THE HVACR WORKFORCE: Demand Heats Up as Supply Melts Away
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The Minnesota Plumbing-Heating-Cooling *Contractor*, published monthly, is the official publication of the MN Association of Plumbing-Heating-Cooling Contractors. Only as far as notices, bulletins, and reports are concerned. Editorial and personalized news stories reflect the opinions of the writers, and not necessarily that of the Association. Neither the Association nor this magazine accepts responsibility for statements or claims made by advertisers for their products or services.

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**MN PHCC Mission Statement:**
Advancing member success through leadership, education, networking and advocacy for the Minnesota Plumbing Heating Cooling Contractors, Manufacturers and Wholesalers while protecting public health and the environment.
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Growing our Workforce

For the Future

Jeremy Carlson is the MN PHCC president. He can be reached at jeremy@carlsonduluth.com.

I attended the 2015 PHCC Legislative Conference last April in Washington, D.C., and one of our priorities for Congress to understand was our workforce shortage situation. Our industry is currently at a 4:1 ratio—that is, we have only one new worker entering our industry for the four that are retiring. That is a 75 percent deficit!

On a local front, we are already seeing it. I am on Local 10’s Sheetmetal Workers Duluth Joint Apprenticeship Training Committee, and we have been struggling to find interested potential apprentices to interview for the past few years. I find it hard to believe that there are not potential workers out there that are not willing to make $100,000 within five years of signing on. I assess that this is an educational issue. People simply are not educated about our industry from their high school advisers or career specialists. High school students are not thinking of the trades as an option when it comes time to graduate.

We can all do our local part by participating in local job fairs and getting in front of the next generation of young workers to tell them your story.

UPDATE FROM THE BOARDROOM:

Events: Please remember to save the date: February 10-12, 2016 for the Annual State Convention which will be held at the Minneapolis Marriott Northwest Hotel in Brooklyn Park, Minn.

Education: Minnesota plumbing continuing education class times are set and filling up. See page 16 for a location near you.

Reminder: One complimentary Convention registration (which includes 8 hours of plumbing CE) or one complimentary 8-hour plumbing CE registration is included with your MN PHCC Contractor membership dues.

Membership: November is budget season for your board. Our November meeting will focus on reviewing the 2015 fiscal year versus our 2015 budget, and will then lead us to creating a new accurate 2016 operating budget.

Thanks to IntrinXec for their continued leadership and direction in helping us work towards regaining our financial strength.

Happy Thanksgiving.

We have only one new worker entering our industry for the four that are retiring.
The heating, ventilation, air conditioning, and refrigeration (HVACR) industry is the quiet gatekeeper to our personal comfort. We take for granted that we can live and work comfortably year round in all climates. We take for granted that our perishable foods and medicine will remain properly refrigerated. And we take for granted that the air we breathe indoors is clean and odor-free. But it may be harder to secure these comforts in the future.

As the economy hits full stride coming out of the Great Recession, the Bureau of Labor Statistics (BLS) estimates that the number of HVACR mechanic and installer jobs will increase by 21 percent through 2022, nearly twice the growth of employment overall. Likewise, the Social Security Administration estimates 22 percent of the U.S. workforce will retire during this time. As demand heats up, the supply of trained HVACR talent is not keeping pace and may even be shrinking.

WHAT IS THE CAUSE OF THIS TALENT GAP, AND WHAT CAN WE DO TO CLOSE IT?

To help answer these questions, the HVACR Workforce Development Foundation commissioned three studies to explore workforce supply and demand in the United States and Canada. The goal was to understand the opportunities available for HVACR workers and address the unique issues constraining the pipeline of talent for HVACR roles.

Here is what the studies found.

The BLS estimates there are currently 267,600 HVACR mechanics and installers in the U.S. A new study estimates 115,000 new HVACR workers must be trained by 2022 to meet the anticipated demand.
Many HVAC jobs are available—and they are everywhere

Burning Glass Technologies1 (BGT), a leading employment data analytics firm, conducted an analysis of employer demand across the HVAC industry and found 220,734 openings for all types of HVAC jobs (see Table 1) in 2014—a number far higher than BLS employment estimates suggest. And the demand is everywhere. HVAC workers are needed across the U.S. Postings for technician and installer jobs—which constitute the bulk of HVAC openings—remained open 12 percent longer than other similarly-skilled jobs nationally. This suggests that the demand for HVAC workers outstrips the supply, causing employers to struggle to fill key HVAC roles (see Table 2).

