

HIGH-PERFORMANCE HVAC TODAY™

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



AHREXPO®

Setting the Stage for 2019

ALSO IN THIS ISSUE:

- NCI Summit 2019: The Week At-A-Glance
- Selling Maintenance Agreements
- ABCs of High-Performance Contracting: Part 7
- Financing Powers Performance



WIRELESS HYDRONIC BALANCING KIT

Chiller Freeze Protection | Pump Pressure Drop | Refrigerant Pressure Monitoring



The Wireless Hydronic Balancing Kit was designed by your HVAC market leader to be the most accurate and easy to operate manometer on the market.

This balancing kit has two wireless transducers that measure the pressure drop across hydronic system valves and communicate to an Android™ handheld device via Bluetooth® wireless technology. The handheld's pre-loaded software allows users to read, record, and share data in the simplest way possible.

The wireless capability eliminates the need for cumbersome and unruly hoses. Its ergonomic design allows a single operator to monitor and balance a hydronic system in less time than traditional methods.

Unlike other hydronic manometers on the market, the 490W has built-in flow conversion capability, which shortens reporting time and eliminates human error during flow calculations.

The kit's overall efficiency, ergonomic design, and streamlined software make it the ideal solution for contractors looking to save time and money on a job.

SERIES 490W | REQUEST A QUOTE TODAY

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JANUARY 2019 VOLUME 3 NUMBER 1

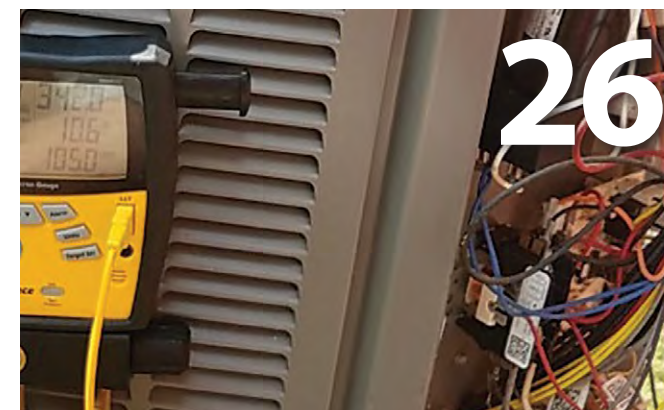
HIGH-PERFORMANCE HVAC TODAY™



LEADERSHIP:

Summit Week 2019

Everything you need to know about National Comfort Institute's annual industry event being held in April.



MANAGEMENT:

ABCs of High-Performance HVAC: Part 7

This month, Dominick Guarino focuses on having the right tools for the right job for Performance-Based technicians.

DEPARTMENTS

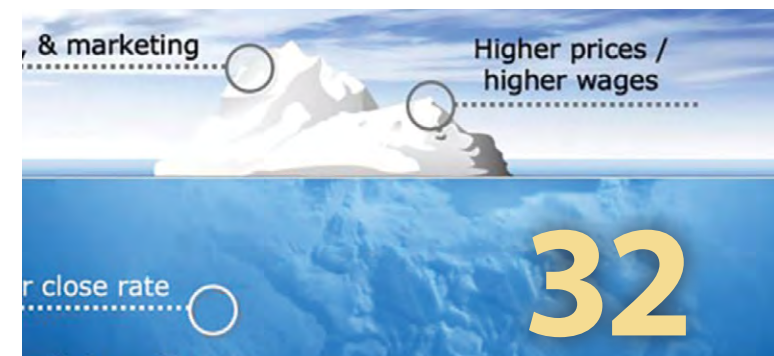
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SERVICE:

Selling High-Performance Maintenance Agreements

Contractor Jim Ball addresses how his company includes and sells performance testing in their service agreements.



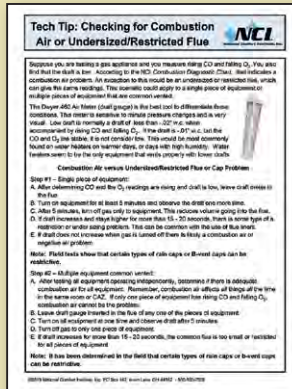
MANAGEMENT:

Financing Powers Performance

Do you make use of financing to help your customers buy duct renovations, air upgrades, and new equipment? You should. Here's why from financing expert Eric Howarth.

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FREE Monthly Download



This month's download is a methodology for testing any vented combustion equipment to help diagnose the presence of combustion air problems, or undersized or restricted flues.

You can use it for a single piece of equipment, or for multiple units that are common vented. This data sheet highlights the best instrument to use to measure combustion air and provides five-step procedures for single and multiple units.

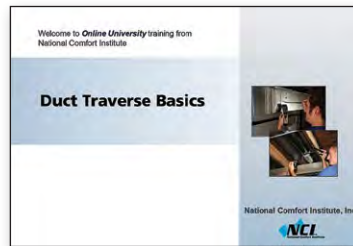
Go to ncilink.com/md0119, or use your phone with the QR Code below.

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



Online University

Featured this month is the last module of the System Performance Testing Series. It focuses on **Duct Traverse Basics**.



A duct traverse is a method for accurately determining system airflow when you can't use a balancing hood.

In this module you will learn to apply the basic traverse formula for both round and rectangular ducts. You'll also be taught how to recognize

the best and alternative locations to perform the traverse, and understand when it is NOT appropriate to perform a duct traverse.

Discover more at ncilink.com/ou0119.



BLOG POSTS

COMMERCIAL STATIC PRESSURE TEST METHODS



Static pressure measurement on commercial HVAC systems can vary significantly from one type of equipment to another. In this blog post, Rob Falke shares NCI's testing process for packaged equipment, including measuring TESP, plotting fan airflow and internal equipment pressure drops, and so much more.

Read his blog post at ncilink.com/ComTest.

ELIMINATING PROBLEMS THROUGH INNOVATION

In another of our Legacy Series Blog Posts, we share one of the last columns by Nita Brooks who wrote about creating a company culture of innovation where essentially the entire team works together to resolve problems.



Nita talks about how it is the people who drive problem-solving success and shares insight on what it takes for this culture to happen.

Read her blog at ncilink.com/innovate.

There's an APP for That...

MUNTERS PSYCHROAPP



The Munters PsychroApp™ is our January Featured App. It provides a quick and easy psychrometric mobile tool that makes accurate calculations of the thermodynamic properties of moist air easy.

Calculate the total, sensible, latent, and moisture loads of any process more accurately than using psychrometric charts. The PsychroApp™ provides calculations such as dew point, grams per kg, and grains per pound. Simply enter the temperature and relative humidity and Munters PsychroApp™ will output the corresponding dew point or grams per kg/grains per pound, giving you the insight you need for your job.

This free app is available in both the Apple (ncilink.com/MuntersA) and Google (ncilink.com/MuntersG) stores.






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Speed Up & Simplify Your Testing Process • Wow Your Customers

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High-Performance Training Software

Lead Generation | Diagnostics | Sales | Accountability

NOW AVAILABLE!

New AirMaxx companion mobile app included at no extra cost





You will be able to generate high quality leads and impress your customers with professional and easy-to-understand reports about their comfort systems. This will help differentiate your company as a performance-based leader in your marketplace.

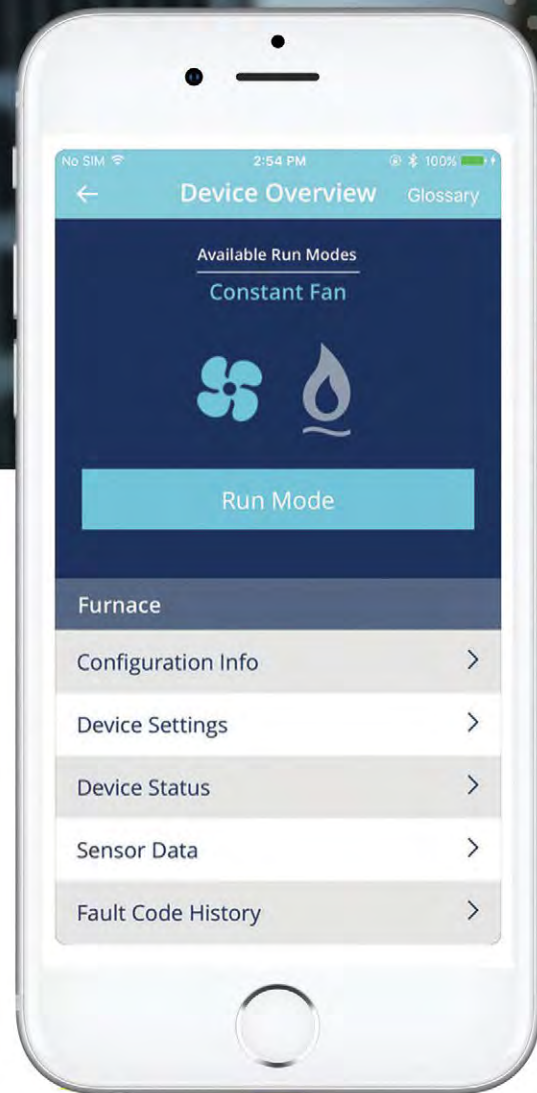
- Close more sales
- Create consumer-friendly visual reports
- Improve testing accuracy
- Eliminate math errors
- Eliminate handwriting legibility issues
- Easily access customer data, equipment inventory and testing history



Call 800-633-7058 to get started today!

Thinking **differently** often creates a new technology
that provides a better solution.

Connect. Configure. Diagnose.



To download visit

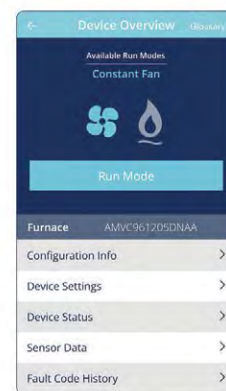


CoolCloud™

Say goodbye to crawling, sweating, or waiting to initially diagnose select HVAC systems. Now smart contractors can wirelessly connect energy-efficient HVAC systems from a paired phone or tablet.



System Pairing Screen



Device Overview Screen

CoolCloud™ app is engineered exclusively for high-efficiency Goodman® and Amana® brand heating and cooling systems.

www.coolcloudhvac.com

Our continuing commitment to quality products may mean a change in specifications without notice.

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TODAY'S WORD

By Mike Weil

Happy New Year! Here are 14 Reasons to Celebrate



Mike Weil is editor-in-chief and director of communications and publications at National Comfort Institute, Inc. mikew@ncihvac.com

It's 2019!! I hope everyone had a fantastic New Year's celebration, are now fully recovered, and ready to take on the future. As we mark the new year, I got to thinking about all the things we, the High-Performance HVAC Contracting Industry, have and should be thankful for.

So, without further ado, join me in celebrating:

- 1. Our Customers:** We thank those who enable us to work our trade by understanding the value we provide, and buy our duct renovations and air upgrades
- 2. Our Training:** Performance-Based Contractors™ are among the best trained HVAC contractors in the industry
- 3. Our Uniqueness:** This segment of the industry stands out and provides distinctive opportunities other contractors just don't have access to
- 4. Our Abilities:** We can truly control comfort

IT'S EASY TO BE A STAR, TO OUTSHINE YOUR COMPETITORS, IF YOU HAVE THE DESIRE TO DO SO.

in any building. And we can prove it!

