

Phc News

plumbing & hydronic contractor news

Loadin' up on Boilers

*Silverton, Colo. school gets boiler gift — page 110
&
Check out the 2010 Boiler Report — Page 44*

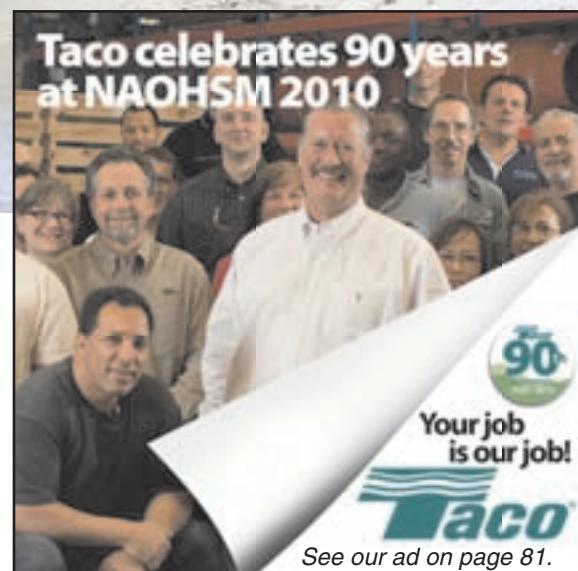


Also Inside:

***Sprinkler
Integration***



**Taco celebrates 90 years
at NAOHSM 2010**



90
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Taco

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Sage2™
boiler control system



Producing an ultra-high efficiency condensing boiler is one thing. Making it easy to install and use is quite another. The Burnham Alpine boiler delivers an impressive 95% AFUE, but is also very easy to install, set up, and use. Offering single side connections, single point power, a unique patent pending condensate trap, and controls which are sealed and separated from the lower jacket, every aspect of the Alpine boiler has been engineered for ease of use and longevity.

Thanks to the new Burnham Sage2 control system, the complex nature of computer controlled boiler control systems has been streamlined and simplified as well. By using a touchscreen interface, the Sage2 puts an impressive array of boiler control features at your fingertips... literally. What's most impressive about the Sage2 is that this information is easy to access and understand thanks to its intuitive menu design which displays information in clear, simple statements, not cryptic codes. The design of this interface also eliminates the frustrating, seemingly endless scrolling associated with many other boiler control systems.

Come see the Alpine boiler and the Sage2 control system at NAOHSM, in booth 423.

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Circle 1 on Reader Reply Card

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Circle 2 on Reader Reply Card



On the Cover

When the community school in Silverton, Colo. lost its boiler there was no money to replace it so students and faculty did without heat. Laars Heating Systems was looking for a place to test its new high-altitude boiler, and Pat Noonan VP and part owner of Par Mechanical in nearby Montrose discovered the community's need. Get the story of this serendipitous project on page 110.

Features

44-57 Boiler Report 2010

Here's the skinny on what's new in boiler technology from 15 manufacturers, who provide in-depth information about their companies, new products, hot new features and their outlook for the boiler industry.

60 Geothermal technology in action

A Maine-based nonprofit educational institution offering nature-base courses saw geothermal energy for heating as the perfect match for its conservation-based ethics when installing a heating system in its environmental-education center.



WE HEARD YOU LOUD AND CLEAR



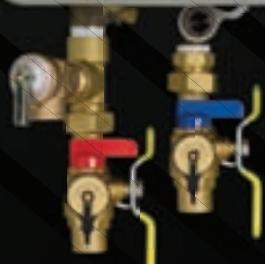
"The EXP works very well, and when you add up all the components, leak paths and installation time... these kits are very economical."

James Fye, Owner
A-Able Plumbing Inc., Broadway, VA



"The EXP valve is the greatest thing since sliced bread when it comes to tankless water heater installations and flushing systems!"

Richard Wetzel, CEO
William North Co Inc., Jackson, MI



"The EXP is well designed, hammer down, the best in the business. Webstone gives you the ability to install and walk away."