While the workforce gap is present in the HVAC landscape as a whole, it is highly pronounced in key HVAC maintenance and installation roles. Students in HVAC training and education programs will likely have little trouble finding jobs upon graduation.

HVAC jobs provide good salaries for a good quality of life

HVAC jobs will remain strong opportunities for workers with appropriate skills, training, certifications or work experience. In 2014, 70 percent of HVAC job postings were for middle-skill occupations that offered advertised average salaries of $49,259 that can go higher with signing bonuses and opportunities for promotion.

HVAC jobs are stable, with year-round employment that cannot be offshored. A majority of HVAC jobs are open to sub baccalaureate workers, exhibit robust demand, and provide strong living-wage salaries. And HVAC jobs are in demand across all states and across many occupation families. As a result, workers with HVAC skills have the opportunity to move and find work in the industry.

HVAC jobs are available for a diverse level of skill sets

HVAC jobs exist across a range of occupation types, including architecture and engineering, sales, production, office and administrative support, and transportation and material moving. These roles support key functions at HVAC manufacturers, wholesale distributors, contractors, engineering firms, and other firms across the HVAC supply chain. According to the BGT analysis, the majority of the 220,000 job openings were for technicians and installers, but job openings exist throughout the entire HVAC sector. See Table 1 for occupational postings for 2014.

The core HVAC installation, maintenance, and repair occupations are among the most difficult to fill in the United States. There is a significant undersupply of talent that has created a skills gap for the most critical of HVAC positions.

**HOW CAN WE CLOSE THE SKILLS GAP?**

We know that a significant number of jobs exist; just as we know there are not enough skilled workers to fill them. So, how can we close that skills gap? To answer this question, we went right to the source—HVAC educators, the ones who help guide those interested in HVAC jobs through training and into the workforce.

The HVAC Workforce Development Foundation worked with Lockwood Education Analysis Consulting to construct an online survey, which was administered in early 2015. Respondents included educators and instructors responsible for HVAC education in secondary and postsecondary institutions in the U.S. and Canada.

The Canadian experience is comparable to what we find in the U.S., but our colleagues to the north have a head start on addressing the HVAC workforce challenge. An earlier survey in 2007 identified a series of factors that were causing skills shortages in the HVACR industry similar to those discussed below. Since then, a refocus on training programs offered in the technical college system have added to the skilled workforce.

Also, a concerted effort was made by the Heating, Refrigeration and Air Conditioning Institute of Canada to provide a variety of tools for employees, potential students and schools. The key strategy in Canada has been to attract more young people into the industry, and it’s working.

**Here are the key findings from the HVAC instructor survey:**

1. There are too many empty seats in HVAC classrooms. Almost 60 percent of instructors report that their programs are under-enrolled and have room for more students.

2. We are not training enough students. For the 2014–2015 school year, an estimated 21,239 new employees were qualified to enter the workforce from technical or community colleges. If we don’t do better than this in the coming years, there will not be sufficient new entrants to the HVAC pipeline to meet future demands.

[ continued ]
3. No clear credentials or accreditation programs. With a mish mash of national credentials for students and instructors, the skills gap will continue to widen. And if HVACR programs are not held to similar standards, then program quality will suffer.

4. We are about to lose many instructors to retirement. Like the skilled workforce, more than 50 percent of instructors in the U.S. and Canada indicate that they will retire in the next 10 years.

5. We need to do a better job training the trainers. While one-third of instructors participated in professional development programs three or more times a year, more than 50 percent haven’t participated in any professional development at all to refresh their knowledge and skills.

6. Too many students are unprepared for training programs. Instructors reported that the biggest challenge facing them is unprepared students, both academically and socially, which makes it harder to retain and graduate students.

7. Recruitment practices are lacking. Instructors reported a need for increased awareness and actions from their institutions to recruit and retain students, particularly for second career workers and veterans, which made up over half of their classes. Companies that need new employees have to do more to help fill the training gap.

8. We need to recruit more women and minorities into HVACR training programs. Many instructors who participated in the survey bemoaned the lack of women and minorities in their training programs.