- 5. Our Profession:** Because our profession is unique, it cannot be outsourced to another country. It is purely American
- 6. Our Careers:** High-Performance Contractors have a great career path for their employees to follow
- 7. Our Products:** As High-Performance Contractors, our product is ourselves. Therefore every contractor is unique and no one can steal what we design, sell, install, and maintain
- 8. Our Self-Determination:** Our businesses and opportunities are 100% controlled by us –

not some outside influence, corporation, government, or other entity

- 9. Our Technology:** We have access to the very best HVAC equipment, tools, and testing/diagnosing instruments. They enable us to ply our trade to the best of our ability
- 10. Our Ability to "Shine":** As Doc Rusk, one of my 20th Century contractor heroes used to say, "HVAC is a dirty business. But it is so easy to be a star, to outshine those around you, if you have the desire to do so"
- 11. Our Opportunities:** Performance-Based Contractors™ have so many potential opportunities open to them. We are limited only by our decisions when it comes to training, creativity, and culture
- 12. Our Own Membership Organization:** National Comfort Institute and all its partners provide the High-Performance HVAC Industry with their own sounding board, training, and educational resource
- 13. Our Own Conference:** The *High-Performance HVAC Summit* is a unique Peer-to-Peer networking opportunity for Performance-Based Contractors. See Dominick Guarino's comments on page 38 for reasons why you should attend
- 14. Our Own Magazine:** OK – this one may be more personal. But *High-Performance HVAC Today* is the digital and print voice for Performance-Based HVAC contractors and I have the honor and responsibility to manage it.

So these are some of the reasons to celebrate the new year and to get yourself fired up for the next stage of your journey to performance. May 2019 bring you and your team great success. I look forward to seeing you at Summit 2019.

What High-Performance Contractors Should Do at the

AHR EXPO JANUARY 14-16 2019



This month the entire HVAC Industry gathers for the 71st Annual AHR Exposition in Atlanta, Georgia from January 14-16. With more than 2,100 product manufacturers and suppliers displaying the very latest in mechanical systems products, innovations, and services, the show is a veritable shopping mall for the discerning HVAC contractor.

Since 1930, the AHR Expo has remained the industry's gathering place for commercial and residential HVAC contractors, facility operators, architects, educators, and other industry professionals to explore the latest trends and applications and to cultivate mutually beneficial business relationships.

More importantly, the High-Performance segment of the HVAC Industry will be well represented. National Comfort Institute (NCI) and National Balancing Council (NBC) will both be exhibiting (Booth BC4929 in Hall C of the Georgia World Congress Center), so please be sure to stop by and say hello.

You may not know this, but NCI and NBC are endorsing organizations of the expo and have been for years.

Furthermore, many of the tool and instrument manufacturers who build the products you need to do your Performance-Based Contracting™ work will also be there – as well as everything from software to massive chiller systems and more.

Finally, there are the educational sessions, which number in the hundreds. NCI and NBC are leading four FREE ses-

sions that you should be sure to check out. More on that in a minute.

A CORNUCOPIA OF INDUSTRY PRODUCTS SHOWCASED

Because of the sheer size of this show and the crazy number of products on display, organizers have divided the exhibit hall into three distinct sections. This enables you to better organize and manage your time while there.

These three sections include:

Building Automation and Control (BAC) Showcase – This area features products and services for Building Automation, Energy, and Facility Management Systems; Climate Controls; Monitoring Systems; Networked Building Systems (such as Lighting, Security, and Fire Alarms); Wireless/Cloud-based technologies; and more.

The Software Center concentrates on HVACR-related software, both off-the-shelf and customized solutions. These include: Project and Field Service Management (Estimating, Inventory Control, GPS Tracking); Systems Design, Specification

and Analysis; Remote-based and Cloud-based Software; and more.

The Indoor Air Quality Association Pavilion is designated for member companies of the Indoor Air Quality Association (IAQA).

These exhibitors will show products related to Indoor Air Quality, such as Air Quality Monitors, Exhaust Fans, Environmental Testing Systems, Dehumidifiers, and more.

Of course the rest of the show fills several giant halls in the convention center that can account for miles and miles of walking. It is always a great idea to either use the AHR Expo App or the printed guidebook to plan your day.

One more fun fact: the Expo showcases thousands of products in more than 770 categories including:

- Heating Systems, Air Conditioning Units, Refrigerating Equipment
- Ventilators, Ducts, and Fans
- IAQ Related Products, including Filters
- Building Automation, Controls, Networking, and Energy Management Systems

- Radiant Heating, Hydronic Systems, and Plumbing Products
- Tools and Instruments
- Software for HVAC Design, Estimating and Service/Business Management
- Solar, Geothermal, and other Renewable Energy Related Products.

EDUCATION, EDUCATION, AND MORE EDUCATION

Because the Expo is held in conjunction with the ASHRAE Winter Conference and a large number of other organizations, attendees can choose from hundreds of seminars and product demonstrations on the exhibit floor as well as in classroom settings.

In fact, there are more than 120 sessions including free best practices and industry trends seminars from leading HVACR organizations, continuing education programs from the ASHRAE Learning Institute (ALI), rapid-fire product presentations, and professional certification opportunities.

HIGH-PERFORMANCE HVAC CLASSES

Among these many training opportunities are four classes being taught by instructors from both NCI and NBC. All four

are FREE and open to the public.

- Airflow Testing Accuracy in the Field
- Quick Guide to Applying Fan and Pump Laws
- How Much Energy Can HVAC System Balancing Save?
- What it Takes to Get an Installed HVAC System to Operate at Equipment-Rated Capacity.

Airflow Testing Accuracy in the Field will be held on Monday, January 14th from 1-2 PM in room B315.

This entry-level class is free to all registered AHR Expo attendees and is being presented by **Ben Lipscomb, P.E.**, engineering manager at NCI; and **Peter Jacobs**, president of Building Metrics.

Lipscomb and Jacobs will discuss how advances in airflow instruments and technician certification have increased the accuracy of field airflow measurement in recent years.

They will show how test methods are now simpler because of advanced instru-

ment technology, and skills are improving because of a steady rise in field airflow testing throughout the HVAC industry.

In **Quick Guide to Applying Fan and Pump Laws**, attendees will learn about this quick guide to remember and apply pump and fan (affinity) laws in their daily work.

This seminar will provide more than a dozen examples of applications using fan and pump laws. Understanding these laws enables test and balance, commissioning, and facilities maintenance professionals to apply and solve problems on a daily basis.

This class is being held Monday, January 14th from 2:30 to 3:30 PM. It too is a free entry-level class for all registered AHR Expo attendees. It is being presented by **Scott Fielder**, director, National Balancing Council.

How Much Energy Can HVAC System Balancing Save? Good question, right? Find out on Monday, January 14th from



Lipscomb



Falke



Fielder



Jacobs

Attendees fill the room in the convention center during one of the many presentations at the AHR Expo.



4-5:30 PM in room B315.

This entry level class will highlight how testing alone doesn't save any energy. It will demonstrate, however, that balancing an HVAC system can save some energy by bringing the system closer to designer and equipment manufacturer specifications.

It will also show how you can use additional balancing testing to diagnose the system, find hidden system shortcomings, and make custom repairs. By the way, custom repairs are where the greatest HVAC savings can be found.

This class is being taught by **Peter Jacobs**, president, Building Metrics; **Ben Lipscomb, P.E.**, engineering manager, NCI, and **Rob Falke**, president, NCI.

What it Takes to Get an Installed HVAC System to Operate at Equipment Rated Capacity – taught by **Rob Falke**, president of NCI.

This last entry-level NCI class will be held Tuesday, January 15th from 1-2:30 PM in room B312.

Rob will talk about how most people believe it's extremely difficult to optimize the performance of an installed HVAC system. Then he will show that developing your skill and ability to discover system defects may be easier than you think. He says, "Once the defects are identified, improving system efficiency may be more straightforward than you ever imagined."

AHR EXPO SURVEY SHOWS UPBEAT OUTLOOK FOR 2019

Each year the management team at AHR Expo surveys their HVACR manufacturer exhibitors to get their views on the upcoming economic year. The results



Rob Falke fills the house during his 2018 AHR Expo presentation.

were released in November and showed that HVACR Industry manufacturers reported positive 2018 sales growth.

It seems that last year's confidence in the industry's economic outlook is forecasted to carry into 2019, with 87% of respondents anticipating positive business prospects heading into the new fiscal year.

The report also indicates the HVACR market is primed for continued business growth. Reports for 2018 are at an all-time high, with 44% of respondents reporting a significant sales increase of more than 10% year-on-year; this is up from an already impressive 2017 record of 35%.

The AHR Expo, co-sponsored by ASHRAE and AHRI, is held concurrently with ASHRAE's Winter Conference. The event will take place on Jan. 14-16, 2019 at the Georgia World Congress convention center in Atlanta, GA.

Market Segment Growth Expected in All Sectors

– Respondents expect to see steady growth across all market segments in the areas of: residential; light commercial; heavy commercial; schools; non-school institutional buildings; office buildings; lodging; manufacturing/industrial; data/

telecom centers; hospitals/health-care; restaurants/hospitality; and laboratories/cleanrooms. Of these, lodging is forecasted to experience the fastest growth, with projections up 10% from last year at 64%.

Overall sector growth predictions are up in comparison to last year as well, with positive outlooks across all markets at nearly 60% or better forecasts for excellent or good growth projections for 2019.

For the third year, the report shows a shift in potential market drivers for business, with retrofit and renovations taking the lead for 2019 at 36% – up nearly 10% from last year.

As expected, **reliability** remains the most important customer requirement when making buying decisions. Responses indicate a steady rise in **energy efficiency and indoor air quality** as close second top-rated factors for purchase decision-making.

Energy efficiency saw the most growth, up 6% to more than 96% of respondents ranking it important to very important in their considerations.

This aligns with the responses for most important trend or issue with potential impact for businesses in 2019 – leading the charge is the Internet of Things (IoT) and the rise of connected buildings as they relate to energy efficiency and smart control.

Issues of concern are reported as rising tariffs and the need to hire more professionals across the HVAC industry.

The survey, known as the *Annual Economic Outlook of HVACR manufacturers*, is sponsored by AHR Expo and the ASHRAE Journal.