Eric Rowland, Supervisor
Waterworks Plumbing, Davis, CA

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Phc News

plumbing & hydronic contractor news

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Tom M. Brown Jr., President



Look, Ma, no trench! - pg. 102

Columns

DAN HOOLAHAN: Helluva circulator! 22

BRISTOL STICKNEY: Solar combisystems

do the job in NM 24

ELLEN ROHR: Teach them well 30

RICHARD DiTOMA: Find a better way 32

JOHN BARBA: Selling defined 36

MORRIS BESCHLOSS: Signs pointing up;

but economy faces headwinds 38

Field Reports

California hotel finds Noritz tankless solution for heavy usage 114

ProPress eases upgrades to 80-year-old Idaho Capitol 126

In the News

PHCC lobbies congress; RIDGID®, Cleveland Indians team up 6

The Pulse: Hackman to retire; fuel prices up; inmate plumber inspired by PHC NEWS 12

Sump pump efficiency 16

Jeff Gordon goes geothermal 19

MANUFACTURER PROFILES 62-90

Air-to-water heat pumps: Coming soon to a distributor near you? 96

Trenchless drain repair 102

Near-boiler piping the smart way 106

"Smyling" through rough economy

with 3-way guarantee 112

Product News 118-123

Tool Crib 124

From the Editors

Manufacturer "gets it" about customer care 130



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REMOVE



REPAIR



PHCC flexes muscle; appoints Educational Foundation COO

WASHINGTON — Building on the Legislative Conference theme of "Be Strong Enough to Fight for our Industry!" more than 100 PHCC members stormed Capitol Hill on April 29 to bring important small business and p-h-c-specific issues to the forefront of lawmakers who make decisions affecting their businesses.

Through a variety of high-level networking and information-gathering events, members and chapter ex-

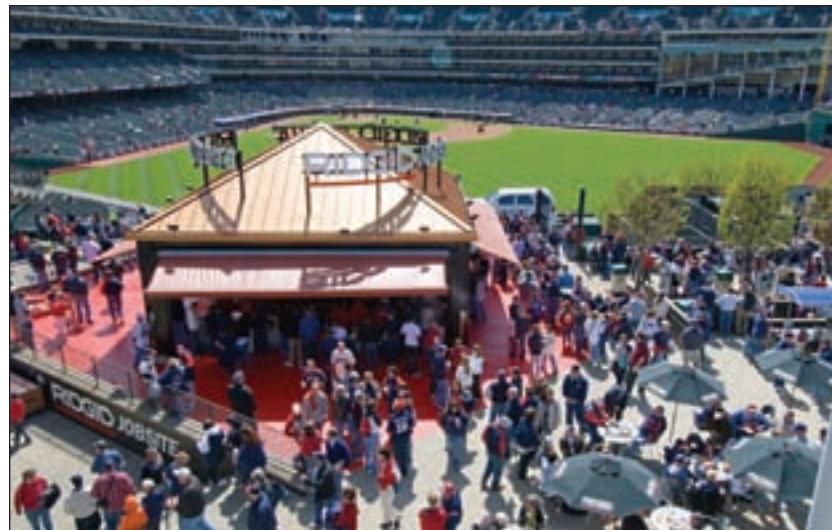
ecutives were able to spend some time getting to know members of Congress at a Congressional reception and to learn from leaders from both political parties addressing the Legislative Breakfast.

During visits to Congressional offices, contractors and state association executives appealed for the halt of a three percent withholding tax on government contractors; total repeal of the estate ("death") tax; more

Perkins funding for technical education; and the inclusion of a licensed plumber installation requirement in water conservation legislation.

PHCC names Educational Foundation COO

Cindy Sheridan, vice president of Member Services for the Plumbing-Heating-Cooling Contractors — National Association (PHCC), has been named chief operating officer of the PHCC Educational Foundation. She will replace the current Foundation COO, Gerry Kennedy, who now is the PHCC executive vice president. The appointment is effective immediately.



sive Field's market pavilion in center field. Before certain home games, RIDGID staff will be on hand to demonstrate the latest in tool technology to fans. The sponsorship agreement also includes signage,

home game contests, product showcases and information, live radio mentions, and the opportunity for a RIDGID selectee to throw the first pitch at a home game.