NORTH AMERICAN PLAN
Based on the results of the survey and discussions with industry representatives, the HVACR Workforce Development Foundation has developed a North American Plan to close the HVACR skills gap in the United States and Canada. This plan focuses on three broad goals for the industry: training the trainers, establishing uniform accreditation and certifications, and attracting a motivated workforce.

Training the trainers
1. Ensuring that North America has a sufficient supply of highly trained workers requires the preparation and ongoing professional development of the instructors themselves.

2. Creating a centrally located database of qualified HVACR training programs to help instructors find available professional development opportunities.

3. Establishing funds through local and regional HVACR employers earmarked for professional development of HVACR instructors.

As a plumbing and mechanical contractor, you’re in a unique position. You have contact with customers who could benefit from rebates offered by Minnesota Energy Resources. Help them save on water heating, appliances, and boiler systems by sending them to cashrebatesnow.com—and you may just be their new hero.

It’s Worth The Energy!
4. Using more HVACR industry employers in professional development programs. This helps to ensure that program instructors align curriculum and instruction to workplace needs.

5. Working with local workforce advisory committees and workforce industry boards to ensure that professional development not only focuses on education, but on connection to the workplace.

Develop a unified program for accreditation and certification

6. A national set of standards and certifications should be used for HVACR accreditation and certification.

7. The HVACR industry must come together and endorse national standards for accreditation and certification.

8. Ensure that standards and benchmarks for student progress are carefully designed to align with curricula and certification requirements as well as workplace requirements.

Find ways to attract motivated students into HVACR job training

9. Research alternative routes to the HVACR workforce and survey current and potential students (traditional, veterans, and second career) to better understand their needs and get helpful information that programs could use to modify curriculum and instruction.

10. Create opportunities for mentoring programs, job shadowing, ride-a longs, internships, and apprenticeships with HVACR employers to enhance the relationships between students and employers.

Through these and other strategies, relationships between training programs and prospective employers can be built and sustained. These strategies all have the potential to improve collaboration among educators and employers, and/or strengthen existing efforts to ensure a steady pipeline of qualified workers through targeted recruitment, strong retention plans, and ongoing program evaluation.

CONCLUSION

HVACR jobs are respectable jobs with progressive salaries and benefits. These jobs are available across North America in big cities and smaller communities. HVACR jobs are high tech green jobs that use the latest technology and diagnostic tools. A job in this industry provides a solid career path and with the opportunity to advance within the sector, including owning an HVACR company. HVACR jobs are out there, waiting to be filled today and in the future. Opportunities abound for those who enter this field.

This article was re-printed with permission from the HVACR Workforce Development Foundation (www.careersinhvacr.org).
National’s Connect Conference
Minnesota Represented!

PHCC—National’s 2015 Connect Conference recently took place in Hollywood, Florida. For three days, contractors and executives from all over the nation gathered to network, grow, learn, and of course...have a good time. Many things transpired over those three days that affect our industry on every level—national, state, and local.

Several educational sessions took place that were geared directly towards contractors in the plumbing, HVAC, and mechanical sectors. Contractors got to attend sessions like “Your First Line of Management—Creating Super Foremen!”, “Mechanical Systems for Mega-Homes”, “Coast to Coast Piping Industry Report and Market Recovery Contractor Forum”, and “Lessons from the Pros: Adding HVAC to Your Business”. And that is just a sampling from the close to 30 breakouts that were offered.

The annual Plumbing and HVAC Apprentice Contest took place as well. For two days, apprentices from all over came together to showcase their skills. Minnesota even had a champion amongst the contestants. David Spaeth, a fifth year apprentice, from Harty Mechanical in Austin, took home the third place award in this year’s Plumbing Apprenticeship Contest!

There were a handful of Minnesota folks that were awarded scholarships from PHCC—National this year. Collectively, since their inception, the PHCC Educational Foundation and PHCC National Auxiliary and scholarship programs have awarded more than $4.1 million to deserving young men and women across the country. More than 2,095 students have received the quality education they need to be successful in the plumbing and HVAC industries, as well as other careers.

This year, a record number of scholarship applications were received by both the Foundation and Auxiliary. It’s encouraging as we work to attract and train the next generation of skilled workers to our industry. Congratulations to this year’s winners from Minnesota!