AHR Exposition Commercial HVAC Products

BUILDING INTEGRATION PLATFORM

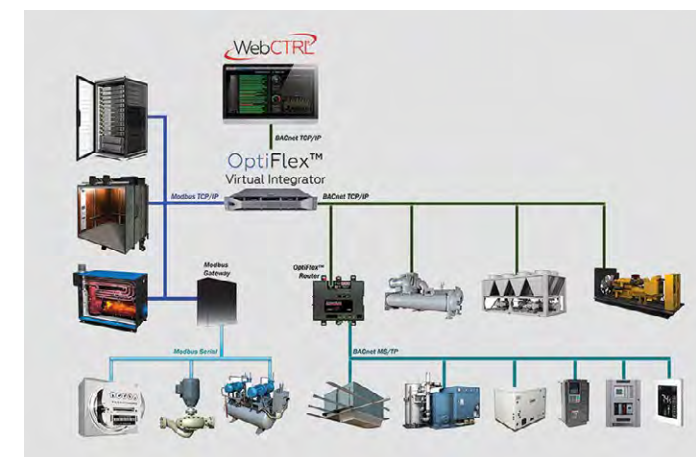
Automated Logic Corp's OptiFlex™ virtual integrator is a software-based integration platform for data monitoring across diverse building systems. OptiFlex™ provides scalable integration solutions ideal for large integration projects such as data centers, hospitals, and college campuses.

It monitors large volumes of data across various building systems, sub-systems, and devices – regardless of the manufacturer. The data can then be turned into actionable insights to help operators improve overall building performance.

The virtual integrator supports up to 50,000 data points from a single computing point. This eliminates the need for multiple hardware gateways, which often require costly materials and labor, and have installation limitations due to space constraints in most mechanical rooms.

It supports BACnet IP and Modbus TCP/IP, the two most commonly used IP-based protocols, as well as a new pluggable protocol technology that allows other protocol additions.

The OptiFlex also includes new commissioning tools for technicians. A web-accessible, table-based user interface makes it



fast and easy to connect, configure, and commission third party devices, as well as sort, categorize, and scale data points. Alarms and trends can also be enabled and configured for diagnostics and troubleshooting.

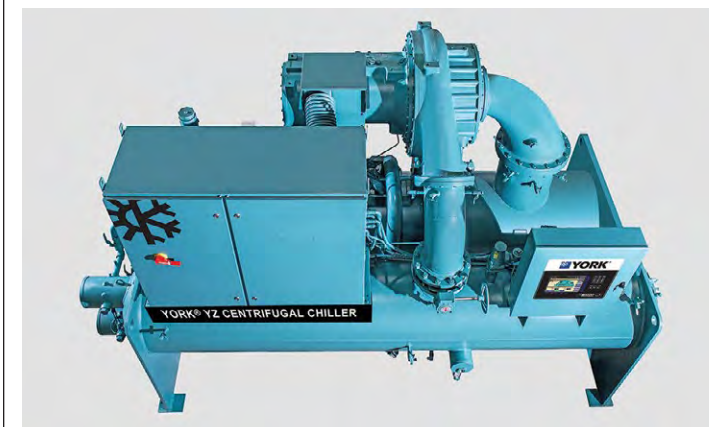
Customers can add additional points as needed through a scalable licensing mechanism.

For more information, visit ncilink.com/Optiflex

MAGNETIC BEARING CENTRIFUGAL CHILLER

The YORK® YZ Magnetic Bearing Centrifugal Chiller, from Johnson Controls, Inc., is a fully-optimized chiller built for use with next-generation low-global warming potential (GWP) refrigerant to increase energy efficiency.

It provides centrifugal-chiller energy efficiencies as low as



0.1kW/ton, and less in off-design conditions where typical fixed-speed chillers experience performance issues.

The YORK® YZ has the potential to reduce annual electricity consumption by an average of 35 percent.

It is optimized around R-1233zd—a next generation, low-pressure refrigerant—and is a unique combination of advanced technologies, including a variable-speed magnetic bearing compressor, high-speed hermetic induction motor, falling film evaporator, adaptive capacity control logic, and cloud-based analytics.

For more information, visit ncilink.com/YorkYZ

ELECTRONICALLY COMMUTATED MOTOR

Genteq® Ensité® motor is an electronically commutated motor specifically designed for furnace application. Ensité enables customers to comply with the U.S. Department of Energy's (DOE) Fan Energy Rating (FER) regulatory requirements taking effect in July of 2019.

The Genteq® Ensité® motor is a cost-efficient solution to achieving compliance without compromising on premium features such as advanced Blak Box™ and Near Field Communication (NFC) capabilities that support Internet of



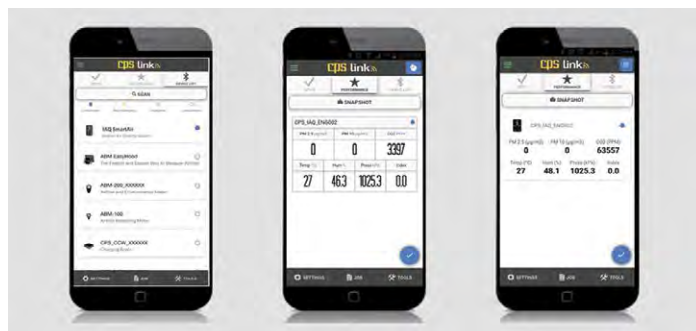
Things (IoT) and preventive maintenance.

For more information, visit ncilink.com/Ensite.

INDOOR AIR QUALITY SMART TOOL

Known for tools built by technicians for use by technicians, CPS Products' IAQ SmartAir™ is a smart tool used for identifying, diagnosing, and solving IAQ issues.

This tool is designed to more accurately diagnose indoor air quality issues, improve sales, and enhance overall IAQ professional expertise. Its design walks professionals through the measuring process and provides a compiled list of IAQ issues



and potential solutions based on collected and analyzed data.

The IAQ SmartAir™ connects to the internet via WiFi for remote monitoring and evaluation, and allows professionals to create on-site customer reports and job quotations.

For more information, visit ncilink.com/SmartAir.

WIRELESS HYDRONIC BALANCING KIT

The Dwyer Wireless Hydronic Balancing Kit, Series 490W, is a manometer designed to provide accurate and easy operation for HVAC professionals.

The kit measures the pressure drop across HVAC balancing valves by using wireless sensors, a handheld device, and Bluetooth® communication.

Being wireless means there are no hoses to carry, snag on equipment, or needing to be drained. The 490W includes the

Dwyer Hydronic Application Software that contains valve charts for numerous manufacturers.

Users can select valves for measurement from a predetermined list or through manual input of CV values.

The handheld device monitors the flow of up to three valves



at a time, allowing a single operator to monitor and balance a hydronic system in less time compared to traditional methods.

For more information, visit ncilink.com/490W.

COMMERCIAL ENERGY RECOVERY VENTILATOR

The Energy Wall Universal ERV (U-ERV) is an energy recovery ventilator that is three times smaller and lighter than current technologies available on the market. It weighs only 90 pounds, allowing for easy installation of the fully-functional, independent system.

A small footprint allows the modules to be hand-carried and assembled onsite, where they operate with a single duct connection and point-of-power and control. This provides extreme redundancy for mission-critical facilities.

This ERV is highly configurable and can be used with optional DX or chilled water coils supporting limitless applications. It is also compliant with UL 900 fire/smoke standards and operates in all six orientations.



Powered by the Energy Filter® integrated core, the U-ERV achieves 74% sensible, 64% latent, and 70% total energy transfer according to AHRI 1060 standard. The Energy Wall U-ERV systems range from 600 to 6,000 CFM and are equipped with modulating ECM+ fans and economizer bypass and control.

Energy Wall's high efficiency heat and moisture transfer membrane is at the heart of its ERV system. Constructed of ceramic fiber-based material that withstands harsh conditions over time without degradation.

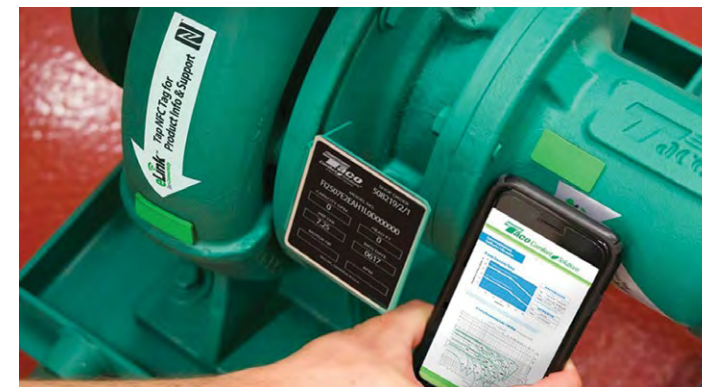
The membrane composition has inherent anti-microbial characteristics making it highly effective at deactivating airborne contaminants. The counter-flow heat exchanger design contributes to overall system efficiency.

For more information, visit ncilink.com/U-ERV.

CLOUD-BASED MOBILE PRODUCT KNOWLEDGE BASE

Taco Tags featuring eLink™ is a cloud-based support program that provides users with a web-based, factory-maintained knowledge base on their mobile device via NFC technology.

The Taco Tag is an IC chip and antenna wrapped in silicone



designed to offer durability under the most extreme conditions of heat and weather.

It works using power from a user's devices, eliminating the need for wires or external batteries. Each tag provides direct access to customer support, along with all vital information specific to each product. It is connected to the eLink cloud-based service system where users can store and access order information, product specifications, instruction sheets, suggested replacement parts, CAD files, technical support, catalogs, local sales representative information, and more.

For more information, visit ncilink.com/elink.

Take the First Step Towards High Performance with Duct System Optimization and Residential Air Balancing Training

Learn how to deliver high quality, profitable duct system renovations that really work! Set yourself apart from competitors by knowing how to optimize a duct system so it delivers the heating and cooling the equipment was designed to provide.



For more information, go to ncilink.com/DSO or call 800.633.7058

COMMERCIAL HVAC LOAD REDUCTION MODULE

enVerid Systems announced that its HLR 1000E-M has received the AHR Expo Innovation Award in the Green Building category. These HLR modules reduce up-front HVAC equipment costs, improve energy efficiency, and provide better indoor air quality in commercial buildings.

It does this by cleaning a building's indoor air at a nanoscopic molecular level, enabling the building to use far less outside air ventilation while improving indoor air quality.

The HLR 1000E-M is fully compliant with ASHRAE Standard 62.1 Indoor

Cartridges slide into the cartridge bank



Air Quality Procedure (IAQP). It removes the following indoor air contaminants: carbon dioxide, volatile organic compounds (VOCs), and aldehydes. It also removes contaminants brought in from outside.

For more information, download the spec sheet at ncilink.com/HLR1000.

DANFOSS COMMERCIAL COMPRESSORS

Danfoss has added new 8.5-ton and 11-ton variable-speed compressors with intermediate discharge valves to its VZH range. The new compressors create efficiency opportunities for chiller/rooftop units and data center air conditioners.

They feature intermediate discharge valves (IDVs), which prevent over-compression losses that compromise efficiency in under part-load conditions. This results in significant improvement in integrated efficiency scores. Efficiency is further improved with state-of-the-art permanent magnet motors that help reduce power consumption under all operating conditions.

Currently, VZH compressors are approved for use with R-410A refrigerants.

For more information, visit ncilink.com/VZH.



By Mike Weil

Small Steps on the Path to Performance

Near the headwaters of the West Branch of the Susquehanna River lies the Pennsylvania Borough of Northern Cambria – a one-time logging community that became a major mining area with the discovery of bituminous coal in the 1890s.

