

# HIGH PERFORMANCE HVAC TODAY™

*If You Don't Measure, You're Just Guessing!™*

## BLAZE YOUR TRAIL to High Performance

**NCI Summit 2018 Show Issue**



Supports NCI training by providing housing



### Preferred Partner Award

**Criteria:**

- Strong participation in NCI's Training Incentiv Partner Program (TIPP)
- Seeks to constantly improve relationship and offer member benefits
- Promotes NCI training and membership to its customer base
- Supports NCI training by providing housing locations

**ALSO IN THIS ISSUE:**

Why Customers Should Participate in TAB

My Journey with ComfortMaxx Air™

Rob Falke on Measuring/Repairing Duct System Heating and Cooling Losses



# SEVEN REASONS WHY YOU SHOULD

# Go to Summit!

March 4-6 • Austin, TX



1. **Completely focused on High Performance HVAC**
2. **Six Breakout Sessions** led by contractors like yourself: These "Trailblazers" will share their successes, strategies, and how they overcame failures.
3. **NCI Idea Meetings** on Lead Generation, Sales Approach, and Product Delivery. Fellow contractors share their latest and greatest ideas. Cash prizes!
4. **Network** with your Performance Based peers.
5. **Partner Tradeshow** to help your business grow.
6. **Awards Banquet** to honor the Best of NCI Members.
7. **One-year FREE Online Coaching.** Available exclusively to NCI members who attend Summit 2018. This is a monthly post-conference implementation coaching program.

...And so much more!



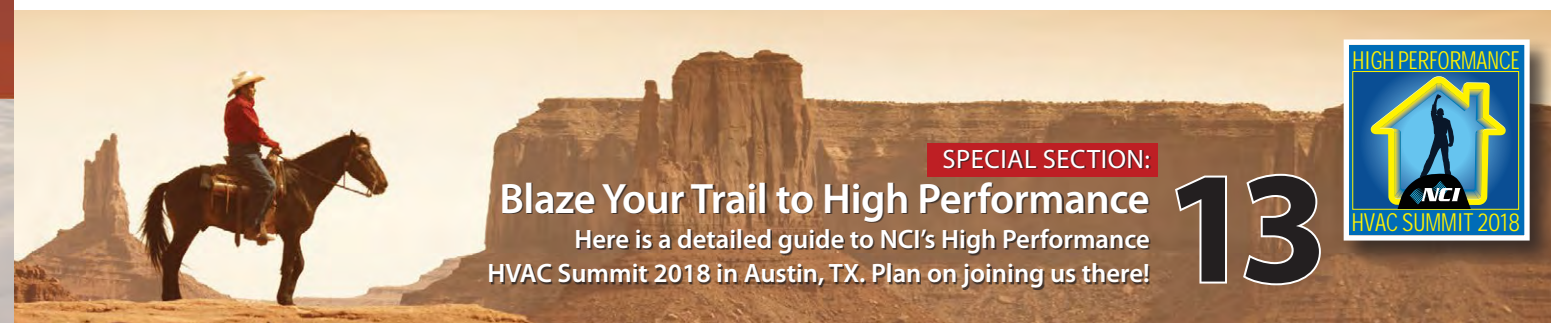
Visit [GoToSummit.com](http://GoToSummit.com) to find out more and to register. Or call NCI Customer Care at 800-633-7058

# High Performance HVAC Summit 2018



FEBRUARY 2018 VOLUME 2 NUMBER 2

# HIGH PERFORMANCE HVAC TODAY™

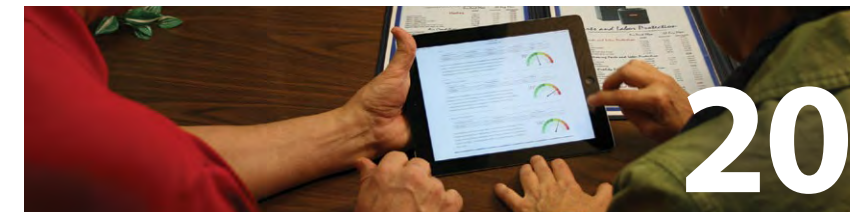


**SPECIAL SECTION:**  
Blaze Your Trail to High Performance  
Here is a detailed guide to NCI's High Performance HVAC Summit 2018 in Austin, TX. Plan on joining us there!

13



**CUSTOMER SERVICE:**  
**Why Customers Should Participate in Testing, Adjusting, and Balancing**  
Contractor Dana Walsh explains how to build customer confidence and seal relationships using this technique.



**LEAD GENERATION:**  
**My Journey with ComfortMaxx Air™**  
Nathan Copeland of Copeland and Son AC and Heating shares how his company uses this program to grow.

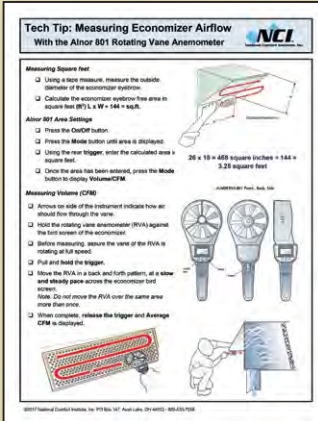


**TECHNICAL:**  
**Measure and Repair Duct System Heating and Cooling Losses**  
Rob Falke provides the rationale and procedures for measuring and not guessing when it comes to duct systems.

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## Monthly Download



This month we feature a single-page, well-illustrated Tech Tip checklist for measuring an economizer's airflow using an Alnor 801 Rotating Vane Anemometer. The checklist includes tips on how to properly choose the right settings on the the 801 device as well as six steps for correctly measuring airflow volume in

cubic feet per minute (CFM)

Go to [ncilink.com/md0218](http://ncilink.com/md0218), or use your phone with the QR Code below.

By registering for free on NCI's website, access this download and many more.



## Online University

**Featured this month** is the Register and Grille Series of the Online University's Advanced Technical training. These courses will help you to better understand how to select and measure both supply and return grilles. This series includes:

- **Supply Register and Return Grille Basics** - Covers how to properly size them, how they impact air mixing, and more.
- **Traversing Grilles and Registers** - Learn to apply the correct traverse formula and how to create a correction factor in the field.
- **How To Select Supply Registers** - Demos how to use published engineering data for accurate selection.
- **How to Select Return Grilles** - Similar to above.

Read more here: [ncilink.com/ou0218](http://ncilink.com/ou0218)



## BLOG POSTS

### HELPING THE HVAC INDUSTRY BECOME PERFORMANCE-BASED



What does Performance-Based Contracting™ and the Book, "*Blue Ocean Strategy*," have to do with each other? In Dominick Guarino's blog, he defines it and explains and how contractors can use such a strategy with performance to so differentiate themselves, that they have virtually no competition in the marketplace. Read it here: [ncilink.com/blueocean](http://ncilink.com/blueocean).

### OVERCOME CHALLENGES MEASURING AIR HANDLER FILTER PRESSURE DROP



David Richardson provides seven steps to successfully overcome these challenges. He even includes step-by-step instructions to build your own probe so you can successful complete the measurements. Read his blog here: [ncilink.com/AH-PSI-Drop](http://ncilink.com/AH-PSI-Drop)

## There's An App For That!



There are so many mobile apps geared toward HVAC contractors. The question is, which ones are worth your time? Answer: Not all of them for sure. NCI's David Richardson has found a number that make great sense for the Performance-Based Contracting™ community and we present those here.



This month's app is **ReportApp** from Bacharach, Inc. It reads combustion measurements from Bacharach's Insight Plus and InTech combustion analyzers via a QR code.

Both analyzers are available in the NCI store. The measurements can then be viewed, saved, and emailed as a PDF. The app is available in both iOS and Android formats.



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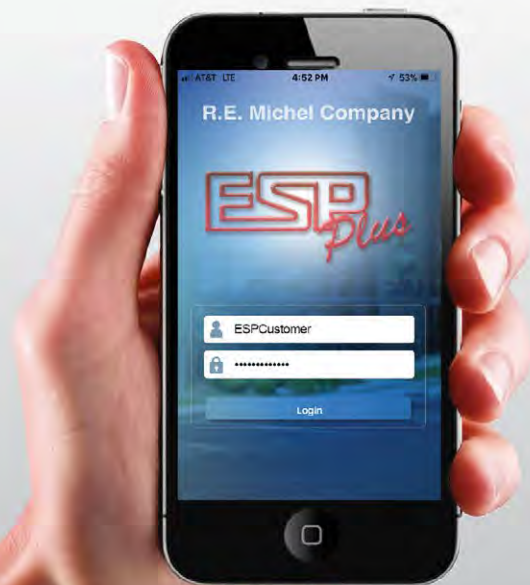
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## History in the Making: The High Performance HVAC Summit Story

**F**ifteen years ago, National Comfort Institute, Inc. (NCI) launched its very first membership event. It was called *National Comfort Team High Performance 2003*. It was held in Dallas, TX, and was in conjunction with *Contracting Business* magazine's *HVAC Comfortech 2003* show.

That was a very busy year.

It was the year that the [Human Genome Project](#) was completed. This project was where scientists from around the world finished successfully sequencing 99% of the makeup of human DNA.