Ashley Brommerich
Winona State University

Olivia Marie Oland
North Dakota State University

Dylan Belkholm
Mankato State University

PHCC—National has two major events a year that every contractor is encouraged to attend. One being the Legislative Conference every spring, and the other being the Connect Conference every fall. You are invited and are strongly encouraged to participate in one—if not both—of these events. The 2016 Legislative Conference (which takes place in Washington, D.C. every year) is scheduled for May 18-19, 2016 and the 2016 Connect Conference (which is taking place in San Antonio, Texas) is...
scheduled for October 19-21, 2016. Look for details on our website at www.mnphcc.org as they are released! 📆

Jessica A. Bartram is the executive manager for MN PHCC. She can be reached at jbartram@intrinxec.com.

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IN THE NEWS

PHCC Educational Foundation Recognizes Copper Development Association

A long-time supporter of PHCC and educator to those in the plumbing-heating-cooling profession, the Copper Development Association (CDA) recently received the PHCC Educational Foundation's prestigious Chairman's Award. Presented at the PHCC Educational Foundation's Donor Reception during CONNECT 2015 in Hollywood, Florida, Educational Foundation Vice Chair David Dugger commended the world's foremost resource on copper and copper alloy applications with its “100 percent commitment” to PHCC and the industry.

"Any time we need support," he said, "CDA is there," adding that the Foundation can always count on CDA to provide financial assistance for its contests and regional instructor workshops, technical training, product donations, and on-site help at apprentice competitions.

With copper continuing to be a valued and reliable product in the p-h-c industry, the Foundation heavily depends on CDA representatives to educate PHCC members on the proper ways to braze and solder copper. "They are generous team players and a very important part of our PHCC family," Dugger said of these professional partners. "We couldn't be successful without them."

Johnstone Supply Big Pig Event and Trade Show – September 11, 2015

Over 575 partners “porked out” at the annual Big Pig Event and trade show at Johnstone Supply in Bloomington, Minn.! Over 35 vendors presented their new equipment and products on the date that will never be forgotten—September 11th!

Johnstone Supply Bloomington, St. Paul, Blaine, and Rochester are part of a top cooperative wholesale distributorship in the country. Servicing their partnering contractors in Minnesota by offering unbeatable service, support, product knowledge, and competitive pricing are some of the reasons that this member has become so successful! The annual customer appreciation event tends to be another reason that so many have gone “hog wild” for Johnstone Supply. Learn more at www.johnstonesupply.com.

Upcoming Industry Events

MN PHCC Plumbing Continuing Education
DATE: Friday, November 6
LOCATION: SPS Companies, St. Cloud, MN

MN PHCC Plumbing Continuing Education
DATE: Friday, November 13
LOCATION: Twin Cities Winnelson, Ramsey, MN

MN PHCC Plumbing Continuing Education
DATE: Wednesday, November 18
LOCATION: Signature Event Center, Winona MN

MN PHCC Plumbing Continuing Education
DATE: Thursday, November 19
LOCATION: Federated Insurance, Owatonna, MN

MN PHCC 2016 Convention
DATE: February 10 - 12, 2016
LOCATION: Minneapolis Marriott Northwest, Brooklyn Park, MN

Look for more events and information on our website at www.mnphcc.org
Auer Steel & Heating Supply Co. celebrated the official grand opening of its new Fargo location at 855 12th Avenue NE, West Fargo, North Dakota on Thursday, September 10, 2015.

“We are thrilled to have opened our new branch in Fargo,” said Mike Curtes, president of Auer Steel. “Auer Steel has had the pleasure of serving this market and its great dealers for over two decades. This branch opening is part of our continued commitment to providing industry leading service and convenience to our customers in the area.”

Stocked in the 25,000 square-foot branch is a full line of premier HVAC brands including Bryant, Payne, Mitsubishi Electric, Burnham, AO Smith, Reznor, RenewAire, NTI, Honeywell, Panasonic, Aprilaire, and many more. Auer Steel Fargo is open Monday – Friday from 7:30 a.m. - 4:30 p.m. and offers after hours emergency service as well as five days of delivery in the Fargo, Grand Forks, and Detroit Lakes areas.