It is here, in the late 1940s-early 1950s that Andrew Brletrick's grandfather started a Plumbing/HVAC company. His grandparents, Andrew and Mary Kupetz, started the business with very little capital.

In fact, Kupetz didn't even have enough money to buy a truck, so he used an old funeral hearse, that he

fixed up, as the company vehicle.

For 40 years Kupetz ran the business, serving customers, raising a family, and working hard to keep up with the changes happening in the U.S. during those years. Back then new construction was king.

Eventually the Kupetz children grew up and chose not to enter the business. Instead they sought other careers and began starting families of their own. His daughter married and eventually, her son Andrew Brletrick, began working with his grandfather while he was in high school.

Brletrick headed off to college, earned his degree in biology from In-

diana University of Pennsylvania, but later thought better of that and came back to work for his grandfather.

"I decided that biology wasn't my thing. There weren't any real jobs in the area for a biologist unless I went into teaching, and I didn't think that teaching was my thing either," Brletrick says.

"By the time I graduated, my grandfather was in his early 70s and he was ready to retire. I hated to see all his hard work go to waste, so in 1990, I bought him out and found myself in the HVAC business for real."

SOME STATISTICS

In 1990, George W. Bush was president of the U.S., the Hubble telescope was launched into orbit, Nelson Mandela was freed from his 27-year imprisonment in South Africa, Iraq invaded Kuwait, and the Cold War finally came to an end.

In Northern Cambria, Andrew Brletrick took his newly acquired company and began formulating plans for the future. He changed their focus away from new construction because making money in that business was difficult. He worked hard to become a service and replacement company and 25 years later the company remains so focused. In 2018, Kupetz Plumbing and Heating achieved \$350,000 in gross sales.

"We are a small company," Brletrick says, "but we are driven to be the best in the HVAC service business in our area."

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The Kupetz Crew (From left to right): Dustin Kuzar, Nate Martin, Ken Thomas, and Andrew Brletrick.



Besides himself, Kupetz's employs three field co-workers and a part-time office manager to help with all the paperwork and bookkeeping. The company fields four vehicles – one service truck, one four-wheeler service truck for the hard-to-reach areas in mostly rural Northern Cambria (as well as for use when the tough winter snows fly), a transit truck, and a standard pickup for delivering product and hauling.

Today the company operates mostly in the residential marketplace (90%) but does keep a foothold in commercial (10%) as well. Brletrick says there is a small percentage of the residential business that is new construction, but his company remains focused on service and replacement.

"Much of our work is in the hydronics arena," he says. "So, we work with hot water and boiler equipment (Bradford White and Buderus) for heat, and many non-ducted mini-split systems (Mitsubishi). We also sell and install American Standard heat pumps, Waterfurnace geothermal systems, and for those cases when gas-fired forced air is the answer, we use ThermoPride HVAC equipment."

KEYING IN ON TRAINING

To attain his goal of being the best HVAC service contracting firm in his marketplace, Brletrick keys in on training for himself and his team.

"We do a lot of different things, from going through manufacturer-based programs to training through our local wholesale distributors. Plus, I hold hands-on training with my guys weekly. I don't like a week to go by without some kind of



Andrew Brletrick

training," he explains.

When he does the training, Brletrick says he likes to go over issues encountered in the field – things like duct systems not performing properly.

"We'll go over the static pressure measurements and air rise measurements, voltage, and other readings that I took, and then diagnose the system together. I like to see whether or not they come to the same conclusions I did, and then talk about why. I think that works better in a lot of cases than being lectured to or reading a book. Hands-on is always the best training," he says.

"I also like to send the guys out for training when I can. We found the very best technical training we receive is from National Comfort Institute (NCI). It is from NCI that I learned the power of measuring statics and diagnosing systems. It is also where I became certified in Combustion Safety and CO."

Brletrick says that he also has a tech certified in combustion through NCI

and is working on getting the others to class as well. "One thing I know for sure – much of the combustion training available in the industry isn't very good. The classes taught by NCI's Jim Davis are among the very best."

Brletrick himself has attended NCI's commercial and residential air balancing classes, system redesign, and is certified in CO Safety and Combustion.

A DIFFERENT APPROACH

The Northern Cambria marketplace is a small one, but according to Brletrick, his company is busy all the time. Because of its small size, Kupetz must run fast and hard to keep up with all the work, which Brletrick says comes in from word-of-mouth recommendations by his customers.

"We have a solid reputation here and have to run on all cylinders quite a bit. We are so busy, I don't actually go after air upgrades like I should. My approach to performance-based contracting is to make sure that every system we come into contact with is operating to factory specifications."



Kupetz technician Nate Martin conducts combustion testing on a residential boiler.

The key is that the Kupetz field team static pressure tests every system onto which they install equipment. If something doesn't check out right, they find out why and offer the customer choices.

Their test instruments of choice include Dwyer manometers to test draft; Testo wireless thermometers to measure subcooling, superheat, and air rises; and Bacharach analyzers.

"In all the years we've been in operation," Brletrick says, "I have yet to run into static pressure test holes in any of the HVAC systems that we didn't install. In terms of selling air upgrades, our approach is different from what NCI teaches. Simply stated, I only go after upgrades when called in to solve a problem.

"For example, when a customer has a no-heat problem and we find that the three-year-old limit switch is fried, I try to discover why. By measuring the system airflow and temperature rise, I find that the limit is fried because the Delta T is off the charts. That means we need to increase airflow, maybe cut down the nozzle size, or something else, and then have a discussion with the customer – providing him or her with options.

"Many times, during that discussion phase, I get that look from customers. That blank deer in the headlights look. Like, 'why hasn't anybody talked to me about this before.'

"That opens the door for us to talk about true performance and what we do to help them achieve it. So, that is the way that I approach the air upgrades. And it leads to more work for us."

The biggest challenge the technicians at Kupetz Plumbing and Heating encounter is that customers do



Senior Tech Dustin Kuzar performs a static pressure test on a geothermal unit.

not understand airflow or what Andrew Brletrick and his team are talking about.

"Nobody else in our market talks about airflow," he says. We need to find a way to make things understandable for the homeowners."

Brletrick doesn't use the ComfortMaxx™ software – mostly because he and his team are well-versed using other platforms. They use their software to show what system imbalances look like—including lack of returns, wrong-sized ductwork, and airflow issues. They own and use airflow hoods and, though right now Brletrick doesn't have homeowners take the reading with him (something he hopes to incorporate), he shares real numbers to help customers visualize the issues.

LOOKING TO THE FUTURE

Andrew Brletrick says he looks to continuing his journey down the path to performance. He says he knows he must find the time to continue his training and that of his team. He knows that High-Performance Contracting is the way of the future. And, he says that requires

even more training and education.

Which means renewing not only his own NCI certifications, but getting his other technicians to classes as well.

"The first step is to understand and always practice HVAC fundamentals," he explains. "Especially since so much of the training out there is like drinking from a firehose – too much information delivered too quickly can be overwhelming. Understanding the fundamentals first makes all the difference in advanced training.

"In the end, no matter where you start out," he concludes, "it's important to keep trying to learn something new every day. It doesn't matter if it is by reading, going to a seminar, or job shadowing somebody.

"Just try to make every job a little bit better once you get your foot in the door. Education is huge. I firmly believe that. I don't think we do enough of it in the industry."

Congratulations to **Kupetz Plumbing and Heating**, Northern Cambria, PA, for being *High-Performance HVAC Today's* January 2019 Contractor Spotlight recipient. NCI



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Think you know airflow? Think you know carbon monoxide safety? Think you know how to solve your customer's comfort issues? Be sure. Don't guess. Find the training and expertise you need from the National Comfort Institute (NCI). Only at NCI will you find certification courses like Duct System Optimization and Combustion & Carbon Monoxide Safety, taught by leaders and innovators in the HVAC industry. Find out why NCI says "If You Don't Measure, You're Just Guessing!™" Visit the link below or call 800-633-7058 to find classes near you.

Upcoming 2019 NCI Training Schedule



Airflow Testing & Diagnostics and Refrigerant-Side Performance Bundle

Jan 22-23: Los Alamitos, CA

Airflow Testing & Diagnostics

Jan 22: Los Alamitos, CA*

Refrigerant-Side Performance Certification Program

Jan 23: Los Alamitos, CA*

Duct System Optimization & Residential Air Balancing Certification Program

Jan 22-24: Pittsburgh, PA

Jan 22-24: Sacramento, CA

Feb 5-7: Tampa, FL

Feb 12-14: Los Alamitos, CA*

Feb 19-21: Austin, TX

Mar 5-7: Cincinnati, OH

Residential HVAC System Performance & Air Balancing Certification Program

Jan 29-30: Phoenix, AZ

Jan 29-31: Houston, TX

Feb 12-14: Columbus, OH

Feb 19-21: NYC, NY

Feb 26-28: New Orleans, LA

Feb 26-28: Seattle, WA

Mar 5-7: Salt Lake City, UT

Mar 12-14: Kansas City, KS

Commercial Air Balancing Certification Program

Jan 15-17: Minneapolis, MN

Jan 29-31: Baltimore, MD

Feb 5-7: Dallas, TX

Feb 12-14: Mobile, AL

Feb 19-21: Las Vegas, NV

Feb 19-21: Los Alamitos, CA*

Commercial System Performance Certification Program

Jan 8-9: Los Alamitos, CA*

Mar 19-20: Houston, TX

Combustion Performance & Carbon Monoxide Safety Certification Program

Jan 7-9: Cincinnati, OH

Jan 15-17: San Antonio, TX

Jan 22-24: Charlotte, NC

Feb 5-7: St. Louis, MO

Feb 12-14: Richmond, VA

Feb 19-21: Atlanta, GA

Mar 5-7: New Jersey, NJ

Mar 5-7: Los Alamitos, CA*

Mar 12-14: Philadelphia, PA

Optimize Economizer Performance with Certification

Jan 10: Los Alamitos, CA*

* Subsidized NCI training offered by Southern California Edison

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Summit Week 2019



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

HIGH-PERFORMANCE HVAC LIVE

NCI's High-Performance HVAC Summit has become the gathering place for Performance-Based Contractors™ from across North America. It's the only event of its kind completely focused on selling and delivering High-Performance HVAC systems.

This conference is open to the entire industry. Summit is a welcoming gathering of like-minded people who are open and willing to share with their fellow performance-based professionals.

This year we feature a special focus on the entire High-Performance sales and delivery cycle, both in our General Sessions, and in our Breakout Workshops.

Each workshop will concentrate on one of the key elements of the process: Lead Generation, Lead Turnover and Setting The Appointment, The Sales Process, Handoff to Your Installation Team, and Selling High-Performance Service Agreements.

This year's breakout sessions have been extended to an hour and a half long to allow for more interactive learning. Some of the workshops even feature hands-on learning with live equipment and test instruments.

And You Won't Miss A Beat!

Summit's unique format is designed to make sure you are able to take in every single session without missing anything. Also, when you register multiple team members from your company, you can request to attend sessions as a group, or split up for maximum interaction with your fellow performance-based contractors – it's your choice!