For info, www.ridgid.com.

Rheem-Ruud offers contractor promotion

MONTGOMERY, ALA. — Rheem Water Heating has launched a special spring and summer sales promotion to encourage plumbing contractors to buy and install the new Rheem or Ruud HP Series of hybrid electric water heaters with energy-saving heat pump technology.

Contractors — watch your mail-

boxes! On April 29, a mailing was sent to Rheem and Ruud installers nationwide, detailing the two-part special offer:

- **\$25 Discount:** By showing the original mailer to a participating distributor (no photocopies accepted), a contractor can receive a one-time \$25 discount on any Rheem or Ruud HP Series hybrid water heater purchased between May 1 and September 15, 2010.

- **Free Water Heater:** A contractor can receive a free Rheem or Ruud HP Series water heater by purchasing and installing 10 of these models between May 1 and September 15, 2010. Copies of distributor invoices and installation invoices, including serial numbers and installation addresses, must be submitted by September 30 of this year. Once a submission has been qualified, Rheem will send a participating contractor a special certificate for a free HP hybrid water heater. For additional info, www.rheem.com.

Grundfos 'Pumps on Tour' truck begins journey through Northeast

OLATHE, KAN. — Grundfos "Pumps on Tour" — a fully equipped, mobile educational center for trade professionals in the residential, commercial and industrial pumping industry, as well as the groundwater and irrigation industry, will make several stops throughout the Northeast region from April through June 2010. As part of a 48-city, eight-month, nationwide tour, Pumps on Tour will have extended visits at the Atlantic Region Energy Expo (AREE) in Atlantic City, N.J. and the National Association of

Oil Heat Service Managers (NAOHSM) 57th Annual Convention & Trade Show in Providence, R.I.

Each tour stop offers trade professionals valuable opportunities to gain hands-on training from Grundfos staff and the ability to experience interactive pump displays. The 1,200-square-foot vehicle includes a mini-theater for viewing training videos and presentations, as well as a series of interactive working displays from a wide selection of pumping solutions from Grundfos.

In brief

One millionth Faradyne motor sold

NEWARK, N.Y. — Faradyne Motors, a joint venture between ITT Corporation and Pentair Water, is announced that it has manufactured and sold one million submersible motors. Headquartered in Newark, Faradyne was formed in 2005 to produce a new generation of reliable high-quality motors.

Pentair Water sells Faradyne motors under the PENTEK® brand, while ITT sells them under the CentriPro™ brand. Drawing upon the technical expertise and resources of both ITT and Pentair Water, Faradyne is backed by more than 250 years of collective pump and motor experience.

Eemax, Inc. does Facebook and Twitter

OXFORD, CONN. — Eemax, Inc., (www.eemax.com), a leader in commercial and residential electric tankless water heaters, announced it has established a presence on Facebook and Twitter. Eemax will use these online social networks to share company news, product information and videos, and to hold open discussions about topics relating to energy efficiency and going green initiatives.

Mr. Rooter® donates to Ronald McDonald House Charities®

WACO, TEX. — Mr. Rooter Plumbing kicked off its national sponsorship of Ronald McDonald House Charities by donating money and supplies to the Ronald McDonald House® in Sacramento.

More than 45 Mr. Rooter franchise owners, their employees and members of the corporate staff made the trip to the Sacramento Ronald McDonald House. They presented the House with a \$3,395 check, as well as kitchen and food supplies their teams collected.