It was the year that the supersonic high-end passenger jet known as the [Concorde flew its last flight](#). It was also the year we saw the birth of the U.S. Department of Homeland Security, and the year [the U.S. bombed the daylights out of Iran](#) and eventually put an end to the reign of Saddam Hussein.

From bombout to blackout, [August 2003 was when the entire Northeastern quadrant of the United States went dark](#) due to aging electrical infrastructure.

And sadly, it was the year the [U.S. space shuttle Columbia met its end](#) as it disintegrated during re-entry to the Earth's atmosphere, killing all seven astronauts onboard.

Yes, there was a lot going on.

On a much more positive note, *National Comfort Team High Performance 2003* was all about helping HVAC contractors deliver true performance to customers. Sessions focused on indoor air quality, carbon monoxide and combustion safety, as well as how to implement and maintain Performance-Based Contracting™ in an HVAC business. It also covered how to sell and market this approach.

Fifteen years ago I attended that first event as a guest; I was an editor on a trade magazine at

the time and was there to cover the event.

Fifteen years later, NCI Performance morphed into NCI Summit. The focus now is on growing the high performance HVAC segment of the entire industry. I am no longer a guest, but the editor of this magazine and director of communications for NCI.

Today the event is called NCI's High Performance HVAC Summit. Our focus is not only on implementing the culture of Performance-Based Contracting, but also on teaching you all about air upgrades, duct renovations, and more -- using the sharpest experts in high performance contracting.

The history of this event is long and storied and directly connected to the entire HVAC Industry. The message is clear: "If you don't measure, you're just guessing."

And the revolution continues with our very first magazine issue focused on Summit. In fact,



Mike Weil is editor-in-chief and director of Communications at National Comfort Institute, Inc.

**PERFORMANCE IS WHAT WE, AS AN INDUSTRY, MUST STRIVE FOR. PERFORMANCE IS WHERE COMFORT AND EFFICIENCY INTERSECT.**

our entire Show guide can be found beginning on page 13.

NCI CEO Dominick Guarino wrote in *Contracting Business* magazine in 2013, "The lessons we've learned from decades of conforming to new energy efficiency and indoor air quality standards are that performance is what we must strive for. Performance is where comfort and efficiency intersect."

What a beautiful way to summarize what this industry and this 15th Annual Summit event are all about.

So get ready, [get registered](#), and join us on blazing a trail to high performance.

# Summit 2018 Announces Two Platinum Sponsors

It is just over 30 days away: National Comfort Institute, Inc.'s (NCI) High Performance Summit descends upon Austin, TX, from March 4-6, 2018. Summit is THE gathering place for contractors who specialize in High Performance HVAC.

NCI is pleased to announce two Platinum sponsors for the event -- **The Electric & Gas Industries Association (EGIA)** and **Goodman Manufacturing**. Both will be co-sponsoring Summit's *Welcome Reception* on Sunday, March 4th.



Air Conditioning & Heating

This will be EGIA's first time participating with NCI as part of Summit, but not their first time working with HVAC contractors. The 85-year-old non-profit organization operates in the energy efficiency and renewable energy fields and is heavily involved in helping

contractors offer financing to their consumer customers.

Goodman Manufacturing returns once again as a platinum sponsor. This year, Goodman is also providing **FREE post-conference sales training**. It's a two-day

class that will teach a systematic and interactive approach to selling premium comfort systems using the latest techniques in solution-based sales.

The class is only available to the first 50 Summit attendees

who sign up. Visit [GoToSummit.com/SalesClass](http://GoToSummit.com/SalesClass) for details.

There is still time to sign up and attend the HVAC Industry's only Performance-Based Contracting Event. Just visit [GoToSummit.com](http://GoToSummit.com) to find out more.

## IN OTHER NEWS ... REFRIGERANT RULES ARE CHANGING

More precisely, they already have. According to the EPA, as of January 1, 2018, a number of changes have gone into affect with regard to Section 698 of the Clean Air Act.

These changes have a direct impact on the HVAC contracting industry including:

- **Required Certification:** Technicians must be Section 608 certified to buy hydrofluorocarbon (HFC) refrigerant.

- **More Required Certification:** Technicians must be Section 608 certified to open HFC appliances. However, the EPA is NOT requiring recertification of current technicians, at least for now.

- **Distributor Rules that Impact Technicians:** Refrigerant distributors may only sell HFC refrigerants to certified technicians and must maintain records for those sales.

- **Certification Group Rules Impacting Technicians:** As of Jan. 1, 2018, certifying organizations must post a list of new technicians certified after Jan. 1, 2017.

- **Refrigerant Recovery Rule Changes:** Technicians must use certified recovery and/or recycling equipment when opening an HFC appliance.

- **Refrigerant Evacuation Changes:** Technicians must now evacuate to the specified levels of vacuum when opening HFC appliances.

For more details on these updates to the Section 608 Refrigerant Management Program, go to [ncilink.com/608Rules](http://ncilink.com/608Rules).

## Photo of the Month Winner Receives Prize



Standing beside one of his service vehicles is Scott Copeland of Affordable Heating and Cooling, Phenix City, Nevada. He is holding his \$50 gift card prize for his [December 2017 winning entry](#) in the **High Performance HVAC Today** Photo of the Month contest.

You can win too. Just send your photos and descriptions to the following link: [ncilink.com/potm](http://ncilink.com/potm), fill out the form, and you are entered. Winners are voted on by visitors to the site. We look forward to seeing your entries.

Congratulations to Scott Copeland!

## ALNOR HM685 - HYDRONIC BALANCING KIT

This instrument is for balancing hydronic heating and cooling systems. With it you can accurately and digitally measure high and low-side pressure simultaneously without needing to change hose connections or the instrument valve.

The HM685 is intended for use by commercial balancers. It has a differential pressure range of  $\pm 300$  psi and a gauge pressure from -20 to 300 psi.

You can use this instrument to calculate brake power, heat flow, Cv factors



and impeller sizing.

It can store up to 1,000 data points in its memory, which can be downloaded to a personal computer. It includes USB software and a USB interface cable to manage recorded data on your PC.

For more information or to order, go to [ncilink.com/0218Alnor](http://ncilink.com/0218Alnor), or call 800-633-7058.

## NCI MAGNEHELIC™ STATIC PRESSURE KIT SP3

Made for the National Comfort Institute by Dwyer, this gauge is one of the industry standards for measuring fan and blower pressures, filter resistance, and pressure drop across systems. Accurate manometers are one of the core instruments for a good diagnostic technician and this one has

$\pm 2\%$  accuracy. The entire kit includes the gauge, a static pressure tip, rubber hose, and a 3/8-in. bullet-point drill bit and sheath. It comes with a supply of 100 3/8-in. test port plugs, a carrying case, as well as an NCI guidebook on measuring static pressure.

It has a large easy-to-read 4-in. dial and an included stability stand.

For more information or to order, go to [ncilink.com/0218Dwyer](http://ncilink.com/0218Dwyer), or call 800-633-7058.



## Upcoming NCI Training & Event Schedule

### Residential HVAC System Performance & Air Balancing Certification Program

Feb 27-Mar 1: Cincinnati, OH  
 Mar 20-22: Wash/Landover  
 Mar 20-22: Mobile, AL  
 Apr 3-5: Lansing, MI  
 Apr 10-12: Dallas, TX  
 Apr 10-12: Los Alamitos, CA\*

### Combustion Performance & Carbon Monoxide Safety Certification

Feb 13-15: St. Louis/Bridgeton, MO  
 Feb 13-15: Atlanta, GA  
 Feb 27-Mar 1: Richmond, VA  
 Feb 27-Mar 1: Philadelphia, PA  
 March 7: Austin, TX (Post-Conference Recertification)  
 Apr 3-5: Omaha, NE  
 Apr 10-12: Chicago, IL

### Introduction to Hydronic Testing, Adjusting, & Balancing

Feb 13-14: Cleveland, OH  
 Apr 10-11: Cleveland, OH

### Commercial Air Balancing Certification Program

Mar 13-15: Kansas City, KS  
 Mar 27-29: South Plainfield, NJ

### Duct System Optimization & Air Balancing Certification Program

Feb 20-22: New Orleans, LA  
 Feb 20-22: San Antonio, TX  
 March 7-8: Austin, TX (Post-Conference Recertification)  
 Mar 13-15: Des Moines, IA  
 Mar 13-15: Boston, MA  
 Mar 27-29: Sacramento, CA  
 Mar 27-29: Columbus, OH  
 Mar 27-29: Los Alamitos, CA\*  
 Apr 3-5: Baltimore, MD  
 Apr 10-12: Rochester, NY

### Optimize Economizer Performance with Certification

Feb 22: Los Alamitos, CA\*  
 Mar 15: Tulare, CA\*

### Commercial System Performance with Certification

Feb 20-21: Los Alamitos, CA\*  
 Mar 13-14: Tulare, CA\*

### NBC Commercial Balancing with Certification

Mar 19-23: Cleveland, OH  
 Mar 19-23: Los Alamitos, CA\*

\*Subsidized NCI training offered by Southern California Edison.

# Schneller Plumbing and HVAC

## -- A Legacy of Performance

The story of Schneller Plumbing, Heating, and Air Conditioning is really the story of two families, two companies, and fate that brought them together.