About Auer Steel (www.auersteel.com)

Auer Steel & Heating Supply Co. is a full-service distributor of high quality indoor comfort products. With eight locations across the upper Midwest, Auer Steel features the Bryant, Carrier (Milwaukee only), and Payne brands of furnaces, air conditioners, humidifiers, air cleaners, heat and energy recovery ventilators, controls, and other heating and air conditioning accessories.

The company opened in 1940 in Milwaukee, when Don Curtes Sr. founded the business on his philosophy of providing quality products with superior customer service. Now, over 75 years and two generations later, the Curtes family continues to own and operate Auer Steel with the same valued-added service ideals.

The following students recently received scholarships from the PHCC—National Auxiliary and the PHCC Education Foundation.

- Ashley Brommerich is from Winona, Minnesota and was sponsored by Angie Westman. Ashley attends Winona State University.
- Olivia Marie Oland is from Owatonna, Minnesota, and was sponsored by Lynn Finley. Olivia attends North Dakota State University.
- Dylan Belkholm was given a $2,500 scholarship sponsored by the PHCC Educational Foundation. On his application, he wrote, “My career goals are to graduate from Mankato State University with a Bachelor’s Degree in Mechanical Engineering. After graduation, I want to move into a job that allows me to apply my learning to implement solutions to real-world problems. My determination will allow me to prevail and accomplish what I’m set out to do, no matter what obstacles I face along the way.”
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For more information, visit CenterPointEnergy.com/RebateScoop.

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### Commercial contact
David Poretti
612-321-4386 or 800-234-5800 ext.4386
David.Poretti@CenterPointEnergy.com

For additional information about commercial rebates, visit CenterPointEnergy.com/CommercialTradeAlly.

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Residential rebate offerings

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Commercial rebate offering

$200 rebate per 100,000 Btu input natural gas water heater; ≥88% thermal efficiency.

**Commercial contact**
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612-321-4386 or
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For additional information about commercial rebates, visit [CenterPointEnergy.com/CommercialTradeAlly](http://CenterPointEnergy.com/CommercialTradeAlly).

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# Seminar Registration Form

**MN PHCC – IAPMO**

## 8 Hour Seminar Approved for Continuing Education by the State of Minnesota

**First Name** __________________________ **Last Name** __________________________

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## Information to Create Your Online Account at www.iapmolearn.org

**Username:** __________________________________ **Password:** plumber

An account will be created on your behalf at www.iapmolearn.org. You will need to access your account to complete certain class requirements and access your electronic Certificate of Completion. All new accounts created via this pre-registration form will receive the "plumber" password. Please change your password upon visiting the site for the first time.

## Seminar Schedule:

**PLEASE SELECT:** (classes are from 8 a.m. – 5:00 p.m.)

- [ ] State of MN Plumbing Code Essentials – Friday, November 6 | SPS Companies (St. Cloud, MN)
- [ ] State of MN Plumbing Code Essentials – Friday, November 13 | Twin Cities Winnelson (Ramsey, MN)
- [ ] State of MN Plumbing Code Essentials – Wednesday, November 18 | Signatures Event Center (Winona, MN)
- [ ] State of MN Plumbing Code Essentials – Thursday, November 19 | Federated Insurance (Owatonna, MN)

- [ ] $130.00 MN PHCC/IAPMO Members
- [ ] $195.00 Non-Members
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*Each MN PHCC member receives 8 hours of free continuing education through the MN PHCC. Select this option only if you have NOT taken advantage of this opportunity in 2015.

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Make check or money order payable to: IAPMO

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Credit Card Number __________________________ Expiration Date __________ CVC __________

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*Each attendee must complete a registration – photocopy this form if needed.

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George Fantaccone, Service Manager for Santoro Oil, loves Taco’s ECM circulators.

www.TacoComfort.com
A Conversation with Sam Dowdy, Sr., S&L Plumbing in Taylor, Texas

Sam Dowdy, Sr. has his pick of qualified tech hires for the next three years. We learned about Sam’s efforts in his school district and at the state legislative house in a previous issue of the Foundation’s FOCUS newsletter. Here are some additional tips from Sam.

CHANGING THE SCHOOL SYSTEM

“We were able to get Texas state school funding approved for use in apprentice training programs. So now the local school officials can’t use lack of funding as an excuse to not offer training for the trades. Our legislators are using the model of what we have set up here in our school district to push for the same opportunities across the entire state.

