine without any testing. That's when I pull out the flow hood and ask if those contractors have ever used one. Almost always, the answer is no. Using the flow hood allows me to demonstrate the importance of proper testing.

I recall when our leads were dwindling, and I juggled roles as the general manager and the full-time salesperson. I started taking a flow hood on every job to maximize my effectiveness. Despite initial resistance from some customers, I persisted. I would explain the basics: a three-ton unit should operate at around 400 CFM per ton, so it should be at 1200 CFM. We would measure the returns together, and often, we would find significant discrepancies.

For example, if we measured 800 CFM instead of 1200, I would break it down for the customer: "That's a 33% air loss. Your system is being choked."

This simple math made the issue tangible and understandable, helping customers realize the necessity of addressing their ductwork.

EXPANDING SERVICES AND MAXIMIZING CALLS

At [Worley Home Services](#), we not only



offer HVAC services, but we also offer crawlspace encapsulation, dehumidifier installation, and attic renovations. These additional services provide more value to our customers and create cross-selling opportunities.

When selling a duct system or an HVAC unit, I always look for other potential upgrades that could benefit the customer. This holistic approach has been instrumental in our growth.

I believe in maximizing every sales call by being thorough in our inspections, taking pictures of any issues, and educating customers about their options.

For instance, during the sweltering summers in Virginia, crawl spaces often show signs of sweating and condensation. Pointing these out and explaining their impact on the HVAC system helps customers see the bigger picture and the interconnectedness of home performance issues.

TRAINING AND EMPOWERING SALESPeOPLE

Our salespeople are not heavily involved in performance testing, but that is our goal. We have two full-time salespeople, one generating \$3 million and

the other around \$2 million in sales.

I focus on marketing, branding, and lead generation, but I plan to train and certify our sales team in testing and measuring. This training and capability will further enhance our credibility and ability to close sales.

Our service technicians already perform static pressure tests, and their findings often lead to additional sales opportunities.

We can and will create a more seamless and convincing sales process by equipping our sales team with similar skills and tools.

LEVERAGING ADVANCED TOOLS AND APPS

Tools like the flow hood and static pressure instruments are invaluable, but we're also exploring advanced apps like [measureQuick®](#) and [ComfortMaxx™](#). These apps can connect to various analyzers and manometers, providing detailed reports that help customers better understand their system's performance.

I was an early adopter of ComfortMaxx despite its initial complexity. Today, apps like measureQuick have streamlined these processes, making

integrating performance testing into our routine easier.

At industry conferences and trade shows, like NCI's High-Performance HVAC Summit, I know I will learn more about these tools and how they can benefit our business.

THE IMPORTANCE OF CUSTOMER EDUCATION

This next point is so important. Educating customers is a strategic priority. During slower seasons, when customers are less rushed, we take the time to explain the science behind our tests and measurements.

This approach resonates particularly well with many engineers living in our market. They appreciate the detailed explanations and data-driven insights.

For others who might be more skeptical, we emphasize the practical benefits. For example, if a customer has a humidity issue in their bathroom, we explain how a correctly sized bath fan can resolve it.

By listening carefully to their concerns and presenting our findings in simple terms, we build trust and demonstrate the value of our services.

CROSS-SELLING AND TEAM COLLABORATION

Cross-selling is another cornerstone of our strategy. We work closely with other contractors, like plumbers and electricians, who can refer us when they see potential HVAC issues. In return, we provide leads for their services when we identify relevant problems. This collaborative approach maximizes our reach and effectiveness.

At **Worley Home Services**, we also incentivize our technicians to generate leads. They receive a referral bonus for any job that stems from their recommendations. Paying such bonuses boosts morale and creates a culture of proactive problem-solving within the team.

BUILDING A REPUTATION FOR EXCELLENCE

In the HVAC industry, reputation is everything. We have set ourselves apart by committing to high-performance testing and measurements. Our approach has helped us close more sales and fostered long-term customer relationships.

Every job we complete has my name on it, and I strive for excellence. Our “happy check” system ensures we follow up with every customer, promptly address issues, and maintain the highest quality standards. This dedication to customer satisfaction has been a significant driver of our success.