The first family are the Schnellers – Rudy and his wife Jean – who started their family plumbing business in Cincinnati, OH in 1928.

That was a big year, historically. It was the year that Alexander Flemming discovered penicillin and Amelia Earhart became the first woman to fly solo across the Atlantic. It was the year Walt Disney introduced his most famous character, Micky Mouse, in an animated short film called *Steam Boat Willie*.

The Schnellers launched their company just one year before Wall Street collapsed setting off the Great Depression. Those early struggles, and a need to do things right, lead Schneller to build his company based on a strong customer service reputation.

The second family are the Knochelmanns. John Knochelmann started his plumbing and HVAC business in Cincinnati in 1968. He also built it based

on a strong reputation for customer service. He already established a do-it-right-the-first-time work ethic.

And both companies grew.



### CHANGES WERE A-COMIN'

The HVAC industry itself underwent significant changes in those early years, especially with the advent of affordable residential air conditioning, changing technologies, and increasing comfort demand.

Kris Knochelmann, who worked in his father's company since high school, says he learned about the importance of integrity and providing quality workmanship during those years. He worked in the office as a dispatcher, service manager, and finally, as general manager.

John Knochelmann's sons and son-in-law partnered up and bought

the company in 1991.

Then, in the mid-1990s the industry was challenged when Wall Street took an interest and began investing in HVAC consolidation companies. They were buying HVAC companies all over the country for high multiples. Many contractors took advantage of such offerings as part of their exit strategies.

Kris Knochelmann says, "In 1997, I was part of our family group that sold the old business to a corporate chain that became part of Service Experts. I worked to grow that business and provide excellent customer service to an expanding customer base."

### PASSING THE SCHNELLER BRAND TO KNOCHELMANN

After nearly 10 years with Service Experts, Knochelmann explains that things began to change, and in early 2011 his position was eliminated.

"I was asked to take a job that required less interaction with customers and co-workers. With 48 hours to decide, it was time for me to move on. I de-

ecided to leave the only organization I had ever worked for." It was that change that brought the Knochelmann and Schneller families together.

### STARTING OVER

Just prior to this time of transition, Knochelmann had been looking to buy an HVAC company and merge it with the Service Expert business. Through a friend at church, he found out that Schneller Plumbing and Heating was looking for a buyer. So, in April 2011, he left the company his father started, and bought Schneller.

Since then, he says almost 20 staff members from the old company have joined him, as well as many of his family members.

"They came because we all shared the same belief: that customers should always come first and be treated with integrity. I am proud to carry on the tradition of my father and the Schneller family.

Knochelmann has owned Schneller now for nearly seven years. This April, the company will celebrate its 90th year in business. According to Kris Knochelmann, they focus on residential and light commercial HVAC system repair and replacement.

Today the company enjoys gross sales around \$8.5 million and employs up to 52 co-workers – 12 of whom work in the office and sales department. The rest are out in the field. They have 34 service and installation vehicles serving their HVAC and plumbing customers from three locations – two in Cincinnati and one in Covington, KY.

Knochelmann adds that of the \$8.5 million in gross sales, 15% comes from plumbing and the rest is HVAC.

### CONNECTING WITH PERFORMANCE-BASED CONTRACTING™

Kris and his team have been part of the high-performance HVAC movement since before the Schneller acquisition. He and many of his current technicians began training with National Comfort Institute (NCI) in the late 1990s. Once he bought Schneller, Kris officially joined NCI, and has remained a member in good standing ever since.

"My family and the Schnellers have always focused on doing things right for our customers," he explains. "That requires time and investment in training. I have always been a strong proponent of training.

"From the first day of training with NCI, the idea of comparing static pressure to blood pressure caught my attention. It really is a great way to help customers understand what is happening with their systems and what you need to do to correct it," Knochelmann says.

He adds that around 80% of the Schneller field crew has gone through NCI training and they work hard to make sure everyone stays up-to-date with their certifications.

"Having said that, I feel we need to do a better job as a company keeping up with overall continuing education," Knochelmann says.

### NO SUCH THING AS TOO MUCH EDUCATION

Kris Knochelmann will tell you that education goes well beyond just the technical side of the business. There is always more to learn when it comes to managing the general business, employee interactions with customers, marketing, sales and more. Because



Kris and Lisa Knochelmann

of that, Schneller has memberships in a number of HVAC Industry trade associations, including Air Conditioning Contractors of America, Plumbing-Heating-Cooling-Contractors Association, the Kentucky Association of Master Contractors, and Nexstar.

In addition, Knochelmann says reading is also so important. He reads most of the trade magazines that serve the HVAC industry and encourages people on his team, especially his managers, to do the same.

"I think there is just so much information available. We need to force ourselves to get off Facebook and other social media, and take an opportunity to read more and learn. There really is no such thing as too much education."

### IMPLEMENTATION: WHERE THE RUBBER MEETS THE ROAD

So many industry experts will tell you that education is vital, but is all for naught if you don't figure out how to implement what you learn into your company culture, and processes. Kris Knochelmann agrees. He says when it comes to standing out in your marketplace, you need to solve customer problems in ways that make you stand out.

For Schneller, it comes down to executing Performance-Based Contracting™ through air upgrades and system/duct renovations. Easy? No way, says Knochelmann.

"It is so important to talk to your



customers in a way so they understand what the problem with their system is and what we plan to do to correct it. Using the NCI approach of comparing static pressure to blood pressure is as common and basic as

you can get. If you don't put things in those terms, 95% of your potential customers just won't get it. If you don't educate your customers, you only make it harder on yourself

AND your customers. There is no question about that," he says.

Besides customer education, Knochelmann says it is important that any new field service and installation personnel understand that their job is not just to sell the highest energy efficient furnace. It is ALL about resolving long-term comfort and efficiency operation. He believes this to be an important differentiator because it is where the rubber meets the road.

#### MEASURING SUCCESS

So how successful is Schneller Plumbing, Heating, and Air when it comes to selling air upgrades and duct renovations? Knochelmann says they have successes daily. Success is when his technicians are comfortable testing and diagnosing airflow issues and describing options to customers. Success is when the customer understands those options and feels confident they are making the best purchase decision.

"I tell my guys that I'm not worried about them selling giant service tickets. Sure – if they do that is wonderful.

But if we can teach the customer and show them how to take the first step -- whether it involves adding return air drops, performing a duct analysis, whatever – then we see that as success. When they understand that the work

we do does take more time than just changing out a furnace or air conditioner and that changes the financial model, and they still want to move forward – that is success.

"And because it is more expensive,

you must know how to price it so you make money on it. By doing that correctly, you can hit the success button. If you don't, you'll do a lot of work for nothing," he adds.

Kris Knochelmann says he also measures success by knowing his team is doing the right thing.

"Once you understand air flow as taught by people with integrity, you can't go back to the old way of doing things."

#### OTHER DIFFERENTIATORS THAT MAKE SCHNELLER STAND OUT

In the December 2017 issue of *High Performance HVAC Today* magazine, Contractor Tom Johnson wrote an article about becoming your local Carbon Monoxide (CO) evangelist ([ncilink.com/CO-Expert](http://ncilink.com/CO-Expert)). In it he explains how important it is to be safe and create safe conditions for your personnel and their homeowner clients. Though he doesn't put it into those terms, Kris Knochelmann has his field service personnel


undergo combustion performance and CO safety training.

"Right now, no one walks through a customer's door without a combustion analyzer. No one walks in without taking CO monitors from NCI. These are just two unique things that people in our market don't see from other contractors. We strive to be very consistent in all things we do."

Today, the Performance-Based culture is stronger than ever in Schneller. In fact, their maintenance agreement, which they call their PMA (Performance Maintenance Agreement) goes beyond typical HVAC service agreements. Knochelmann explains that the PMA is all about performance. It is one way the company tells customers that Schneller Plumbing and Heating is all about making systems perform the way they were designed to perform.

"Performance means different things to different people," he continues. "But performance, as taught by NCI, is now in Schneller's culture. It is not about changing out boxes. It is our foundation to differentiate when we recruit, train, and send new co-workers out to customers.

"This performance culture is about setting yourself up for more profitability and doing it the right way. And if you put all the pieces together the way NCI has been teaching us to do, you can package your company around that model and be successful for your customers, your team, and your family. That is a great legacy. It sets you apart from everybody else."

He concludes saying, "We must continue taking the knowledge and tools and do good things with them. The Performance way has changed how I look at the industry." 



Kris poses with his father, John Knochelmann.



# Special Coverage: Summit 2018

March 4-6, 2018 • Austin, TX



*If You Don't Measure, You're Just Guessing!™*

# SUMMIT 2018

## Blaze Your Trail to High Performance



**B**ack in 1846, the first major wagon train to the northwestern parts of the United States left Elm Grove, Missouri, on the Oregon Trail. The train included some 1,000 people traveling in more than 100 wagons. These pioneers were blazing the trail to new lands, new opportunities, and new lives.

Next month the **15th Annual High Performance Summit 2018** blazes a trail to Austin, TX where Performance-Based Contractors™ will gather to network, learn, and discover new opportunities that will change their approach to HVAC contracting.

Headquartered in the Doubletree Suites by Hilton, the event is open to the entire industry, including the thousands of HVAC companies that have been trained and certified by National Comfort Institute, Inc. (NCI).