2010 HVACR & Plumbing Instructor Workshop a success

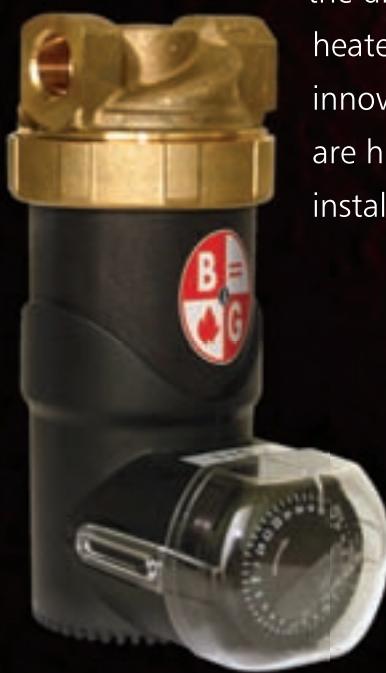
DES PLAINES, ILL. — The 2010 HVACR & Plumbing Instructor Workshop, held in Lansdowne, Va., drew a strong crowd. The workshop focused on "Advancing Green Mechanical Concepts," and featured numerous HVACR and plumbing-specific technical sessions, with topics ranging from solar water heating to integrating green building practices into the curriculum.

Instant hot water using only as much power as a night-light.

Think about ITT.

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For more information, contact your Bell & Gossett Representative or visit www.bellgossett.com



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Engineered for life

Circle 5 on Reader Reply Card

Milwaukee® announces partnership with Uponor

MILWAUKEE, WIS. & APPLE VALLEY, MINN. — Milwaukee Electric Tool Corporation announced a new partnership with Uponor, a leading manufacturer and supplier of plumbing, fire sprinkler and radiant heating and cooling systems. Fueled by the common passion of delivering increased productivity to plumbing and heating professionals, the companies have aligned to develop a comprehensive solution for installing Uponor's ProPEX® fitting system. Throughout its history, Milwaukee® has demonstrated an unwavering commitment to the trades with the introduction of products designed to increase productivity. Innovative products like the Hole Hawg®, Super Hawg™, M12™ Cordless Copper Tubing Cutter, M12™



Cordless PVC Shear, M18™ Cordless Band Saw and Switchblade™ Selfeed Bits are examples of the powerful innovation which have delivered unsurpassed productivity. Through this partnership, Milwaukee® will now add M12™ and M18™ ProPEX® Expansion Tools to their growing line of products designed for the plumbing and heating trades.

"We are dedicated to delivering disruptive innovation by offering solutions to the end user that challenge conventional wisdom," said Steven Richman, president of Milwaukee Electric Tool Corporation. "I am proud to partner with an organization that clearly shares this passion and our core values."

With Uponor's continued support, the M12™ and M18™ ProPEX® Ex-

pansion Tools will launch later this year, offering features such as an auto-rotating head for accurate, one-handed expansion. The new tools will not only accelerate the speed in which users can install ProPEX® connections, they are also compatible with more than 20 tools on their respective battery platforms.

"At Uponor, we realize an essential ingredient for success in the plumbing and heating industry is a quality fitting system and a quality tool," said Anders Tollsten, executive vice president, Uponor North America. "We know our customers are loyal to the ProPEX® connection method, and we want to offer them a tool with the same durability to match. Partnering with Milwaukee® will allow us to offer our professional partners this vital combination."

senior marketing manager.

"Our new Commercial division will consist of the top technical experts within the industry who will be able to handle the needs of the nation's entire business community due to our outreach in every major region of the country," said Asano. For more information, www.noritz.com/commercial.

Noritz offers commercial program

FOUNTAIN VALLEY, CALIF. — Noritz America Corp., one of the leading manufacturers in tankless water heater technology, and the official tankless water heater of Brad Pitt's Make It Right project in New Orleans, Extreme Makeover: Home Edition for 2008-09 and Leonardo

di Caprio's rebuilding efforts in Greensburg, Kansas, has developed the Noritz Commercial Department, which will consist of regional teams of commercial professionals to assist with all retrofitting and new commercial projects, according to Yoshi Asano, Noritz America

In brief

Carhartt clothing rentals available

CINCINNATI — Cintas Corporation, one of North America's largest uni-



form supplier, has partnered with Carhartt, a global manufacturer of premium workwear, to offer Carhartt garments for the first time in a Uniform Rental Program.

www.cintas.com/Carhartt for more information.

Bradford White chosen top brand

AMBLER, PA. — Bradford White water heaters has been named the tank type water heater brand most purchased by plumbing and heating contractors for the fourth consecutive year, according to a 2009 independent study. The study also showed Bradford White as the brand most recommended for the second straight year. For more info, www.bradfordwhite.com.