We are also making progress on getting approval for kids to graduate with a Tradesman License in hand. All of that happened because of us contractors showing up at the school board meetings and at the state house to tell our story. It takes time, but that’s how to get things done—somebody has to show up and have those conversations.

CHECK WITH YOUR LOCAL MILITARY BASES

We recently won an ‘Employer of Excellence’ award from the Texas Workforce Commission. Some of the other winners this year were Walmart, Amazon.com, and Chevron. What put us in the same category as those giants? We built a relationship with the folks at the commission to learn everything we could do to make full use of the programs they offer.

We hire summer interns to help kids get experience in a real workplace. We’ve hired mentally and physically challenged interns who could handle office work like filing. The Workforce Commission wants opportunities for these folks, so they will help by providing a trained supervisor for these workers if needed. Some internships qualify for wage grants from the state, which reduces our costs for their hours.

CHECK WITH YOUR STATE WORKFORCE COMMISSION

I guess the point is, don’t sit still and wait for people to come looking for a job with you. There are plenty of programs that are looking to connect employers with people you won’t find with a ‘Help Wanted’ ad. Find those opportunities and work to create some of your own too.”
The projected worker shortage in the p-h-c industry is staggering. According to the PHCC, the trades will need 21 percent more plumbers and 21 percent more HVAC technicians by 2022 … in addition to replacing workers who retire!

Many companies already are facing problems finding qualified workers, and there are more challenges to come. The PHCC and the PHCC Educational Foundation have implemented a special task force to assess ways p-h-c businesses can attract, train, and retain the next generation of skilled workers. In the meantime, here are some suggestions on how you can develop the workforce you need … now and in the future.

**ATTRACT**
**Things you can do in your area!**

- Share your passion with local schools. Lead a Career Day presentation and spark an interest in a student who hadn’t considered a plumbing or HVACR career, head a discussion on trade occupations at a PTA or PTO meeting, or establish a co-op plumbing program in your local high school.
- Talk with school officials about the importance of career and technical education.
- Mentor students of all ages; start with your local Scouting troops (Boy Scouts of America offers merit trade badges—including plumbing, welding, drafting, and—coming soon—HVAC; learn more at www.meritbadge.org).
- Invite students and young adults to “shadow” you for a day to get a real-life perspective of a “day in the life” of a p-h-c professional.
- Partner with your local community and technical colleges on developing a shared vision for student outcomes and collaborating on both curriculum and instructor training.
- Bring industry partners into the conversation; work with manufacturers, wholesalers, etc. on establishing a relationship with a school by donating equipment, materials, or classroom assistance time.
- Educate your elected officials about the critical need for Career and Technical Education (CTE) and workforce program funding; call their offices or write a letter.
- Use social media. This popular marketing platform is a great way to promote why people should consider choosing the p-h-c profession—education alternatives, solid wages, comfortable living, contributions to public health and safety, opportunities for hands-on work, emerging high-tech possibilities, etc. When possible, add photos and video for added impact.
- Promote technology in the trade. Heightened energy efficiency standards have dictated even more high-tech products and tools in the industry, perfectly suited to today’s young people.
- Show career growth opportunities. The construction industry not only presents prospects for business management and ownership, but also encompasses multiple career paths, such as accounting and marketing, and even technical writing and law.
- Support and tap into the PHCC Educational Foundation’s scholarship program, this year awarding $77,500 in scholarships to apprentices or students entering a course of study directly related to the p-h-c industry.
TRAIN
The PHCC Educational Foundation has proven tools designed to help contractors train the next generation of skilled workers. Put these resources to work for you.

• A complete four-year series of plumbing and HVACR textbooks (using Department of Labor-approved curriculum); also available in eBook format.

• A four-year plumbing and HVACR online eLearning program designed for students who cannot attend a traditional classroom setting.

• A series of plumbing assessment tests for each year of apprenticeship in a traditional four-year program; also can be used as an entry-level journeyman test.

• Plumbing and HVACR competitions, including SkillsUSA (www.skillsusa.org) and the PHCC Educational Foundation’s popular apprentice contests at the annual CONNECT conference.

• An instructor training program: the HVACR & Mechanical Conference for Education Professionals.

• For more information, visit www.foundation.phccweb.org.

RETAIN
Once you recruit and train skilled workers, how do you keep them?