High-Performance HVAC testing and measuring are not just technical tasks; they are powerful sales tools. By

integrating them into our processes, using them to help educate our customers, and constantly striving for improvement, we have built a thriving business that stands out in the crowded HVAC market.

By sharing some of our practices, I hope to inspire other contractors to adopt high-performance strategies and achieve similar success. **NCI**



Chuck Worley is the owner of Worley Home Services, Yorktown, VA. This full-service home services provider was established in 2016 and has grown from the original team of three to become 75 strong. He is an active marketer and radio show host focusing on creating raving customer fans. For more information, reach out to ncilink.com/ContactMe.



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Navigate Your Path to High Performance

With NCI's 2024 High Performance Summit now in the books (**see recap article on page 15**), we are pleased to announce the 2025 event.

Summit 2025 will call Austin, TX home from September 9th to the 12th. The theme for next year is *"Navigate Your Path to High Performance."*

Mark your calendars today and be prepared to navigate your way to the **Kalahari Resorts & Conventions** — not only an ideal location for Summit, but also for family vacations and fun. It is home to one of the largest indoor water parks.



By the way, water park entrance is included for all registered guests.

Hotel reservations are open now (just say you are with the NCI group to get our special rate). Call **877-525-2427** to make your reservations today.

For more information about Summit 2025, stay tuned here for upcoming announcements and be sure to check the gotosummit.com website.

If you have any questions, be sure to call the NCI Customer Care line at **800-633-7058**.

The Member Rewards Partner Program

One of the biggest advantages to becoming a member of National Comfort

Institute (NCI) is the training. Tied directly into that is what NCI calls it's **Member Rewards TIPP** (Training Incentive Partnership Program). So, what is this?

NCI has 17 HVAC industry partners, broken down into three groups:

- **Manufacturers**
- **Wholesale Distributors**
- **Business Products and Services**

TIPP puts your rebate dollars to work by converting them into **NCI Bucks** to train your High-Performance HVAC™ team immediately.

Here's how it works – members in good standing are eligible to participate in TIPP. If you choose to do so, incentive dollars from our industry partners will be deposited into your training account in the form of NCI Bucks. You can use these funds to pay for any **live NCI training class, online training, or conference**. NCI Bucks can reduce or even eliminate your training costs as a member. That alone makes Bucks a key benefit of your membership.

Why is this such a great benefit? Let's face it: training is expensive in time and money. We've designed TIPP to help you earn money toward training through purchases of equipment, products, and services that you already buy from NCI industry partners. This offsets the costs of training, making it much more affordable. So when you do have the time to train your team, the training bucks are ready for you to use.

Furthermore, NCI Bucks are not taxable, so you save money over traditional rebate programs.

NCI Membership does have its advantages. So call the customer care line at **800-633-7058** to learn more about these

enormous benefits and discover what it takes to become a member.



Welcome NCI's New Members

National Comfort Institute would like to recognize the following HVAC contracting firms that recently joined the High-Performance HVAC™ industry:

- AA Forced Air Pro's HVACR, Millersville, MD
- ASAP Plbg, Htg. & Air Conditioning, Corona, CA
- Capital Heating, Cooling & Electric, Menomonee Falls, WI
- Comfort Pro Inc., Reading, PA
- Climatisation ACG Inc., Vaudreuil-Dorion, Quebec, Canada
- Five Star Home Services, Canal Winchester, OH
- Jake Marshall Service Inc., Chattanooga, TN
- Jake's Heating and Air, Knightstown, IN
- Modern Comfort Mechanical, Enfield, CT
- Mountain Air Mechanical Contractors, Arden, NC
- NC Advanced Heating and Air, New Bern, NC
- Quality Degree, Inc., Royersford, PA.

If you are interested in membership, please call **800-633-7058** for more information. 