It kicks off on Sunday, March 4th at 4 PM with a **Guest Orientation/New Member meeting** to acclimate first timers to the program and events. This is a great way to set the stage for a great Summit experience.

### WELCOME TO SUMMIT 2018

Speaking of setting the stage, the annual **Welcome Reception** follows at 6 PM. This reception is where contractor attendees, NCI staffers, speakers, and more mingle and reconnect. There is food, fun, and camaraderie for all.

The Welcome Reception is sponsored and co-hosted by long-time NCI supporter **Goodman Air Conditioning and Heating**. Goodman has been hosting this reception almost from the very beginning of Summit and is a strong supporter of the tenets of Performance-Based Contracting.

Co-hosting with them is our newest partner, **EGIA (Electric and Gas Industries Association)**.

This group is an 85-year-old non-profit organization dedicated to the advancement of energy efficiency and renewable energy solutions. They are now part of NCI Member Rewards as a **Training**

**Incentive Program Partner (TIPP)**, offering NCI members consumer financing packages.

### OPENING GENERAL SESSION

On Monday morning, March 5th, Summit begins with everyone gathering and receiving an overview of NCI's latest products and services. The opening general session includes NCI's accomplishments in 2017 as well as the organization's 2018 goals for delivering new and exciting services to both its membership and the entire HVAC Industry.

The format of this year's conference allows every attendee to attend every event. The theme, "Blaze Your Trail to High Performance," underlies every aspect of the educational program. For example, six breakout sessions conducted by your fellow contractors are all designed to address key parts of implementing Performance-Based Contracting.

Also, Summit 2018 provides you a **map of the performance trail with 20 specific steps a contractor can follow toward having delivered performance** as part of their company culture. By the time you leave this year's Summit, you will understand what must be done – no matter if you are a first timer or already are a Performance-Based Contractor.

Just in case you are worried you might not remember everything, we've got you covered. All NCI members who attend will be able to participate in a **year-long group coaching program** at no additional cost.

The coaching program addresses all 20 steps throughout the year. It will be available in all four U.S. mainland time zones to allow maximum flexibility in your ability to participate.

### LET THE EDUCATION BEGIN ...

After the opening session are the first of six **breakout sessions**. Conference attendees will be divided into four groups and those groups will stay together for all the remaining workshops. No more deciding which sessions to go to

and which ones to miss.

Education is further enhanced with the **Annual Idea Meeting**, which takes place after the third workshop session at 2:30 PM on Monday afternoon. This event is open to ALL contractor attendees. It does have a \$20 cash entrance fee, so don't forget to bring your wallets.

The Idea Session is where contractors come to share ideas and best practices on how to get the most out of Performance-Based Contracting. It is divided into three mini-events – each covering one of the three main objectives of Performance-Based Contracting: Lead Generation, Sales, and Delivering the End Product.

Contractors present their best ideas on company practices, marketing, departmental processes, etc., in each of these categories. They present their ideas, then the group votes on which idea is the best. Winners in each of the three categories receive a cash prize (which is why there is a \$20 entrance fee).

### MORE WORK, MORE FOOD, AND MORE FUN

Monday comes to a close with the evening **Trade Show Reception**. At 5 PM attendees are treated to a cocktail reception tradeshow where they can spend a casual evening with NCI's industry partners. This is the chance to see the newest technology, services, and business tools.

The second day of Summit begins with breakfast and is followed immediately with **more breakout sessions**. On Tuesday, March 6th breakout session four and five run from 8:30 to 11:15 AM. Then at 11:15 AM luncheon will be served during the Member Rewards vendor exhibit. This gives attendees a chance to visit with those vendor partners they missed the night before as well as more time to network with fellow contractors.

The final breakout session begins at 1:15 PM. At 2:45 PM Summit attendees will gather for the **closing general session**. This includes a prize drawing where contractors can receive prizes, worth thousands of dollars from NCI's vendor partners. Plus, the winners of Monday's Idea Meeting will receive their cash prizes.

Then at 3:15 PM get ready for a powerhouse **panel discussion** where industry leaders will interact with the audience as they address the future of measured performance in the HVAC industry. This will be a must-see event.

And finally, one of the highlights of Summit are the **closing remarks** delivered by NCI President Rob Falke. Falke will share his perspectives on how performance is reshaping the industry in general and the HVAC contractor in particular.

Summit 2018 then wraps up with the **15th Annual Awards Banquet** where many of your peers will be recognized for their achievements in

2017. This sit-down dinner and ceremony is another highlight of Summit. And who knows, you may be one of the award recipients!

### POST SUMMIT BONUS ROUND

But wait ... there's still more. Following the core conference, on Wednesday and Thursday, March 7th and 8th, attendees can participate in **two additional days of classroom training** on topics ranging from advanced combustion and CO diagnostics to duct system optimization, and high efficiency sales.

In fact, the sales class is being offered to all NCI Summit attendees for free by Goodman Air Conditioning and Heating. Normally this two-day class costs \$375. It does require pre-registration because there is a limit of 50 people who can participate. [Just click this link to learn more.](#)

And finally, when the High Performance Summit 2018 puts out the last campfires at the trail's end, it is NOT the end. Not if you are a fan of fine music. You see, immediately following Summit, the world-famous **South by Southwest Music Festival** begins (March 12-18).

So be sure to come to Austin for Summit and Blaze Your Trail to High Performance. Then stay for the music and fun. If you haven't registered, just head over to [GoToSummit.com](#) and do so.

We look forward to seeing you there.





## BLAZE YOUR TRAIL to High Performance

For the past 12 years NCI's Summit has been the gathering place for Performance-Based Contractors™. It's the only event of its kind completely focused on High Performance HVAC.



This conference is open to the entire HVAC industry, including the thousands of HVAC companies who have been trained and certified by NCI. Summit is an open, welcoming gathering of like-minded HVAC contractors who are open and willing to share with their fellow performance-based professionals.

That's why this year, our speakers are all contractors like yourself who set out on a mission to sell and deliver a higher level of performance to their customers. These trailblazers will share with you their successes, strategies, and how they overcame their failures as they continue on this journey.

This year's theme is more than a catch-phrase. It truly embodies the spirit and goals of this one-of-a-kind event. Our featured speakers will each focus on a different aspect of selling and delivering high performance HVAC systems with a special focus on Air Upgrades - the latest "product" NCI has helped its members and students deliver to end customers. Air Upgrades are designed to surgically address and solve many indoor comfort, air quality, safety, and energy efficiency issues in homes and buildings.

### An Innovative Format For Maximum Learning

Last year we tried a new format where Summit participants were able to take in every single session without missing anything. The feedback on this approach was so good we decided to do it again this year. So you don't have to worry about missing anything. In fact when you register multiple team members from your company, you can attend each session as a group, or split up for maximum exposure to other performance-based contractors - it's your choice!

**Blaze your trail to Austin this March, and take your HVAC business to the next level!**

### SPECIAL EVENTS



**Member Rewards Reception and Tradeshow:** Our Member Rewards Partners help make your membership and this conference possible. Show your appreciation by attending the trade show events. Who knows? You might find that next great product or idea!



**Idea Meeting:** All attendees are invited to this 3-part event where each participant can propose one or more ideas in the areas of lead generation, sales, and product delivery. Don't forget to bring your ideas and \$20 entrance fee. The best ideas win cash prizes!



**Awards Banquet:** This long-standing tradition is one of the highlights of every Summit. Join us in honoring the best of the best NCI members. You never know - you may be one of them!



# BREAKOUT SESSIONS

Led by your fellow HVAC Contractors and Industry Pioneers

### Where Indoor Air Quality Meets System Performance



**John Ellis, Presenter**

IAQ (Indoor Air Quality) expert, John Ellis of So Cal Air Dynamics, will share how you can deliver high-integrity HVAC systems, combined with IAQ solutions, to address your customer's unique needs. Learn what all the "buzz words" really mean and how to explain them to customers in an understandable way. Plus, John will discuss key performance indicators that must be monitored as well as how to tie HVAC system performance and IAQ together to grow your business.

### Productive and Profitable Duct Renovations



**Vince DiFilippo, Presenter**

How do you discover duct renovation opportunities? In this session, you'll learn how DiFilippo's Service Co. not only finds opportunities, but Vince shares "the DiFilippo way" for performing them productively and profitably. He will walk you through multiple case studies and guide you through where to start, how to identify what you may need, and why your perception about how to solve airflow issues might need to change.

### Our Leap From Tradesman to Craftsman



**Kevin Walsh, Presenter**

During this workshop, Kevin Walsh, of Schaafsma Heating and Cooling Co., will discuss the many challenges he and his team faced when implementing Performance-Based Contracting™ into their 100+-year-old business. Using principles outlined in Jim Collins' book, "Good to Great," Kevin will discuss how he and his key leaders successfully rolled out this new business approach and overcame challenges at all levels of the company - including the very top. This is done by continuous training, measuring, and reinforcing success daily through positive feedback and sharing success stories to keep the entire team motivated. These actions assure everyone in the company sells themselves on the benefits of performance-based craftsmanship.