• Make sure your company has the perfect system for employee development and the right type of work environment to keep new and existing employees.

• Serve your community … because you’re a part of that community. Get involved in local charities and needs, and model that commitment to your employees.

• Share your craft with the next generation, and pass on the traditions and pride built in this trade!

WE ALL GAIN!
You have the power to keep our industry strong, but you must get involved!

• A little work goes a long way in protecting you, your company, your family, and your future. Start attracting and preparing the next generation of skilled workers … today!

• PHCC and the PHCC Educational Foundation can provide everything you need to get started … plus watch for new strategies and tools coming soon.

Visit www.phccweb.org, or email membership@naphcc.org to find out more about PHCC!

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1 MEMBER INFORMATION
Please provide your company information below as you would like it listed in the membership directory.

Company Name: ____________________________________________________ □ Union  □ Non-Union
Primary Contact: ____________________________________________________
Address: _____________________________________________________________
City: ___________________________ State: ___________ Zip: ___________
Phone: ___________________________ Fax: ___________________________
Email: _____________________________________________________________
Website: _____________________________________________________________
Referred By (member name & company): _________________________________

2 PRODUCTS / SERVICES
Please select which products / services your company provides:

□ Plumbing Contractor Installation/Repair/Maintenance
□ Plumbing Parts/Tools Wholesaler
□ Plumbing Parts/Tools Manufacturer
□ HVAC Contractor Installation/Repair/Maintenance
□ HVAC Parts/Tools Wholesaler
□ HVAC Parts/Tools Manufacturer
□ Mechanical Contractor Installation/Repair/Maintenance
□ Mechanical Parts/Tools Wholesaler
□ Mechanical Parts/Tools Manufacturer
□ Business Service Provider for Contractors, i.e. utility, CPA services, etc.
□ Manufacturers’ Representative
□ OTHER: Please list the specific service(s) you offer: ______________________
____________________________
____________________________
____________________________

3 ADDITIONAL EMPLOYEES
Please provide employee information for those that you want to receive PHCC communications regarding events, updates, industry information, etc. Attach additional names if necessary.

Name: _____________________________________________________________
Phone: ___________________________ Email: ___________________________
Email: _____________________________________________________________
Name: _____________________________________________________________
Phone: ___________________________ Email: ___________________________
Email: ______________________________________________________________________________________

4 MEMBERSHIP TYPE
Please select your membership type below.

□ CONTRACTOR Company - $1,350 □ ASSOCIATE Company - $500
□ UNION

Company Name: _________________________________________________________________
□ Union  □ Non-Union
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City: _____________________________________________________________ State: ___________ Zip: ____________
Phone: ___________________________________________ Fax: ____________________________________________
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5 PAYMENT INFORMATION

□ Visa  □ MasterCard  □ AMEX  □ Check #___________ (payable to MN PHCC)
Card Number: ___________________________ Exp. Date: _________
Name on Card: ____________________________________________________________________________________
Signature: __________________________________________________________

PLEASE SEND YOUR COMPLETED FORMS WITH FULL PAYMENT TO:
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Removable Pan with Overflow Protection Sensor
Compact and lightweight design
- 16” H x 13” W x 9” D (approx.)
- 23 lbs shipping weight

<table>
<thead>
<tr>
<th>Model</th>
<th>Capacity Lbs/Hr (Kg/Hr)</th>
<th>Suitable for</th>
<th>KW</th>
<th>Voltage/Phase</th>
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<tbody>
<tr>
<td>Acu-5</td>
<td>4.8 (2.2)</td>
<td>up to 2000 SQ FT</td>
<td>1.5</td>
<td>120/1</td>
</tr>
<tr>
<td>Acu-10</td>
<td>9.6 (4.4)</td>
<td>up to 4000 SQ FT</td>
<td>3.0</td>
<td>240/1</td>
</tr>
<tr>
<td>Acu-15</td>
<td>12.8 (5.9)</td>
<td>up to 5300 SQ FT</td>
<td>4.0</td>
<td>240/1</td>
</tr>
</tbody>
</table>

For ductless applications take a look at:

Split Steam

US Representative:
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Viessmann Boilers
Vitodens 200-W Cascade Systems - 60 to 4240 MBH

Working with your BMS
The Vitotronic 300-K control also allows seamless integration into Building Management Systems (BMS) without additional gateway (limited access). Use of commercially available LON equipment for further inputs and outputs is optional (coupling via standard LON tools up to three heating circuits).