Visit the Summit Week Website at GoToSummit.com to reserve your seats for what is shaping up to be the best Summit yet. Seats are limited this year and going fast, so don't delay, register for Summit 2019 today - and take your High-Performance HVAC business to the next level!



SPECIAL EVENTS

NCI Partners Reception and Tradeshow: Our Partners help make 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 2-part event where each participant can propose one or more ideas in the areas of lead generation and sales. Don't forget to bring your ideas and \$20 entrance fee. The best ideas split the pot for great 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 Performance-Based HVAC contractors. You may be one of them!

MEMBER
NCI
REWARDS



Breakout Sessions & Speakers

Generate High Quality Leads With Performance Testing

Speakers: Mike Hartman and David Richardson

Most homeowners (and competitors), are unaware that the average HVAC system performs at 57% efficiency. Static pressure testing and a few other quick measurements during service and maintenance visits are the best way to expose these poorly performing systems. Learn how to share this critical information with your customers to help



Mike Hartman,
Thomas E. Clark, Inc.

them discover and understand the hidden problems that rob them of the comfort and efficiency they should be getting!

Done right, a few simple tests will generate high quality leads with virtually no competition and very high conversion rates. In this highly interactive hands-on session, Mike and David will demonstrate proper testing techniques and how to explain test results, gain customer interest, and hand-off the lead.

Turn High-Performance Leads Into Appointments

Speakers: Nancy McKeraghan and David Holt



Nancy McKeraghan,
Canco Climate Care

While it's true that "nothing happens until someone sells something", no HVAC service or installation sale is ever made without first setting an appointment. When the customer has been handled well and properly prepared by the office staff, your sales and service team are better positioned to hit a home run during each appointment.

In this session, Nancy and David will share methods high-performance contractors use to ensure their front-line office team consistently creates "wow" experiences for customers that result in more appointments and increased sales.

Performance-Based Selling in 12 Steps: From Test to Proposal

Speakers: Michael Hyde and Rob Falke

A Performance-Based sales call is quite different from the typical industry sales processes that focus on just selling



Michael Hyde,
Hyde's Air
Conditioning

"boxes." When executed correctly, it can be highly effective in closing more sales and delighting your customers. The key is doing the right things at the right time.

In this interactive, hands-on session, you'll learn the 12 essential steps to guide your customer through a performance-based sales visit, from efficient, high-impact testing and diagnostics, to customer engagement, to preparing and presenting a winning proposal.

The Handoff Can Make All the Difference

Speakers: Dawn Vickers-Mroczek and John Puryear

When sales closes a job, the next step is to get it installed. Do your install guys "roll their eyes" when they get the "work order"? Are they getting the right information to



Dawn Vickers-Mroczek,
GV's Heating &
Cooling, Inc.

insure a successful and profitable completion? The handoff can make or break the quality and profitability of your installations.

Dawn and John will take you through each step of a well-oiled process to minimize frustration, reduce mis-steps, and ensure success for all. Discover how a sales team and installation team can better communicate and work together to produce amazing High-Performance System installations.

Sell High-Performance Maintenance Agreements

Speakers: Jim Ball and Tom Johnson



Jim Ball,
Ball Heating & Air
Conditioning

Maintenance agreements are the lifeblood of every HVAC service and replacement business. The long-term relationship established with your customers provides a steady income stream that leads to greater business stability and future value.

In this workshop, Jim and Tom will share ways that they have turned their service teams into cash-generating machines through the implementation of strong performance-based maintenance agreement programs.



Reserve Your Seat Today!

Visit GoToSummit.com to find out more and to register, or call NCI Customer Care at 800-633-7058

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Summit Week 2019 SCHEDULE OF EVENTS

MONDAY, APRIL 15

9:00 am - 4:00 pm	Goodman Business Planning Bootcamp
4:30 pm - 5:30 pm	Summit Orientation Meeting - All Welcome!
6:00 pm - 8:00 pm	Welcome Reception <i>Sponsored by Goodman</i>

TUESDAY, APRIL 16

7:00 am - 9:00 am	Breakfast and Interactive Opening Session
9:15 am - 10:45 am	Breakout Session 1 - Workshops
11:00 am - 12:30 pm	Breakout Session 2 - Workshops
12:30 pm - 1:30 pm	Luncheon and General Session
1:30 pm - 3:00 pm	Breakout Session 3 - Workshops
3:30 pm - 5:00 pm	Idea Meetings: Lead Generation and Sales
6:00 pm - 8:00 pm	NCI Partner Trade Show Reception

WEDNESDAY, APRIL 17

7:00 am - 8:30 am	Breakfast & General Session
8:30 am - 9:00 am	State of The High-Performance Industry with NCI CEO, Dominick Guarino
9:00 am - 9:45 am	Special Keynote Speaker <i>Sponsored by Goodman</i>
10:00 am - 11:30 am	Breakout Session 4 - Workshops
11:30 am - 1:30 pm	NCI Partners Tradeshow and Luncheon
1:30 pm - 3:00 pm	Breakout Session 5 - Workshops
3:30 pm - 4:30 pm	General Session: Idea Session Winners and Partner Prize Drawing
4:30 pm - 5:00 pm	Closing Remarks with NCI President, Rob Falke
6:00 pm - 7:00 pm	Sponsor Appreciation Cocktail Reception
7:00 pm - 9:00 pm	Awards Banquet and Presentation Ceremony

THURSDAY, APRIL 18: Post-Conference Training

8:00 am - 5:00 pm	Advanced Combustion Recertification
8:00 am - 5:00 pm	Airflow Testing and Diagnostics
8:00 am - 5:00 pm	EGIA Class: Breakthrough Business Leadership



SERVICE

By Jim Ball

Selling High-Performance Maintenance Agreements

"THIS IS A DIMENSION AS VAST AS SPACE AND AS TIMELESS AS INFINITY. IT IS THE MIDDLE GROUND BETWEEN LIGHT AND SHADOW, BETWEEN SCIENCE AND SUPERSTITION, AND IT LIES BETWEEN THE PIT OF MAN'S FEARS AND THE SUMMIT OF HIS KNOWLEDGE. THIS IS THE DIMENSION OF IMAGINATION. IT IS AN AREA WHICH WE CALL THE TWILIGHT ZONE."

— ROD SERLING

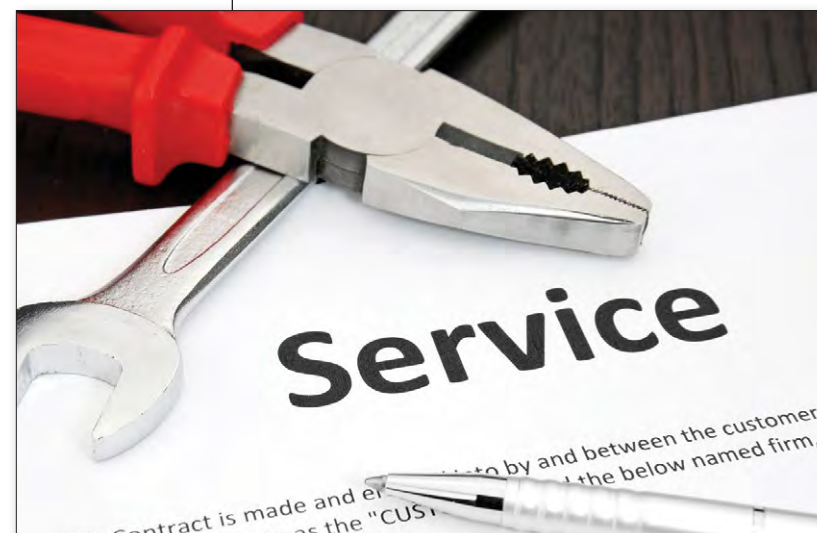
In the HVAC Industry, we are not traveling in another dimension. We are traveling along a path that leads to true customer comfort and system performance. So imagine, if you will, an area we don't call the Twilight Zone, but do call the High Performance Zone. In it you find the following:

- Your company has over 2000 'Season Ticket Holders / Raving Fans'
- On your mildest day of the year, you'll get to be in at least 20 customers' homes

- You have control of your work schedule
- Your customers can't receive a comparable maintenance plan anywhere else
- You get the satisfaction of proving that your work is making a difference in HVAC equipment performance, customer comfort, and well being
- Your customers don't want to have your competitors in their homes
- Most of your new customers come from the referral of your 'Season Ticket Holders'
- The weather doesn't make or break your business
- You have year-round steady income.

If you hear someone say these facts are true about their business today, you might want to call their bluff. As a second-generation business owner, I feel like I have heard it all. When I hear contractors claim they have a salesman closing 80% and selling \$4 million in residential installations, something smells.

But the fact is, High-Performance contracting is a real thing at my company. It wasn't always that way. Ball Heating and Air was started by my dad, Don Ball, in 1964. Dad was 23 years old then and he worked mostly for general contractors.



SOME HISTORY

In those days when you finished the install, you hoped the phone didn't ring and the general paid you before you started working on the next house.

Dad says tracking down those contractors to get paid wasn't an easy living. Sometime in the mid 80's, he refocused the company on service and maintenance work.

In the 1980s our business was very heavily driven by the weather, something many contractors who were around said held true for them as well.

If you have a hot summer in South Mississippi, you will have a great year. Fact. Business just comes to you, it falls in your lap. You can be the worst business person and still survive.

Sales supposedly covers a world of business sins. No profit? Just sell more. Our family planned vacation around the summer months. We knew there would be late hours and late phone calls. It didn't matter much to us because the business was doing well.

But every so often the weather didn't cooperate, and what we thought was good wasn't so good after all.

A business that we once loved and were proud to have our name on now became a noose around our necks. We wound up borrowing money to make payroll or to make the next payment to our suppliers. Somehow my Dad had the grit to survive, and we were blessed with more good years than bad.

So goes the story of the early days. I imagine many of you and your families have the same or similar story today.

THE MOVE TO MAINTENANCE AGREEMENTS

In the early 1990s my dad began working with Ron Smith to learn more about the power of maintenance agreements. So Ball Heating began encouraging customers to become maintenance agreement clients. We promised to take care of their systems for fewer breakdowns and that would provide longer service life.

I don't know exactly how a presentation from Ron Smith convinced my Dad to commit to the Dominant Market Share program. But I have heard Dad say Ron talked about going to the mailbox on July 1st and taking out a million dollars of maintenance agreement renewals. This was in the 80's when a million was a lot of money.

Smith, who some have dubbed the father of the HVAC Service Agreement, worked with Ball Heating and Air Conditioning to set up a maintenance department, develop a service agreement plan, and train the salespeople to sell it.

So, encouraged by Ron's model, Ball Heating and Air changed and became committed to the maintenance program. Both my father and I have an agreement on our own home systems.

THE HIGH-PERFORMANCE CONNECTION

The last 26 years since we began the maintenance program haven't always been all peachy keen, but our story has changed. Our lifestyle has improved.

Then we joined National Comfort Institute (NCI) in 2014 and began working toward becoming a Performance-Based Contracting™ organization. This challenged us to demand more of ourselves and to provide

more value to the customer.