### ComfortMaxx Air™: Put It To Work!



**Nathan Copeland, Presenter**

Learn what it takes to get started putting ComfortMaxx Air™ to work in your company. Nathan Copeland will share how Copeland & Son AC & Heating Service uses it to help customers understand how their HVAC system is doing. He will also share how he uses ComfortMaxx Air visual reports to take static pressure testing to the next level and how these reports turn his customers into airflow detectives.

### Become Your Local Carbon Monoxide Evangelist



**Tom Johnson, Presenter**

Tom Johnson will walk you through the steps that TM Johnson Brothers used to become the "Go-to-Guy" for resolving carbon monoxide (CO) issues in his marketplace. From him you'll learn how to establish your identity, what barriers to overcome, and how to sustain the CO culture in your company. In addition, he will highlight how to develop an action plan covering what you need to know, what your team needs to do, and how to make yourself better known in your community.

### You Too Can Sell High Performance HVAC - If You Just Do It!



**Eric Johnson, Presenter**

In this session, \$2-million-per-year comfort advisor, Eric Johnson of AC by Jay, will challenge you to check your preconceived notions at the door so you can learn a more thorough way to profitably resolve customer safety, health, comfort, and energy efficiency concerns. He will discuss both the importance of addressing the entire HVAC system and how to overcome your fears and "just do it" when it comes to offering, selling, and delivering high performance HVAC systems. This seminar will help get your high-performance sales machine properly firing on all cylinders.

### POST-CONFERENCE TRAINING:

**Advanced Combustion/CO Diagnostics Recertification - March 7** (Qualifies for Combustion/CO recertification)

**Duct System Optimization - March 7-8** (Qualifies for Air Balancing or System Performance recertification)

**BONUS: FREE Post-Conference Training - March 7-8**

Summit participants can now attend this two-day **High Efficiency Retail Sales class** - a \$375 value - at no extra cost! This class is limited to the first 50 registrations.

Participants will learn a systematic and interactive approach to selling premium comfort systems using the latest techniques in solution-based sales.

Incorporating cutting-edge sales technology, this workshop will help put your company head and shoulders above your competition and create happier, more satisfied and loyal customers.

Leave energized, motivated and committed to making immediate behavior changes that result in increased close rates, higher overall tickets, and more high-efficiency equipment sales.

Sponsored by: **Goodman**



GoToSummit.com/SalesClass



## Reserve Your Seat Today!

Visit [GoToSummit.com](http://GoToSummit.com) to find out more and to register, or call NCI Customer Care at 800-633-7058

## Schedule of Events

### SUNDAY, MARCH 4

- 4:00 pm - 5:00 pm Guest Orientation/New Member Meeting
- 6:00 pm - 8:00 pm **Welcome Reception Party**

### MONDAY, MARCH 5

- 7:30 am - 8:00 am Breakfast
- 8:00 am - 8:45 am **Opening Session** with NCI CEO, Dominick Guarino
- 9:00 am - 10:15 am Breakout Session 1 - Workshops
- 10:30 am - 11:45 am Breakout Session 2 - Workshops
- 11:45 am - 1:00 pm Luncheon
- 1:00 pm - 2:15 pm Breakout Session 3 - Workshops
- 2:30 pm - 4:30 pm **Idea Meetings:** Lead Generation, Sales, Product Delivery
- 5:00 pm - 7:00 pm **Trade Show Reception** with NCI Member Rewards Partners

### TUESDAY, MARCH 6

- 7:30 am - 8:30 am Breakfast
- 8:30 am - 9:45 am Breakout Session 4 - Workshops
- 10:00 am - 11:15 am Breakout Session 5 - Workshops
- 11:15 am - 1:15 pm **Member Rewards Vendor Exhibits** and Luncheon
- 1:15 pm - 2:30 pm Breakout Session 6 - Workshops
- 2:45 pm - 3:15 pm **General Session:** Idea Session Winners and Prize Drawings
- 3:15 pm - 4:45 pm **Panel Discussion:** Where the Rubber Meets the Road
- 4:45 pm - 5:00 pm **Closing Remarks** from NCI President, Rob Falke
- 6:00 pm - 7:00 pm **Member Appreciation Reception** - Drinks
- 7:00 pm - 9:00 pm **Awards Banquet and Presentation Ceremony**

### WEDNESDAY, MARCH 7: Post-Conference Training

- 8:00 am - 4:00 pm Advanced Combustion/CO Diagnostics Recertification
- 8:00 am - 4:00 pm Duct System Optimization - Day 1
- 8:00 am - 4:00 pm High Efficiency Retail Sales - Day 1

### THURSDAY, MARCH 8: Post-Conference Training

- 8:00 am - 4:00 pm Duct System Optimization - Day 2
- 8:00 am - 4:00 pm High Efficiency Retail Sales - Day 2

### Stay for South by Southwest (SXSW)

This year our Summit coincides with an incredible music and film festival in Austin, Texas called South by Southwest, which begins as our Post-Summit training wraps up on March 9. It will be a great opportunity to come for the Summit and stay for the music!



Stay Where All the Action is!



### DoubleTree Suites by Hilton Hotel Austin

The hotel is ideally located at the intersection of IH-35 North and Highway 290 East, between the downtown business district and the Austin Arboretum. The hotel is just 20 minutes from Austin Bergstrom International Airport, a short drive from downtown Austin and just minutes from the best shopping, dining and entertainment Austin has to offer.

Reserve your room now to get the best rate. Mention group code **NCI** to receive our special group rate of \$169/night. **1-512-454-3737**

### 3 Ways to Register for Summit!



1. Online at: [ncilink.com/18reg](http://ncilink.com/18reg)
2. Fax: Fill out and fax the registration form to 440.949.1851
3. Call: 800.633.7058

## Introducing NCI's First High Performance Mobile App:

**FREE!**

**AirMaxx™**  
a *ComfortMaxx* app

**LITE**

NCI's new AirMaxx Lite™ app is available for both Android and iOS phones!

- Features easy-to-use data entry and easy-to-display reports.

- Download this free app onto your phone or tablet, and immediately start using it to display an airflow 'grade' for your customers.

### Three Simple Steps:

1. Choose Heating or Cooling mode.
2. Collect and input some basic nameplate information.
3. Measure two static pressures and input your readings.

That's it! The results are instantly shown in graphs and wording even your customers can understand.

**Bonus: AirMaxx Lite includes links to free videos, tools and articles to help you perform static pressure measurements and diagnose airflow issues today.**

Get started on the path to High-Performance HVAC™ today by downloading the app for FREE!



Find AirMaxx Lite in your phone's App Store or Google Play, or scan the QR code below.



Apple App Store  
[ncilink.com/AML1A](http://ncilink.com/AML1A)



Google Play  
[ncilink.com/AML1D](http://ncilink.com/AML1D)

### NCI Member or ComfortMaxx™ Subscriber?

**Access to the full version of the app is INCLUDED for you.**

Search for "AirMaxx" on your phone's app store. Once installed, follow the instructions on how to get your unique access key to unlock the app.

# My Journey with ComfortMaxx Air™

A few years back, we learned about a cloud-based visual report that National Comfort Institute, Inc. (NCI) created to simplify how we explain the HVAC system testing we perform. This report is called ComfortMaxx Air. At Copeland and Son, we've tested systems and performed duct renovations for more than 20 years, but knew there was something more we could add. We thought ComfortMaxx Air could be the key to get customers more interested in the products and services we offer.

After the NCI Summit meeting in Arizona last year, I learned so much more about the process. I was stoked for the next thing that would give us the edge we need to continue our Performance-Based Contracting™ mission. Let me

share with you some of the lessons learned along the way.

## IMPROVED COMMUNICATION

I saw right away how ComfortMaxx Air allowed us to take field measurements and simplify their meaning using our iPads. This cloud-based visual report offers customers new information about their systems that they can easily understand – something I often struggled with explaining. It helps us better communicate defects and problems found in customers' homes through testing.

Like all new things, there is a small learning curve to using ComfortMaxx Air. The first couple of tests require you to really pay attention to what you're doing. We found that it was important to focus on the system type before selecting it in the ComfortMaxx program. Plus, you must be sure to enter the correct values in the right fields.

After conducting our third test using ComfortMaxx Air, the process really came together. For us, it starts at our office. Our office personnel do the front-end work by filling out the customers' "informational" data in ComfortMaxx Air. Our technicians fill out the technical details while they are measuring the systems in the field. This didn't happen overnight. It takes a commitment to get here. There is training involved for both ComfortMaxx and the devices used to enter data. The results are worth the effort when you see the customer's reaction.

Being able to show them before and after results is an awesome feeling. Now we communicate with customers using visual reports instead of a bunch of numbers that mean nothing to them. The reports make it simple – we shoot for 100%. If we exceed 100% on the deficiencies, we enter the "Danger Zone" by Kenny Loggins (think of "Top Gun"). Once customers see the results, they understand them much faster than in the past.



## IMPLEMENT COMFORTMAXX AIR DURING SLOW TIMES

So, once we overcame the ComfortMaxx Air learning curve, we had to decide where and when to start using it. Being concerned that jumping in with both feet would be overwhelming for everyone, we decided to start implementing ComfortMaxx Air's use during our slower periods. This gave us time to adapt and really learn it.