Specifications
- For two to eight Vitodens 200, B2HA boilers in a single cascade
- Manifolds hydrostatically tested to 100 psig and alignment inspected
- Vitotronic 300-K control with outdoor reset function and integration with BMS (additional components required)
- All ANSI fl ange connections

Benefits at a glance
- Outstanding performance with Vitodens 200 and Lambda Pro combustion management system
- Maximum efficiency with high turndown that precisely matches load
- Simplified boiler system layout as manifold and Low-Loss Header provide complete primary loop
- Multiple boilers secure against interruption of heating plant operation
- Boilers easily assembled and hydraulically connected prior to installation with prefabricated manifold
- Flexible installation with multiple manifold configurations: wall-mounted, floor standing, corner or back-to-back
- Right or left-mount Low-Loss Header acts as hydraulic break and helps eliminate air and debris
- Ideal for small or difficult-to-access boiler rooms or facilities with narrow halls and stairwells
- All serviceable components easily accessible from the front
- No pipe or manifold sizing required
- Offered in packaged system

Stocking Wholesale Distributor
Phone: 800-666-1111
Fax: 651-429-5757
6800 Otter Lake Road
Lino Lakes, MN 55038

Vitodens 200-W Cascade Systems
1. Vitodens 200-W, B2HA gas condensing boiler
2. Vitotronic 300-K, MW2B Cascade Control
3. Low-Loss Header
4. Distribution Manifold
5. Circulators, Check Valves

Product not exactly as shown.
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For information about the Minnesota Association of Plumbing-Heating-Cooling Contractors, call the main office at 952-564-3060 or contact one of the following Board of Directors:
SAVE THE DATE

MN PHCC 2016 Convention

DATE:
February 10 - 12, 2016

LOCATION:
Minneapolis Marriott Northwest, Brooklyn Park, MN

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Please be sure to read through all the rules on the cover sheet. Incomplete applications will not be accepted.

**Section One & Section Four: All applicants need to complete

**Section Five: Applicants who are currently enrolled in or will be in an Undergraduate program or Trade Program need to complete

**Section Six: Applicants who are currently enrolled in or will be in a Graduate program need to complete

PARENT(S) / GUARDIAN(S) CONTACT INFORMATION

Section Two

Name: ________________________________________
Address: ______________________________________
City: __________________________________________
State: _______________ Zip:  ____________________
Phone: ________________________________________
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Signature of Member: ____________________________

SCHOLASTIC DATA

Section Four

High School Attended or Attending: __________________
Grad. Year: _______ Rank/Number in Class: __________
Cum. GPA currently or at time of graduation: __________
High School Principal’s Name: ______________________

UNDERGRADUATE / TRADE SCHOOL INFORMATION

Section Five

Name of College you will be attending or are currently enrolled at:
______________________________________________
Address:  ______________________________________
City:  ______________  State:  _______  Zip:  ________
Dean / Advisor’s Name:  __________________________
Enrollment Date:  __________  Ant. Grad. Date:  ______

GRADUATE SCHOOL INFORMATION

Section Six

Name of Undergraduate School Attended: __________________
Graduation Date: _________________________________
Degree: _________________________________________
Name of Graduate School you will be attending or are currently enrolled at: _____________________________
Dean / Advisor’s Name: ___________________________
Course of Study: _________________________________
Enrollment Date: _________________________________
Ant. Grad. Date: _________________________________

I HEREBY CERTIFY THAT THE ABOVE IS TRUE AND ACCURATE

APPLICANT’S SIGNATURE: ____________________________

PARENT’S SIGNATURE: ______________________________

IF APPLICANT IS UNDER 18

________________________________________________________________

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MN PHCC 2016 Convention
February 10 – 12, 2016
Minneapolis Marriott Northwest, Brooklyn Park, MN

HIGHLIGHTS INCLUDE:
- 8 hours of plumbing & power limited continuing education
- Sessions surrounding business management, HVAC, safety, and much more!

Free & open to the public vendor show on Thursday, February 11, 2016 immediately followed by the Annual Banquet

LOOK FOR MORE DETAILS @ MNPHCC.ORG