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Location: W311D

The Air Upgrade Cure: A Simple
Solution to HVAC Equipment Failure
*Presenter: David Richardson, Vice President
of Training, National Comfort Institute, Inc.*

Monday, Feb 10 • 4:00 - 5:00 pm
Location: W311D

The PATH to High Performance HVAC:
A Step-by-Step Approach

*Presenter: David Richardson, Vice President
of Training, National Comfort Institute, Inc.*

Tuesday, Feb 11 • 9:00 - 10:00 am
Location: W311D



The Building Side of the
Duct System: Where Building
Science and HVAC Intersect

*Presenter: Adam Mufich,
Curriculum Developer & Instructor
National Comfort Institute, Inc.*

Tuesday, Feb 11 • 10:30 - 11:30 am
Location: W311D

Panel Discussion: 2025 State of the
Industry: Today's Market, Challenges,
Opportunities & What's Ahead

*Panel Participant Dominick Guarino, President
and CEO, National Comfort Institute, Inc.*

Tuesday, Feb 11 • 10:00 - 11:00 am
Location: W314

Navigating the Workforce Rollover:
How to Recruit, Train and Build a
Strong HVACR Team Today

*Moderated by Dominick Guarino, President
and CEO, National Comfort Institute, Inc.*

Tuesday, Feb 11 • 11:30 am - 12:30 pm
Location: W314



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Dominick Guarino

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Will You Take the Red Pill or the Blue Pill?



Dominick Guarino
is publisher of
*High-Performance
HVAC Today* magazine
and CEO of National
Comfort Institute, Inc.
He can be reached
at [ncilink.com/
contact me](mailto:ncilink.com/contact).

At the [High-Performance HVAC Summit](#) this past September in Asheville, NC, we illustrated how our industry is shifting towards high performance.

In a general session, I played a famous clip from the first “*The Matrix*” movie where Morpheus is sitting down with Neo to show him the truth about the Matrix. He explains that no one can be told what the Matrix is — that you have to see it for yourself.

Morpheus describes the Matrix as the perceived reality that things are fine, that everything around them is working perfectly. He offers Neo a choice between taking a blue pill and a red pill. If Neo chooses the blue pill nothing will change and life will seem to be just fine.

In our industry, blue pill contractors often unknowingly live in this type of fantasy world. They do the minimum necessary to service and maintain equipment, and they sell and swap boxes when they break down or age out. These companies represent nearly 90% of our industry!

If Neo chooses the red pill he will see things as they really are. In the presentation, I shared a picture of a typical home where everything seems to be working just fine (blue pill). But the next picture peels back the veneer and, like in the Matrix, we are able to see what is really going on.

The red pill is performance testing. Like having X-ray vision, it allows us to see how an HVAC system and a home are actually working.

When we see data on system pressures, airflows, temperatures, enthalpies, pressure imbalances between rooms, poor insulation, building and duct leakage, we begin to know the truth that all is not as it seems.

When we test combustion and check for potential carbon monoxide issues we often learn the home isn’t as safe as it seems.

HIGH-PERFORMANCE IS THE RED PILL

Those who’ve made the decision to test and measure system performance have taken the red pill. You truly cannot unsee the reality beneath the veneer.

Once you start measuring, like in the Matrix, you embark on a journey down the rabbit hole and discover the truth. Few, in good conscience go back and swallow the blue pill to just ignore it.

But unlike in the Matrix, choosing the red pill doesn’t lead to a dark and ominous, seemingly hopeless world. In fact, it’s just the opposite.

When you see HVAC systems and homes as they really are, a world of possibilities opens up to you. You have the opportunity to educate your customers and help them make better choices.

The high-performance red pill can make you unbeatable. The key is to follow a good process that involves testing, customer education, and doing the right thing — always and ethically. By taking the red pill you can truly outperform your competition!

While it might seem a bit overwhelming, if you take it in baby steps you can easily get on this path. In the months ahead we will share these steps in a number of different ways, through webinars, articles, and ultimately at next year’s Summit.

Our theme next September is, “*Navigate Your Path to High-Performance.*” Each of the sessions will be focused on different steps along the path.

Whether you are just starting out, or somewhere along the path, please know the NCI team is here to help you along the way.