Our maintenance program moved forward into the performance-based platform. The challenges that come along with performance-based maintenance programs are unique, but the results assure your customer is getting the best value.

I think in our market we aren't only the most expensive, but the highest quality too. We typically are 25-40% higher than our competitors when we walk in. By the way, Ball Heating and Air Conditioning maintenance renewals are at 95%.

We currently have more than 2,500 agreements (which we call ESAs – Energy Savings Agreements).

AN ENGINEER'S APPROACH

As a mechanical engineer, I learned early in school about 'the perfect test world' and the real world. A little thing called friction always frustrated my projects and negatively affected my grade as well. I was taught to expect friction and to make sure your results had a way to include friction in the end performance.

Much like the HVAC systems we install today, you can never get a system to operate at 100% efficiency. The builders and HVAC manufacturers want to base our customers' decisions on the perfect test world, instead of the real world.

You and I know better.

The hard part is making sure our team and our customers do too.

HOW OUR MAINTENANCE AGREEMENT PROGRAM WORKS

Our maintenance agreement program includes doing a system evalu-

ation by taking static pressure readings before and after we do our work. In other words, we test-in and test-out. I realize that isn't enough, so we are working on adding more of the high-performance practices to our maintenance agreement program.

Another thing is friction shows up all over the place, not just in the HVAC system itself. A maintenance program provides your company with many opportunities to take care of your customers and exceed their expectations. However, there is some friction you need to know about and plan to resolve along the way.

Oh, and by the way, this is real-world stuff. We aren't living in the Twilight Zone. And we can absolutely prove to our customers that we

MEET JIM BALL AT NCI SUMMIT 2019

High-Performance HVAC Summit 2019 is happening April 15-18 in Orlando, FL. Jim Ball is one of five Performance-Based Contractors™ presenting how they bring High-Performance into their companies and their marketplace.



Jim, who is general manager of Ball Heating and Air Conditioning, Biloxi, MS, will discuss how his team have become so much better through implementing a strong performance-based maintenance program.



Come meet Jim and network with your peers in Orlando.

Learn more about the Summit 2019 program at GoToSummit.com.

Register today. Questions? No problem. Call 800-633-7058 and talk to your customer care representative.

After Summit ends, stick around for our Post Show Training classes. Click ncilink.com/19PST for details.

are delivering everything we promised them. Competitors sell equipment like it's the final answer. The truth is the equipment is just part of

the equation. The High-Performance Zone is where we now live and work. And our customers are better off because of it. NCI

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The Right Tools For The Job

Every experienced field person knows the right tools can make all the difference - whether it's their hand tools or the test instruments they use in service and installation. The right instrument helps make testing consistent and efficient. It reduces second guessing and repeat testing when you feel you can't trust your readings.

This article will introduce you to many of the specialized instruments used in High-Performance testing and diagnostics. We'll also take a look at suggested tool lists for each of your field people, both in a residential and light commercial HVAC company.

The exact instruments you buy will depend on some factors that are unique to your company. For example, your needs will vary with whether your service technicians perform full diagnostics or pass on leads from basic testing, or whether your installers start up their own systems or you have start-up techs.

RECOMMENDED TEST INSTRUMENTS

■ **Analog or Digital Manometer:** Liquid-filled manometers have been around for centuries. These devices are very accurate and stay

calibrated virtually forever, but they are cumbersome and can be messy to use. They're still used on commercial work, especially in stationary applications.



Other analog manometers, also known as Magnehelic® Gauges, have been around for decades. They're very durable, they hold their calibration well, and provide a direct static pressure reading through a dial gauge.

The downside is they need to be level to get accurate readings - often difficult to do in an attic or crawl space. A zero to 1-in. water column (WC) model is ideal for most residential and light commercial applications.

Expect to pay between \$150 and \$250 for a good Magnehelic® kit depending on what accessories you want. A good kit will include ev-



everything you need to drill and cap test ports and check static pressures at key places in a system.

High-quality digital manometers are also a great option. Some are extremely accurate, have multiple pressure ranges, and are very durable. Digital gauges do not need leveling - a plus in tight spaces. A digital manometer kit costs between \$150 and \$250 depending on what's included. Whatever manometer you buy, make sure you have the right pressure tip, drilling accessories, and hole plugs with your gauge at all times.

■ **Digital Hygrometer:** A digital hygrometer is very handy for measuring wet bulb temperatures when testing in cooling mode to measure enthalpy. As you learn to test enthalpy change when calculating delivered BTUs, you'll find accurate wet bulb measurements are critical.

Digital hygrometers typically range from \$100 to \$200.

NCI tests require wet-bulb readings to be recorded to the nearest tenth of a degree. Some hygrometers lack accuracy and can't be calibrated.

Several manufacturers make accurate and durable instruments that display temperature, RH, and wet-bulb temperature.

Some air multimeters have built-



in high-quality humidity sensors. Be sure to look at response time when it comes to wet bulb testing - especially across multiple locations simultaneously. For these tests you will need several fast responding hygrometers.

■ **Digital Refrigerant Gauges:** With today's increasingly sophisticated higher efficiency air conditioners and heat pumps, analog gauges just don't cut it any more.



If your techs own them, it's not a bad idea to hang onto to them as they may come in handy in a pinch, but your field people's go-to instruments should be digital.

There are many benefits to digital manifolds. One is you can use them on a spectrum of systems with different refrigerants, ranging from traditional R-22, 410A, 134A, and more.

Today's manifolds include programs for 40 or more different refrigerants. They come in many configurations and degrees of technology. All of them automatically calculate Su-

perheat and Subcooling, but some are more accurate than others.

Some digital manifolds are fully computerized, and can perform very sophisticated diagnostics. Many now include wireless technology and applications for mobile devices.

The key is getting the right tool for the person using it. It's usually a good idea to get something with a few more features than you think you may need, but there is no need to buy the top of

the line with all the bells and whistles - especially when first starting out.

Technology is moving so fast that you may want to move up to something better in the next year or two that outperforms today's top-of-the-line instruments.

■ **Combustion Analyzer:** A high-quality combustion analyzer can be used for CO safety checks, combustion diagnostics, and precision burner adjustments. Residential/light commercial combustion analyzers range in cost from \$600 to \$1,500, depend-

Catch up on all the installments of this series:

Part 1: What is High-Performance HVAC and Why Do It? ncilink.com/ABCs-1

Part 2: Is It the Right Fit for Your Company? ncilink.com/ABCs-2

Part 3: Five Steps for Becoming A Performance-Based Contractor. ncilink.com/ABCs-3

Part 4: Five More Steps to Becoming a Performance-Based Contractor. ncilink.com/ABCs-4

Part 5: Your Investment in Performance. ncilink.com/ABCs-5

Part 6: The Five Keys to Quality Training. ncilink.com/ABCs-6

ing on quality and accessories.

An important feature to look for in a combustion analyzer is fast response to CO and oxygen level changes. When you look at the specs, check out the pump volume. The more volume it can pull, the faster the analyzer will respond to changes. At minimum it should pull at 400 cc/min. A better volume is 700 cc/min.

A high-range CO sensor is also important – the higher the range, the more likely it will quickly bounce back from a very high reading in a flue. Look for a minimum high range of 4,000 ppm. 8,000 ppm is better.

Another key feature is calibrated replacement sensors. These sensors make it possible to avoid sending the instrument back to the manufacturer to replace a sensor. This will save you both time and money.



■ **Draft Gauge:** Draft gauges are important instruments for troubleshooting combustion systems. While there are digital gauges available, an inexpensive, extremely durable Dwyer 460 Air Meter does the best job at a cost of less than \$50.

Every service technician should carry one of these on their truck with their analyzer. Remember, blowing smoke up a flue bonnet does not verify adequate draft or venting.

■ **Airflow Capture Hood:** A quality flow hood costs between \$2,500 and \$3,000. There are so-called residential or low-flow hoods on the market for \$1500 or less, but they typically lack repeatability and accuracy.

This is the one instrument you shouldn't cut corners on. It will become your go-to instrument and you'll need to trust your readings.

A good digital hood should be able to consistently and quickly measure from 30 to 2,000 CFM on both sup-

ply and return grilles with an accuracy of +/- 3%.

Hoods typically come with a 2 ft. X 2 ft. skirt (opening size). Different size skirts used mostly in commercial air balancing are typically available as accessories. Some hoods offer features like wireless communications and datalogging.

The key is to choose an instrument that best fits how your company will use it. For example, a residential salesperson might be better off with a simple hood he or she can use to quickly capture one or more airflows to show the customer where the biggest issues are.

Your balancing technician may benefit from a hood that captures readings easily and helps quickly navigate the balancing process.

If you're buying your first hood, start with a good basic model, so you can figure out what features and benefits best suit your company and each individual that will be using it.



■ **Digital Anemometer:** There are numerous digital anemometers on the market from a variety of manufacturers. Prices range from \$300 to over \$2,000 depending on accuracy, repeatability, and features. The tool of choice here is a hot wire anemometer as opposed to a rotating vane model. Hot-wire anemometers stay calibrated longer since there are no moving parts to wear out.

It's also easier to perform accurate traverses with a hot wire as the measurement is taking place over a smaller area with little or no interference from the instrument. I recommend using a digital multimeter that incorporates a highly accurate anemometer, a digital manometer, and an accurate humidity sensor. This instrument can quickly pay for itself by taking hours of work out of traversing ducts and grilles since it does all of the tedious calculations for you at the push of a button.

■ **Infrared Thermometer:** An infrared thermometer is a must-have tool for diagnosing system performance. It can be used for a variety of diagnostic tests including measuring grille temperatures, calculating wall and ceiling R-values, finding missing insulation, identifying thermal bypasses, and more.

The quality of infrared thermometers can vary with prices ranging from \$100 to more than \$500. Prices typi-

cally depend on the field of view.

Field of views vary from 4:1 to 30:1. The higher the number, the tighter the circle the infrared sensor will focus on.



This is very important when you're shooting a grille 18 feet up in the air on a cathedral ceiling. The higher the field of view, the more likely you'll be measuring just the grille surface temperature. Make sure the thermometer has a laser pointer so you can precisely target the spot you're trying to measure.

■ **Ultrasonic Tape Measure:** While you can measure rooms with a tape measure to calculate heating and cooling loads, this device, typically available with a laser target for less than \$50, speeds up the process and helps you project a more professional image with your customers. These devices take practice to get reliable numbers, but allow quick, reliable room measurement.



■ **Digital Tachometer:** If you're installing or servicing belt-driven packaged equipment, a digital non-contact tachometer allows you to accurately measure and adjust fan speed.



■ **Remote Clamp-on Amp Meter:** When adjusting pulleys to increase airflow on belt-driven blowers, it's critical to check amp draw so as not to overload the motor. To get accurate airflows and amp draw, this must be done with the blower compartment door on. A one-piece clamp-on meter won't work in this scenario. A clamp with a 3-ft. lead is needed to perform the test. Remote clamps come as plug-ins or standalone units ranging from \$100 to \$300.