We began using it on every job during slow periods. We started with maintenance calls and progressed to using it on demand service calls. As we continued testing, we quoted more and more duct renovations. Using the reports helped sell these jobs and the slow periods started getting very busy.

Some jobs were simple register and grille upgrades, while others involved detailed duct system upgrades. The important part is we turned measurements into sales once customers used the report to understand our pressure and airflow readings. We also started using the reports as part of our test-out process. With a report showing the improvements made, our custom-

ers are assured they made the right purchase choice.

## OUR RESULTS

Using ComfortMaxx Air led to amazing results. To make sure we remain busy, we plan to continue adding inventory through testing. One example of how quickly we began to turn things around occurred right after the NCI Summit in Arizona last year.


The first job was for a customer who had worked in the HVAC industry when he was younger. He was amazed at our results. I called NCI trainer John Puryear and consulted with him about ductwork since it was difficult job. With his help, we were able to provide a solution that corrected the customer's return duct system issues.

Several jobs after that we started testing systems previous duct renovation work done within the past five years, according to NCI procedures. We wanted to see if we designed and installed them properly. I'm happy to say that after all these years, we still managed to nail the post testing.

As Copeland and Son continues

testing and capitalizing on the average duct systems in our area, we find ourselves tackling more return duct issues than anything. Typically, we modify existing return ducts and add additional return ducts and grilles, along with IQ Air filtration. These return issues are rampant in our area and continue being created by contractors using the old rules of thumb.

I truly believe anyone who wants to improve their diagnostics, lead generation, and sales should seriously consider integrating ComfortMaxx Air into their service department. You'll make improvements for your customers and your bottom line.

To hear more details on how Copeland and Son uses ComfortMaxx Air, come see Nathan Copeland at Summit 2018 in Austin, Texas when he presents his session, "ComfortMaxx Air: Put It to Work!" 

## Meet Nathan Copeland at NCI Summit 2018

High Performance HVAC Summit 2018 is happening March 4-6 in Austin, TX. Nathan Copeland is one of six Performance-Based Contractors™ presenting how they Blaze A Trail to High Performance. Copeland, who is a comfort advisor for Copeland and Son Air Conditioning and Heating Service, Nashville, TN, will discuss how his team made ComfortMaxx Air a normal part of their service offering.

Come meet Nathan and network with your peers in Austin. Learn more about the Summit 2018 program at [GoToSummit.com](http://GoToSummit.com)

## JOIN US FOR SUMMIT, STAY FOR SOUTH-BY-SOUTHWEST MUSIC FEST

Summit 2018 offers you and your team a tremendous opportunity to not only hear from some of the Performance-Based HVAC Industry's finest as they share their wins and challenges, but also a chance to network with like-minded contractors from across the nation.

Questions? No problem. Call 800-633-1850 and talk to your customer care representative.

After Summit ends, stick around for our Post Show Training classes and then head into downtown Austin for one of the world's best music festivals, South by Southwest. [Click here for details.](#)



# Why Clients Should Participate in Testing, Adjusting, and Balancing

**S**o many people misunderstand what an HVAC TAB (Testing, Adjusting, Balancing) specialist does. The reason: no one has ever educated them. All too often I hear about balancers who don't interact with their customers – they just take measurements and record them in a spreadsheet.

I always make it a habit to invite client participation in all balancing procedures we perform. I take time to explain what the procedure is and why and exactly how we do it. This way, the client ends up with a better understanding and appreciation of exactly what a TAB specialist does.

More importantly, they also learn about how much time, effort, and patience goes into our work. It is so important for the client to understand what we actually do and what exactly they are spending their hard-earned money on.

## EYE OPENING EXPERIENCE

I completed a TAB job for a hospital several months ago. The client took part in all the test-

ing, adjusting, and balancing services we provided. Not only did that client and his assistant help test and adjust the unit, they also helped complete several traverses on each duct. They turned dampers, took measurements, turned more dampers, took more measurements ... the usual procedure TAB specialists perform on constant volume systems.

At several points, the client and his assistant said to me, "I know why you are the balancer -- I would never be able to do this job!" They also said, "You will never have to worry about me becoming a Balancer, I would not have the patience for this."

That was then followed with, "I can understand why you hear of people falsifying numbers ... this is infuriating!"

I found their comments funny, as they said them while we were up to our necks in insulation, in a hot attic, turning dampers yet another time. But the truth is, there is nothing funny about it. I have so many clients, engineers, control technicians, general contacts, and building owners say the same sort of things to me time and again!

## IT'S NOT JUST ABOUT THE PHYSICAL WORK

To make matters even more interesting, this building was not ideal for the technology TAB specialists use in the industry now. Bluetooth wouldn't connect to my tools, there was no cell phone coverage, and nothing electronic remained charged beyond two hours. So, this job had to be measured and recorded by hand and then entered into the report -- after the onsite work was completed each day.

One evening after the onsite work was done and I was entering the daily recordings into the test reports, my client commented how he was amazed that I was still working. I laughed and explained how the computers and software wouldn't work



Working on balancing a commercial hydronics system.

on his site, and that a TAB specialist's job consists of 50 % physical work and 50% reporting. This means what we do on site, we also record in a document. His eyes widened and he said, "Wow, I had no idea how much work was actually involved in balancing!"

This hospital project proved to me that when a client takes part in the testing, adjusting, and balancing work and learns why it's necessary and how much time and effort goes into it, they have a greater appreciation for the services we provide.

## SOMETIMES IT'S ABOUT THE TOYS

On another job, I planned to use a brand-new evergreen telemetry air capture hood. This client also provided me with two assistants to participate in the TAB services. They were just as excited to try that new tool as I was! One of the them took physical measurements using the hood. The other read the measurement number on the wrist reporter so I could enter it into the computer spreadsheet.

Great team effort! These jobs are always the most fun! I taught them about the new tools TAB specialists use, and together we completed the testing, adjusting, and balancing. We also were able to address any issues that arose. Best of all, they had a better understanding and appreciation of how much work, time and effort goes into all HVAC TAB services.

They fell in love with the wrist reporter and air capture hood!

## CLIENTS RESPECT THE EXACTING WORK WE DO

My company had the pleasure of working with these two again on a new section in one of their buildings some time back. The job involved a constant volume system, which means every diffuser had a manual damper that had to be adjusted. The clients and I started the job with an inspection and then focused on the air handling unit (AHU). The AHU had no submittal data.

So, the first step was to contact the manufacturer and find the correct nameplate information to balance the AHU to manufacturer design specifications. Once completed, we moved onto the diffusers.

This is always when I hear those same statements again: "I know why you are the balancer!" And, "Oh my is that close enough?" Also, "We have to do it again? What do you mean we have to do it again?"


Though I laugh every time, these statements show they now understand that balancing a system is not easy. They realize what we do takes time, patience, integrity. They better understand how balancing is so important for their HVAC systems to operate efficiently, the way the manufacturers designed them. Just be-

cause they have the best system installed in their building does not mean it's running efficiently.

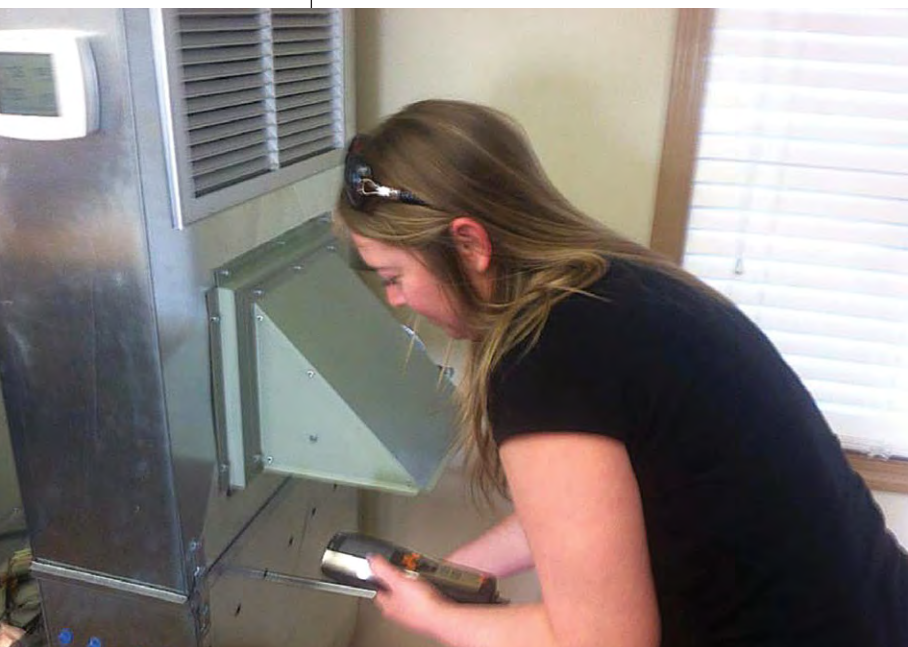
## IT'S REALLY AN EDUCATION

For these reasons, I always recommend that clients, engineers, and building owners take part during the TAB service. We get far greater results when they become aware of what it is we do and why it is worth the cost of doing it! When we finish the TAB services, clients better understand the functions of their HVAC equipment, and the importance of the system operating efficiently and to manufacturer design.