This approach will help your company differentiate itself, and ethically make the profits you deserve, while helping your customers live in safer, healthier, more comfortable, and energy efficient indoor environments. **NCI**



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UPCOMING NCI TRAINING: NOVEMBER - DECEMBER 2024

PUBLIC LIVE TRAINING

Airflow Testing and Diagnostics

November 19: Florence, KY
December 3: Houston, TX
December 3: Mentor, OH

Duct System Optimization Certification Program

November 20-21: Florence, KY
December 4-5: Houston, TX
December 4-5: Mentor, OH

Combustion Performance and Carbon Monoxide Safety Training Program

November 5-7: Centennial, CO **SOLD OUT**
November 12-14: Kenilworth, NJ **SOLD OUT**
December 17-19: Somerville, MA

Residential HVAC System Performance and Air Balancing Certification Bundle

November 12-14: Somerville, MA
November 19-21: Tampa, FL
December 3-5: Centennial, CO
December 3-5: Dayton, OH
December 3-5: Hartford, CT

Residential HVAC System Performance and Air Balancing Certification Bundle (cont.)

December 10-12: Austin, TX
December 10-12: Burlington, NJ
December 10-12: Kissimmee, FL

Duct System Optimization and Residential Air Balancing Certification Program

December 3-5: Grand Rapids, MI

Commercial Air Balancing Certification Program

December 10-12: Roswell, GA

PUBLIC ONLINE LIVE TRAINING

Combustion Performance and Carbon Monoxide Safety Recertification Training Program

November 12-13

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Combustion Performance & Carbon Monoxide Safety Training Program

November 5-7: Anaheim, CA

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Residential System Performance Certification Program

November 19-20: Anaheim, CA

Commercial HVAC System Performance

December 3-4: Anaheim, CA

Test & Certify Ventilation Systems and Economizers Certification Program

December 11-12: Tulare, CA

Duct System Optimization and Residential Air Balancing Certification Program

December 17-19: Anaheim, CA



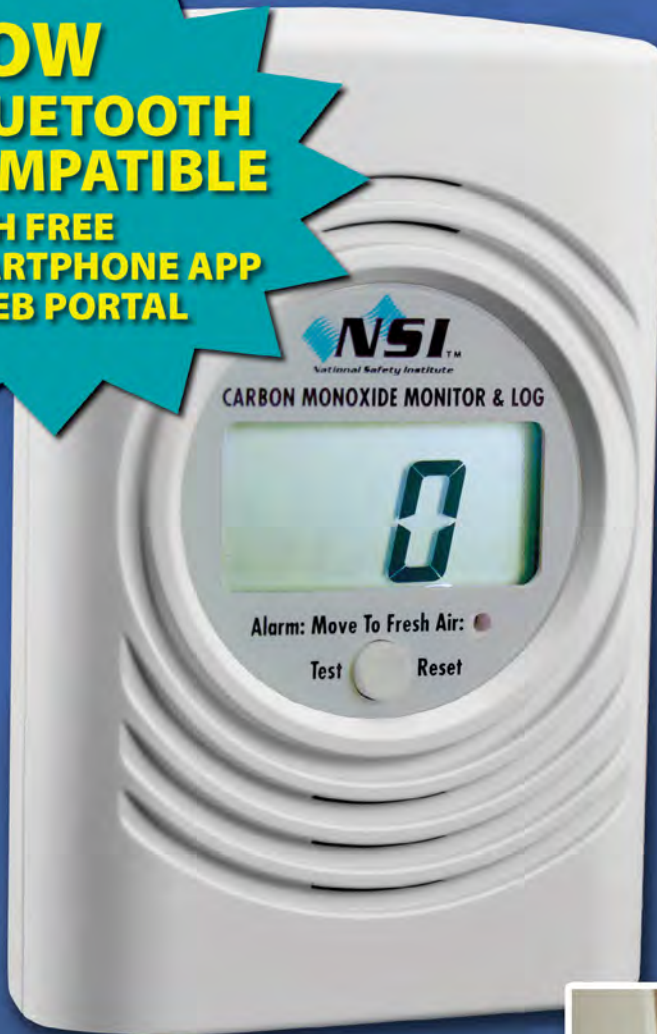
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