THE RIGHT TOOLS FOR EACH FIELD ROLE

Depending on their role, each of your field-based people will need a different set of tools and instruments. The following is a breakdown by role:

■ **Salesperson/Comfort Consultant:** While your salesperson can start with a few basic tools, eventually they will need the instruments below in order to properly test and diagnose air distribution issues.

Here's a list of tools and instruments to take on a diagnostic sales call:

- Manometer kit with pressure tip, drill bit and stop, and hole plugs
- Airflow Capture Hood
- Digital Anemometer
- Digital Hygrometer
- Infrared Thermometer
- Pocket Thermometers



- Distance Measurement Device
- CO Analyzer, portable CO monitor, or NSI Low-Level Monitor
- Cordless Drill
- Basic Hand Tools.



■ **Service/Maintenance Technician:** A service tech should carry the following instruments to identify and diagnose performance, comfort, and safety issues:

- Manometer kit with pressure tip, drill bit and sheath, and hole plugs
- Digital Hygrometer
- Infrared Thermometer
- Pocket Thermometer
- Remote Amp Meter Clamp
- Digital Tachometer (light commercial)
- Combustion Analyzer
- Draft Gauge.

■ **Installer:** Depending on whether your installers perform their own startups, they should carry some or all of the following instruments and tools to test their installations:

- Manometer kit with pressure tip, drill bit and stop, and hole plugs
- Digital Hygrometer
- Infrared Thermometer

- Remote Amp Meter Clamp
- Digital Tachometer (light commercial)
- Combustion Analyzer
- Draft Gauge.

■ **Diagnostic/Test and Balance Technician:** Whoever does the final testing and balancing of your residential and/or light commercial installations should carry the following tools and instruments:

- Manometer kit with pressure tip, drill bit and stop, and hole plugs
- Airflow Capture Hood
- Digital Anemometer
- Digital Hygrometer
- Infrared Thermometer
- Pocket Thermometer
- Remote Amp Meter Clamp
- Digital Tachometer (light commercial)
- CO Analyzer or Low-Level Monitor.

WHERE THE RUBBER MEETS THE ROAD

Some of the most important tools in each of your employees' arsenals are the software, forms, reports, and procedures to guide them and help them document their work and the final performance results.

This is where the rubber meets the road. It's what makes Performance-Based Contractors different from other typical contractors. Documented results are what sets you apart from the box-sellers and parts changers out there.

Every one of your field-based people should carry the basic test reports, both in digital and paper form (always good to have a backup).

The tools and instruments men-

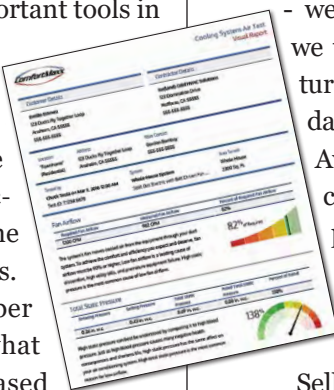
tioned in this chapter are available from a number of sources. NCI has taken a lot of the guesswork out of buying the right tools that are durable enough for everyday use and will pay for themselves quickly. We also make these tools available through our online store.

Tip: Don't buy any tools or instruments until you've been trained in the disciplines that require those tools. Many students have regretted not waiting until after the training and bought the wrong tools.

Once you truly understand how an instrument will be used, you'll be able to make a more informed buying decision on the best tools for your specific needs.

Take it from someone who knows - we have a closet full of tools we thought would be great but turned out to be unusable in day-to-day real field testing. Avoid the temptation to buy cheap tools. You'll pay the price over and over in lost time and frustration.

Next month we will focus on the Performance-Based Selling Process, and how to avoid dated hard-close techniques by educating customers through the buying process. 



Dominick Guarino is publisher of High-Performance HVAC Today magazine and CEO of National Comfort Institute, Inc. He can be reached at domg@ncihvac.com






Your Support Team on Your High-Performance Contracting™ Journey

Your key to success in Performance-Based Contracting™ is a strong support network – always there when you need it. NCI helps its members overcome the typical hurdles associated with implementing the measured performance approach.

Membership Options:

Turbocharge your membership with added learning opportunities and financial incentives.

	 High Performance HVAC Alliance	 Learning Excellence Premium Upgrade	 Learning Excellence Live Upgrade	 Learning Excellence Online Upgrade	 Membership
Unlimited Toll-Free Support	✓	✓	✓	✓	✓
High Performance Talk Discussion Forum	✓	✓	✓	✓	✓
Find-A-Certified-Professional Lead Generator	✓	✓	✓	✓	✓
i-NCI: Mobile-Friendly Technical & Sales Tools	✓	✓	✓	✓	✓
Hundreds of Technical & Marketing Downloads	✓	✓	✓	✓	✓
Members-Only Newsletter	✓	✓	✓	✓	✓
Article Library Featuring Technical & Business Articles	✓	✓	✓	✓	✓
Live & Online Training and Conference Discounts	✓	✓	✓	✓	✓
Member Rewards NCI Training Bucks on Purchases	15%	15%	15%	15%	5%
Training Incentive Partner Program Dollars	Maximum	Maximum	Maximum	Maximum	✓
NCI Online Store Discounts	✓	✓	✓	✓	✓
ComfortMaxx Air™ - Airflow Testing Software	✓	✓	✓	✓	✓
Unlimited Online University Courses	✓	✓	✓	✓	✓
Unlimited Webinar Access	✓	✓	✓	✓	✓
Bonus Annual NCI Training Bucks Earned	\$4200	\$4200	\$4200	\$1200	✓
ComfortMaxx Pulse™ - Air & BTU Testing Software	✓	✓	✓	✓	✓
ComfortMaxx Verify™ - Full System Testing Software	✓	✓	✓	✓	✓
Free Print Subscription to High Performance HVAC Today	✓	✓	✓	✓	✓
One Paid NCI Summit Conference Registration	✓	✓	✓	✓	✓
EGIA Premium Membership	✓	✓	✓	✓	✓
70% OFF 5-Day 2019 Success Week Bootcamp	✓	✓	✓	✓	✓
Monthly Investment:	\$999	\$750	\$450	\$450	\$100



Scan this QR code or call NCI Customer Care to learn how NCI Membership can take your HVAC business to the next level!

Join NCI Today!

The Financing Formula to Closing Larger Sales More Often

Let's face it, it is easy to put your own preconceived notions on your customers. I see this all the time when working with contractors. Often sales people focus more on what they are comfortable with versus the underlying needs of their customer. When it comes to financing, it is important to first understand the different types of homeowners and then follow a methodical financing process to cover them.

Let's explore who your customers are and how successful contractors use financing effectively to upsell and close more sales. Using financing correctly allows you to price right and close the High-Performance HVAC project.

There are three types of customers you need to address:

- Cash customers
- Payment plan customers
- Credit challenged customers.

Nobody likes to write a big check, regardless whether they have the cash or not. The fact is, 75% of all homeowner's live paycheck to pay-

check¹. You cannot tell if someone has money in the bank by just looking at them.

CASH CUSTOMERS

Every sales person has a story about a customer living in a trailer who keeps \$10,000 in their mattress for the project, or the customer who lives in a fancy house or has a fancy car who couldn't afford the project or get approved for financing. This is why it is so important to leave preconceived notions at the door.

By building a selling system using financing, you can help each one of your customer types. Your plan can offer a low monthly payment at 10 years or longer, a no interest no-payment option, or a second look option for low credit scores. With each option offered on every sales call, contractors typically see 20% larger projects and a 30% increased close rate.

The other trap that many sales people fall into is thinking they want customers to pay cash. The fact is financed project transactions on average are up to \$2,000+ larger. Offering a 10-year plus term loan can get the payment to around \$100 per

Best – 18 SEER All Bells & Whistles	Better – 16 SEER Some Bells & Whistles	Good – 14 SEER
\$10,500	\$8,700	\$6,700
\$108 Per month 12 year 6.99% OR 18 months SAC	\$101 Per month 10 year 6.99% OR 12 months SAC	\$101 Per month 7 year 6.99% OR 6 months SAC
Energy Savings up to \$75 Monthly Investment - \$38	Energy Savings up to \$50 Monthly Investment - \$51	Energy Savings up to \$25 Monthly Investment - \$76

Across Retail EGIA's Partner Banks 2002-2018 statistics on over \$6 billion funded dollars of HVAC

Type of Financing	Average Job Financed
No Payment / No Interest	\$6,500
No Interest Equal Payments	\$7,600
Low Monthly Payment 10 YR+	\$10,200

month for the homeowner -- which is often the difference between repairing and replacing the project.

PAYMENT PLANS

Don't feel bad about putting someone into a 10-year loan at a reasonable interest rate because most pay off that loan within 4 years. The low payment simply allows the customer not to feel burdened by a large monthly payment. It also provides the flexibility to pay it off in their own time with tax returns or wage increases.

Also, HVAC done right saves the customer money on their monthly bill and that can often be used to demonstrate a lower monthly investment in a Best, Better, Good scenario.

Sales people, however, often insert their own preconceived notions on low monthly payments with regard to how long a loan they personally would take and at what interest rate.

The better approach is to be methodical and provide the customer choices. After nearly 20 years of training dealers on financing, I find nothing as transformative to the contractor's bottom line as effectively offering low monthly payments.

Even customers with the cash to pay for projects suffer from "cash sep-

aration anxiety." Taking money they worked so hard for out of their savings or checking account can be daunting. Often "sticker shock" can be the difference between closing a smaller project/system repair, or replacing the HVAC system the correct way.

No payment/no interest same-as-cash loans are a great way to give cash customers the ability to defer project costs until their bonus check comes in. When offered in conjunction with low monthly payments, same as cash loans will be about 30% of the mix. Think about how powerful it can be to say, "We can install the project this week and you will have no interest and no payments until 2020."

SECOND-LOOK LOANS

The fact is around 20% of your customers will need "2nd look financing."

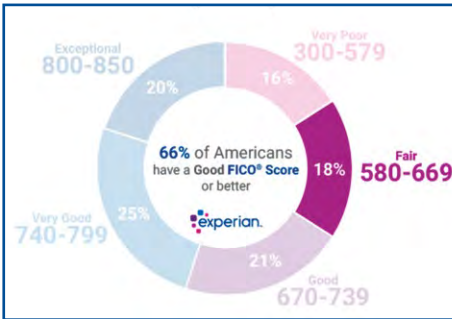
So, if you stop at "First look or 'A' paper" financing options, you'll be giving up a huge opportunity. Many "First look or 'A' paper" providers now have an optional second look on their technology platforms.

Keep in mind, whether you use their built-in option or another second-look provider, you need some preplanning for higher discount fees or get ready to

have a discussion with the customer about a much higher interest rate.

That fact is most of your customers know when they have a credit problem and as a result understand that their options are limited. Do not be afraid to have this conversation with a customer because it can mean an increased approval rate of up to 15%.

Another fact: the top 10% of the HVAC contractors do 80% of all the financed transactions. They know the increased margin allows them to get to higher wages for their employees and money for marketing to drive leads.



18% of all consumers have FICO® Scores in the Fair range (580-669).

Being methodical by offering financing with a low-payment/no-payment option, and using 2nd-look financing is a proven way to grow your business. It's often the gateway drug to a prosperous successful HVAC company.