These clients; who can physically see, touch, and use all the different types of tools we use, and procedures we follow, learn that the TAB services provided are vital to any HVAC upgrade or installation.

Personally, as a TAB specialist myself, I find client participation crucial to growing our business. 

Dana Walsh is shown performing a residential duct traverse. She has been certified as an NBC TAB supervisor and is co-owner of Direct Flow Balancing, Inc.



**Dana Walsh** is an NBC-certified professional part owner/operator of Direct Flow Balancing Inc., headquartered in Mt. Pearl, Newfoundland, Canada. She is the company's vice president and one of their project managers. Walsh has held a Certification with the National

Balancing Council since June 19th, 2015. She has been a test, adjust, and balance professional for over 10 years.

# Measure and Repair Duct System Heating and Cooling Losses



Measuring static pressure on residential HVAC systems helps you find whether duct leakage is hindering system efficiency.

**H**ow would it change your conversations with your customers if you were able to show them that one-third to one-half of their heating or cooling was being lost by their poorly operating duct system? Would your customers be interested in you eliminating that problem?

Savvy HVAC contractors are finding practical ways to reduce duct system heating and cooling losses through testing, diagnostics, and making simple repairs to the HVAC systems they install and service. Customers are eager to purchase these repairs when they are taught the cost of their duct system heating and cooling losses through live field testing and a simple calculation they participate in.

Typically, home performance contractors prescribe replacing windows, appliances, shower heads, and light bulbs to save energy. This isn't very appealing work to most HVAC contractors. But reducing the building load up to 50% by improving the duct system, and proving it to homeowners is right up our alley.

## FIND DUCT SYSTEM LOSSES

Without diagnostic testing, load calculation software normally assumes a Btu loss of about 15%. Under peak summer and winter weather conditions this assumption will miscalculate actual losses *by more than 300%*. Especially during the peak heating or cooling days of the year when delivered system capacity is critical to comfort and impacts their utility bill the most.

To identify actual operating conditions, field diagnostic tests can be taken on a live system to reveal defects that can then be corrected. Without identifying and correcting these operating system defects, there is no way to control the load

of a building or deliver maximum HVAC system performance.

## DUCT LEAKAGE

Duct leakage is a real threat to the load of a building, and can be reduced in almost every situation. Btus that are lost or gained through leaky duct systems directly add to the load of a building. This is especially true on the return side of the system. By tightening up a duct system *correctly*, the duct system heating or cooling losses will be reduced.

But you can't just slap mastic on the ducts and guarantee energy savings. Knowing the average residential .50" w.c. fan currently operates at over .80" w.c. of actual total external static pressure, additional duct capacity must be added to the system *before* duct sealing. Otherwise the result will substantially increase static pressure which will then result in lower airflow and reduced system capacity.

How efficient is a 20 SEER system at 250 CFM per ton? Unfortunately, this is the typical result of many duct sealing jobs.

So, before duct sealing, measure total external static pressure. This evidence will help your customers understand additional duct capacity is needed before ducts can be sealed to assure adequate airflow.

Once more or larger ducts are installed, seal the duct system to assure airflow and Btus will not be lost from the system on the supply side or pulled into the system on the return side. This will have a substantial and immediate measurable improvement



Using a flowhood, HVAC technicians can accurately measure airflow at the grille.

Subtract the total airflow of the supply registers from the fan CFM to find live supply duct leakage. Then subtract the total airflow into the return grilles from the fan airflow to discover return duct leakage.

**Example:** The system fan airflow is measured at 1000 cfm. The total airflow through the supply registers is measured at 800 cfm; the difference is the supply duct leakage of 200 cfm.

On the other side of the fan, the air at the return grilles measures 700 cfm. 1000 cfm of fan airflow minus 700 cfm at the return grilles reveals 300 cfm of return duct leakage. Duct leakage of 200 cfm on the supply side and 300 cfm on the return side totals 500 cfm of live duct leakage.

If you have been using duct pressurization methods to test

in delivered system heating or cooling capacity.

Duct leakage is best measured live with your customers using basic air balancing test methods. Measure the fan airflow, then measure and total the airflow at the supply registers, and then at the return grilles.

duct leakage, you will find a substantial difference between the two duct leakage numbers. While duct pressurization testing is more widely accepted, the duct leakage number it provides has never claimed to represent a live duct leakage cfm number. Compare the two methods for yourself.

**WITHOUT DIAGNOSTIC TESTING, LOAD CALCULATION SOFTWARE NORMALLY ASSUMES A BTU LOSS OF ABOUT 15%. UNDER PEAK SUMMER AND WINTER WEATHER CONDITIONS THIS ASSUMPTION WILL MISS CALCULATE ACTUAL LOSSES BY MORE THAN 300%.**

**DUCT TEMPERATURE LOSS**

Under live operating conditions, nearly all duct systems lose some of the Btus generated by the equipment. The question is how much? The only real answer is found by measuring the actual duct losses of the system. This is a quick and simple test that will often blow your customer away.

On the supply side, measure the air temperature where it leaves the equipment. Next measure the air temperature leaving the farthest supply register. Subtract the two temperatures to find the temperature change through the system. Ideally the two tempera-



**UNDER LIVE OPERATING CONDITIONS, NEARLY ALL DUCT SYSTEMS LOSE SOME OF THE BTUS GENERATED BY THE EQUIPMENT. THE QUESTION IS HOW MUCH? THE ONLY REAL ANSWER IS FOUND BY MEASURING THE ACTUAL DUCT LOSSES OF THE SYSTEM. THIS IS A QUICK AND SIMPLE TEST THAT WILL OFTEN BLOW YOUR CUSTOMER AWAY.**

tures should be almost the same.

On the return side of the duct system, measure the return air temperature at the farthest return grille and subtract from the air temperature entering the equipment.

The air temperature in the ducts should not change more than a degree or two. An air temperature change greater than this is evidence of a loss in system heating or cooling capacity. This loss is invisible and unaccounted for by most designers and service technicians.

**Example:** The air entering the return grille is 70°. The return duct

passes through an attic at 40°. The temperature entering the equipment is 60°. Subtract 60° from 70° to find 10 degrees are lost through the return duct system from duct leakage and thermal loss.


To find the percent of Btu loss, divide the degrees of duct temperature loss into the temperature rise of the equipment.

**Example:** If the equipment temperature rise is 40° and the duct temperature loss is 20° then 20° divided by 40° equals 50% of the equipment generated heating Btus lost through the duct system. If the equipment out-

put is 60,000 BTUs, multiply by 50% to find 30,000 BTUs of duct loss.

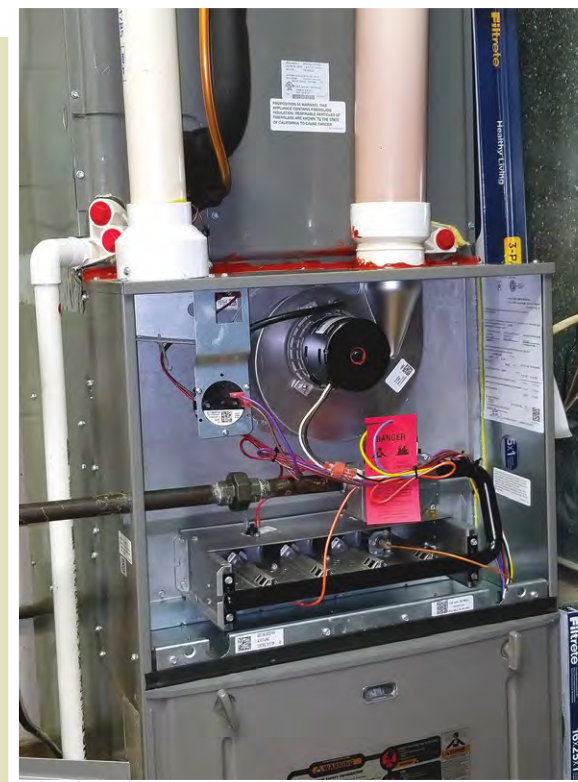
Doesn't this turn 90% AFUE equipment into a 45% AFUE system? Your competitors can't fix this system defect, because they are unaware the problem exists without measuring it.

**OPPORTUNITY ABOUNDS**

This is only one example of new opportunities available to Performance-Based Contractors™. It is becoming more and more evident that those who educate their customers deliver better performing and more efficient systems. Using test and diagnostics while serving your customers will give you a substantial advantage in every sales situation. 



Rob "Doc" Falke is president of National Comfort Institute, Inc. — an HVAC-based training company and membership organization. For more information about indoor air quality opportunities, contact him at [rob@ncihvac.com](mailto:rob@ncihvac.com) or call him at 800-633-7058.



**"Pure Idiots" — Andrew Farrell, DM Select, Burke, VA**

Well this is bad. Do you run into this situation, ever? A 90% AFUE Lennox Pulse furnace is replaced with an 80% AFUE furnace, but the contractor reused the same PVC flue pipe?

This is what Andrew Farrell discovered. Visitors and subscribers to *High Performance HVAC Today* magazine and website voted his entry as the February 2018 winner of our Photo-of-the-Month contest. Congratulations to Andrew! He will receive a \$50 gift card.

Did you know that you can also win? All you have to do is submit an image. By the way, submissions are always welcome.

If you'd like to submit a photo for consideration in our Photo-of-the-Month contest, [click here](#) and fill out the information as requested.

**THE MARCH 2018 CONTEST OPENS ON FEBRUARY 9, 2018.**

That gives you plenty of time to submit something in any of our three categories: **The Good**, **The Bad**, **WTH (What the heck)**.

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## Welcome to NCI's Newest Partner

National Comfort Institute, Inc. (NCI) is excited to announce the addition of a new partner in our Training Incentive Partner Program (TIPP) -- The Electric & Gas Industries Association (EGIA).

EGIA is an 85-year-old non-profit organization. It is dedicated to advancing energy efficiency and renewable energy solutions through the home improvement and renewable energy industries.



They also manage one of the largest energy-efficiency financing programs in the country.

In their partnership with NCI, EGIA will provide special financing services to NCI's membership. Financing is more important than ever for Performance-Based Contractors™ because it helps to make bigger renovation projects much more affordable for consumers.

Please join us in welcoming EGIA into the NCI partner family. And be sure to visit with them during the [2018 High Performance HVAC Summit](#) in Austin, TX, March 4-6, 2018.

Summit 2018 is less just six weeks away and promises to be one of the best for the Performance-Based Contracting™ industry. We are excited to announce that **Goodman Manufacturing and The Electric & Gas Industries Association (EGIA)** are this year's Platinum Sponsors and will be co-hosting our Welcome Reception on Sunday, March 4th.

## Summit 2018 is Nearly Here!

This reception is a great way to kick off

your education as you **Blaze Your Trail to High Performance**. So be sure to stop by the reception, enjoy some food and drink, and visit with your fellow Performance-Based Contractors™ from across the country.



Just click the [GoToSummit.com](#) link to register today.

In addition, be sure to plan on staying for the **FREE Goodman post conference sales training** they are offering. Intended for your sales team, class attendees will learn how to sell premium comfort systems, how to increase the average ticket price, increase their closing rates, and create more satisfied and loyal customers.

This is a two-day class that you'd normally pay \$375 per person to attend. Goodman is offering it to all Summit attendees. There is a 50-person limit for the class, so be sure to sign up right away. [Click here for more information.](#)

If you have any questions about this special class offering or anything else regarding Summit 2018, visit [GotoSummit.com](#) or please call 800-633-7058. You can also register by phone at this number.

**There is an App for That! We Call It AirMaxx**

NCI is excited to launch a NEW mobile app that is available to only to members at NO ADDITIONAL COST. It is called AirMaxx™ and is included in all ComfortMaxx™ subscriptions. It is available for both Android and iOS phones.

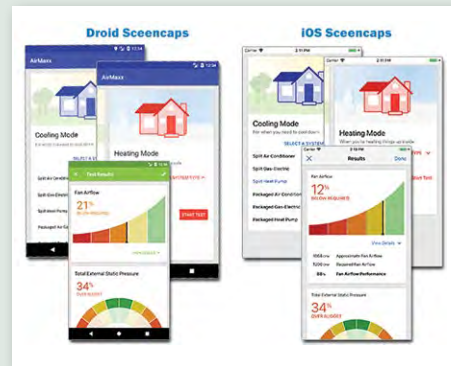
AirMaxx enables you to show homeowners the "airflow grade" for their HVAC systems. All you need is to collect some nameplate information, then do four static pressure measurements, and input the results into the app. The app does all the calculations and produces customer-centric graphs and wording

## for you to show them.

For more information click this link: [ncilink.com/AirMaxx](#).

**NCI Member Benefits Are Bigger than Ever!**

NCI has made some exciting changes to our tools, instruments, and support materials, plus added some fantastic new benefits for members like you.



First, as an NCI member, you can **now apply NCI Bucks to pay for up to 50%** of your tool and/or instrument order! For example, if you have \$2000 in NCI Bucks, and you order an EBT 731 Flow Hood for \$3245, you can apply up to 50% (\$1622.50) in NCI Bucks to that tool order, then pay the balance with a credit card. **This benefit is ONLY for NCI members!**

In addition, NCI has increased the member discount from **2% to 5%** on all the tools, instruments and support materials you buy. Please note that these two benefits do not apply to our [resale products](#).

But wait, there's more – NCI now offers **FREE shipping and handling** on all tool, instrument and support material orders that total more than \$200. If your order is under \$200, a standard \$15 shipping charge will apply.

Oversized items may be subject to additional shipping costs. Again, resale products are excluded from this.

If you have any questions, please call Nick Guarino at 1-800-633-7058.

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# Financing Can Turbocharge Your High Performance Selling



Dominick Guarino is publisher of HVAC Today magazine and CEO of National Comfort Institute, Inc. He can be reached at [domg@ncihvac.com](mailto:domg@ncihvac.com)

**A** recent Forrester study found that offering financing can result in a 17% increase in incremental sales and a 15% increase in average order value.

With long term financing you can help customers afford high efficiency equipment with the right improvements to their systems.

By contrast, the 6 or 12 month “same as cash” deals, usually aren’t the best option for most customers, unless they have lots of cash in the bank and can pay it off in 6 or 12 months.

Let’s examine some benefits of properly financing an HVAC system replacement with performance improvements.

## CUSTOMER BENEFITS

**Lower Total Cost of Ownership.** When structured properly, payments can be partly or completely covered by the energy savings. A well-functioning, performance-tested system will help insure those savings.

**Predictability.** Even monthly payments allow customers to budget their expenses, while knowing exactly when their loan will be paid off.

**BY PROMOTING MONTHLY PAYMENT AMOUNTS UP FRONT, YOU’VE SUDDENLY MADE YOUR CUSTOMER’S PURCHASE ATTAINABLE.**

**A rate they can live with.** With a good financing partner you can “buy down” the rate for a monthly payment customers can handle.

**Affordability.** It can help customers afford to make their HVAC system work right – often for the first time, allowing them to better enjoy a comfortable, safe, healthy and energy efficient home.

**Resale Value.** When they sell their home, customers can pay off the loan and enjoy the increased resale value created by a top-notch comfort system.

## CONTRACTOR BENEFITS

**Close more sales!** Contractors who offer the right financing options close sales more often. More than ever, customers expect financing options on large purchases. When you don’t offer them, you are excluding a big part of your market.

**Increase your ticket price.** By promoting monthly payment amounts up front, you’ve suddenly made your customer’s purchase attainable. This creates the opportunity to add additional, even more profitable products and services to the purchase. What may not have seemed affordable before – is affordable now! According to [EGIA](#), financed systems, on average, fetch a \$2,000 higher price.

**Generate Repeat Business & Referrals.** By offering payment options that meet your customer’s needs, you’re creating loyalty and building trust. They will tell their family, friends, and neighbors how much you helped them.

The key to a successful financing program is educating your team. There are many options and terms you’ll need to be fluent in, including buy-downs and second-look financing.

Seek out a solid financing company that provides the initial education and the long-term support you will need to succeed. Ask them for referrals from contractors in other markets.

Look for a company that specializes in HVAC. Make sure they answer their phones, and don’t put you in voicemail purgatory – especially when you’re at the kitchen table.

A good financing program can help make all the difference in your performance-based company. It can help you do the right thing for your customers while making the profits you need and deserve to make sure you are around for many years to come to take care of their needs.



**INCREASE YOUR SALES  
CLOSE RATIO  
& EARN NCI TIPP BUCKS**

## Exclusive Customer Financing Program for NCI Members Now Available Through the Training Incentive Partner Program (TIPP)

NCI has partnered with EGIA to offer the **Express Loan Program** to NCI members. This program offers great rates and terms, as well as a customer application and funding process that is 100% paperless and completed using a mobile app and e-sign documents.

### Express Loan Program Highlights:

- ✓ Unsecured installment loans to \$65,000
- ✓ Fixed APR promotions from 1.99% - 9.99%
- ✓ Terms to 12 years for HVAC
- ✓ Terms to 20 years for solar
- ✓ Fixed APR promotions from 2.99% - 9.99%
- ✓ No interest with equal monthly payment options available
- ✓ No interest with equal monthly payment options available
- ✓ No interest/no payment Same-As-Cash options up to 24 months

### Special Bonus Feature for NCI Members

On all funded loan volume, EGIA will rebate 37.5 basis points (.375%) to your TIPP Bucks account that can be used for NCI training, conferences, and up to 50% on tool and instrument purchases.

Learn More & Enroll Today in the Express Loan Program at [www.egia.org/nci](http://www.egia.org/nci)



BROUGHT TO YOU THROUGH A PARTNERSHIP BETWEEN





NOW AVAILABLE

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FOR ORDERS OVER \$200

(excludes resale & oversized products)

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Start Shopping Today! Go to [ncilink.com/store](http://ncilink.com/store) or call 1-800-633-7058



## And BIGGER Benefits for NCI Members!

NCI members can now apply NCI Bucks to pay for up to **50%** of your tool and/or instrument order! This benefit is **ONLY** for NCI members! *Resale products excluded.*

NCI has also increased the **member discount** from **2% to 5%** on all the tools, instruments and support materials you buy. *Resale products excluded.*



*If You Don't Measure,  
You're Just Guessing!™*