Eric Howarth is Vice President of Contractor Services, responsible for developing and executing Electric and Gas Industry Association's (EGIA) overall contractor services strategy. He also leads the ongoing development and management of EGIA's Contractor Membership and GEOSmart Financing Clearinghouse. Eric has facilitated over 6 billion dollars in energy efficiency and renewable energy financing through EGIA's extensive network of manufacturers, distributors, utilities, and contractors.



What percentage of homeowners in the US live paycheck to paycheck? *

(That's 3 out of 4 people.)

* CNN Money Findings (1)

NCI WELCOMES ITS NEWEST VENDOR PARTNER

NCI is pleased to announce the latest partner joining our Member Rewards program – **Power Selling Pros** of South Jordan, UT.



Power Selling Pros (PSP) is a customer service training company for home service businesses. They are a coaching partner that helps you become absolutely the best when it comes to customer service – from training your customer service representatives, to helping your field service and installation co-workers create raving fans of your customers.

PSP offers several services that help you become a market leader by teaching you how to create the best experiences for customers. Among them are the following:

- **Power Certification Coaching Program:** one-on-one accountability coaching for CSRs
- **Power Certification HQ:** online training for CSRs and Technicians.

PSP now offers these two services to NCI members who can earn **NCI Training Bucks** when they use them.

Members will earn Training Bucks when they enroll in the PSP Power Certification Coaching Program. They can also earn Bucks by enrolling in the Power Certification HQ.

Click ncilink.com/PSPAudit to schedule a FREE customer experience audit. Not ready to sign up yet? No problem – PSP offers a Customer Service Training Library.

This program is **ONLY available for NCI members who sign up**. Learn more on the PSP partner page (you have to be logged in to the NCI website to access) at ncilink.com/PSP.

WHAT DO YOU KNOW ABOUT CO?

Carbon Monoxide (CO) doesn't mix evenly with air. While it is possible for CO levels at the floor to get high enough to set off an alarm, it will always be higher near the ceiling than the floor.

This is why CO Alarms should always be mounted high, never near the floor. They should usually be placed close to eye level in an area of good airflow.

You can learn more about CO and Combustion Safety, and even register for one of NCI's many certification classes. Go to ncilink.com/co for more details.

By the way, upcoming Combustion Performance and CO Safety Certification classes are as follows:

February 5-7 in St. Louis, MO

February 12-14 in Richmond, VA

February 19-21 in Atlanta, GA.

Go to ncilink.com/ClassSchedule for more information.

MEMBERS TEACH MEMBERS AT SUMMIT '19

One of the things that makes National Comfort Institute's (NCI) *High-Performance Summit* events so special is the interaction between Performance-Based Contractors. This isn't just a peer-to-peer networking opportunity, but also a chance for NCI members involved in implementing performance into their businesses to share what they know with other members.

This year is no different. The five presentations at Summit 2019 are being taught by Performance-Based Contractors. For example:



Mike Hartman, president of Thomas E. Clark, Inc., Silver Spring, MD has been an NCI member since 2005 and knows a thing or

two about how to generate high quality leads with performance testing.

Nancy McKeraghan, who owns Canco ClimateCare, Newmarket, Ontario, joined NCI in 2008. She will share how her company turns high-performance leads into sales appointments.



Mike Hyde, general manager of Hyde's Air Conditioning, Palm Desert, CA has been working on performance in his company since joining NCI in 2003. He is sharing how his company uses 12 steps to sell High-Performance HVAC services to clients.



Dawn Vickers-Mroczek, a comfort consultant in her family's business –



GV's Heating and Cooling, Inc., Glenview, IL – shares her company's processes for handing off jobs from sales closing to installation that reduces frustration and missteps.



Jim Ball, general manager of Ball Heating and Air Conditioning, Biloxi, MS talks about adding performance testing to his maintenance program and how that works in his company.

These instructors will share real-world experiences and help answer members' questions so they too can advance down the path to performance.

Head over to GoToSummit.com to learn more.



2018 HVAC Today Photo of the Year

National Comfort Institute, Inc. (NCI) and *High-Performance HVAC Today* magazine are pleased to announce the 2018 HVAC Photo of the Year! After a tremendous turnout by nearly 100 voters, this year's winner received 68% of the votes!

The grand prize winner is one of the eleven 2018 monthly winners as voted upon by visitors to the HVACToday.com website.

Besides being featured in both the digital edition of the magazine, the website, and on PerformanceTalk, **the Photo of the Year Winner receives the GRAND PRIZE – a FREE registration* to NCI's High Performance HVAC Summit** (up to a \$795 value) in Orlando, FL, April 15-18, 2019.

THE WINNER IS:

Nate Miller, Campbell and Company, Yakima, WA.

Nate's entry appeared in the October 2018 issue and was titled, "Drop Cheek 90 into Split Zone System."

Congratulations to Nate and we look forward to seeing him in April!

* Airfare and hotel are NOT include. Coverage is for full Summit registration only.

MEMBER NCI REWARDS

Training Incentive Partner Program

Convert incentive dollars into NCI Bucks for immediate use to train your Performance-Based Contracting team.

Why is this such a great benefit? Let's face it, training is a big investment in terms of time and money. TIPP is designed to earn incentive dollars toward training through purchases of equipment, products, and services that you already buy from NCI industry partners. So when you do have the time to train your team, the dollars are already banked, ready to be used.

Put your TIPP incentive dollars to work! Call 1-800-633-7058



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Let NCI be Your Support Team on Your High-Performance Contracting™ Journey

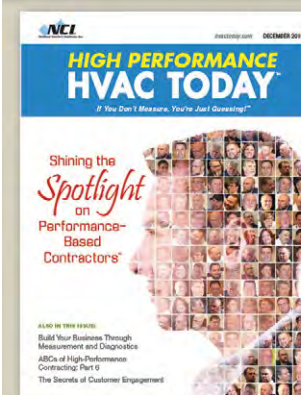
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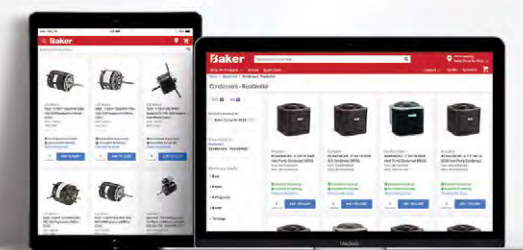
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Eight Reasons Why You Can't Miss Summit This Year



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

Now in its 16th year, National Comfort Institute's (NCI) Summit is the industry event where High-Performance Contractors network, have fun, break bread, learn, and share their goals and dreams.

Whether you're new to High-Performance Contracting™, or a performance veteran, there are many reasons why you should make Summit your main event this year. Here are eight top reasons to make Summit 2019 your destination this April.

1. Network with your fellow Performance-Based Contractors. Summit is the only event in the world where you can get together with so many like-minded High-Performance professionals. Each year, attendees tell us the networking opportunities alone are worth the price of admission. They also say the sessions, breakouts, and other events are a huge bonus.

"EACH YEAR, ATTENDEES TELL US THE NETWORKING OPPORTUNITIES ALONE ARE WORTH THE PRICE OF ADMISSION."

2. Three Great General Sessions. This year our general sessions are jam-packed with fun, interactive meetings, and important messages from NCI leadership. Several guest speakers will also share their secrets to success.

3. Five Breakout Sessions led by successful Performance-Based Contractors will take you through the entire High-Performance cycle, including Lead Generation, Lead Turnover and Setting Appointments, the Performance-Based Selling process, Installation, and High-Performance maintenance agreements.

4. NCI's renowned Idea Meeting with a special focus on Lead Generation and Sales. Hundreds of Summit-goers have told us this is one of

the highlights of the meeting. Many have shared that one or two ideas not only paid for the entire trip, but also helped boost their entire year!

5. Trade Show in General Session space. This is new. You'll have many opportunities to meet more than 20 of our vendor partners and explore their state-of-the-art instruments, software, services, and HVAC products.


6. Win Prizes from Partners and Idea Meeting. There will be dozens of prizes donated by our partners this year. When you visit each exhibitor during trade show hours, you will qualify for the greatest prize drawing ever! Bring a fresh idea or two to the Idea Meeting, and have a chance to share in the cash awards jackpot!

7. Take Pre- and Post-Conference classes, Plus Post-Summit Full Day Recertification classes and Leadership Program. Expand your Summit experience with business workshops and Technical NCI recertification classes. Either way you'll come out a winner with great knowledge and ideas for making 2019 your best year ever!

8. NCI Awards Banquet and Presentations. The culmination of Summit 2019 is NCI's recognition of the top High-Performance Contractors across the U.S. and Canada. We get to celebrate contractors who recently achieved breakthroughs in building their High-Performance companies, and those who have taken their companies to new levels of performance.

Be sure to join us in recognizing these truly special contractors and their organizations.

So don't delay! Secure your Summit seats today, and take advantage of Early Bird Pricing at www.GoToSummit.com.

We expect sellout attendance this year, so be sure to reserve your Summit seats and start planning your travel to what will surely be the best High-Performance HVAC Summit ever! 



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Airflow Testing Accuracy in the Field

Advances in airflow instruments and technician certification have increased the accuracy of field airflow measurement in recent years. Test methods are now simplified through advancing instrument technology, and skills are improving because of a steady rise in field airflow testing throughout the HVAC industry.

Speakers: Rob Falke, President, National Comfort Institute; Ben Lipscomb, PE, Engineering Manager, NCI

Monday, Jan. 14, 1:00 PM - 2:00 PM
Location: B315

What it Takes to Get an Installed HVAC System to Operate at Equipment Rated Capacity

Most believe it's extremely difficult to optimize the performance of an installed HVAC system. Fortunately, developing your skill and ability to discover system defects may be easier than you think. Once the defects are identified, improving system efficiency may be more straightforward than you ever imagined.

Speakers: Rob Falke, President, National Comfort Institute; Ben Lipscomb, PE, Engineering Manager, NCI

Tuesday, Jan. 15, 1:00 PM - 3:30 PM
Location: B312

Quick Guide to Applying Fan and Pump Laws

Learn about this quick guide to remember and apply pump and fan (affinity) laws in your daily work. This seminar will provide more than a dozen examples of applications using fan & pump laws. Understanding these laws enables test & balance, commissioning, and facilities maintenance professionals to apply and solve problems on a daily basis.

Speaker: Scott Fielder, Director, National Balancing Council

Monday, Jan. 14, 2:30 PM - 3:30 PM
Location: B315

How Much Energy Can HVAC System Balancing Save?

Testing alone doesn't save any energy. However, when an HVAC system is balanced, some energy is saved by bringing the system closer to designer and equipment manufacturer specifications. When additional balancing testing is used to diagnose the system, hidden system shortcomings are exposed and custom repairs can be made. Custom repairs are where the greatest HVAC savings can be found.

Speakers: Ben Lipscomb, PE, Engineering Manager, NCI; Peter Jacobs, President, Building Metrics

Monday, Jan. 14, 4:00 PM - 5:30 PM
Location: B315

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