New website rewards water savings

RESPONSIBLEBATHROOM.COM, launched from American Standard Brands, is a fun, interactive educational website where points are earned for pledging different water conservation behaviors. The points can be used to enter sweepstakes for prizes ranging from free products to a luxury eco-friendly vacation.

The website is designed to educate visitors on simple steps they can take to decrease the amount of water they use each day. Visitors begin by taking the "Responsible Bathroom Pledge," a personal challenge to begin saving water immediately. They are encouraged to search the site for water-savings facts and tips, while earning points by answering quizzes about what they have learned. Points are accumulated over time and may be redeemed by entering weekly contests and a grand prize drawing at the end of the year.

BIM News Corner

MCAA introduces BIM course

ROCKVILLE, MD. — The Mechanical Contractors Association of America, Inc. (MCAA) announced a new course, "BIM TECHNOLOGY for Mechanical Contractors." The two-day course will be held Monday, October 11 – Tuesday, October 12, 2010 in Chicago. The association also will reprise its popular BIM for Mechanical Contractors introductory-level course on May 17, 2010 in Baltimore.

BIM TECHNOLOGY for Mechanical Contractors will present a logical, solid process for selecting BIM tools. It will explore significant applications and categories of tools across project phases and the positive effect BIM processes provide for quantity take off, shop drawing and fabrication, and construction scheduling. For info, www.mcaa.org/education.



tem designers, Grundfos Commercial Building Services (CBS) is making computer-generated, three-dimensional models of eight popular commercial and industrial pumps available for easy downloading in a Revit (.rfa) file format on Autodesk® Seek at <http://seek.autodesk.com/>.

Intended to eliminate the need for printed information on products, Autodesk Seek is a leading online resource for 3D models, 2D drawings, visual images, and specification data on a wide array of building products. "By using this user-friendly resource as part of the BIM process, system designers and specifiers should find it easier than ever to select the right Grundfos or PACO pump for their particular applications," said Matt Gallucci, LEED AP and a regional sales engineer with Grundfos CBS.

Raypak offers Revit BIM files online

OXNARD, CALIF. — Raypak, Inc. now has available Autodesk Revit BIM files for its entire product line on a mini

CD. It includes the complete families of commercial boilers, water heaters and storage tanks; i.e. Raytherm™, Hi Delta™, MVB™, XTherm™ and XFire™. Revit Files, a mainstay of the Autodesk cache of software products, facilitate the opportunity for architects and engineers to drop selected products directly into their Autodesk Revit building projects. They allow the designer to insert product dimension, clearance, and connection specifications. This greatly speeds their capability to correctly specify installation spacing, as well as properly size or route vent/gas/water connections for each selected product.

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Commercial

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Circle 81 on Reader Reply Card

BLUE HAWK, Embassy, IMARK to form new cooperative

ELGIN, ILL. — In a joint communication, BLUE HAWK, Embassy Group Ltd. and IMARK Group — all cooperatives with distributor members serving the HVACR, plumbing

and PVF, and electrical industry — announced the formation of “United Cooperative Alliance of America.”

The new group’s mission is to en-

hance business practices across multiple verticals and help build upon the foundation already in place within BLUE HAWK, Embassy and IMARK. All three organi-

zations are member owned and governed with each sharing a firm commitment of full disclosure to its members on all financial and directional issues of their respective organizations.

The newly formed alliance has put together a Board of Advisors consisting of two board members from each organization, along with the three respective presidents and/or CEOs. United Cooperative Al-

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- HIGH QUALITY & WIDELY USED WORLDWIDE
- MEET ASTM F1807 STANDARD
- COMPETITIVE PRICED

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January 25-27, 2010
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BOOTH #3289

Link-tech™
www.linktechtj.com

PEX tools for copper rings (©2008 Pexflow, Inc.)

PEX tools for cinch clamps (Patent pending)

Battery PEX crimp tools

Circle 7 on Reader Reply Card



liance of America looks to help attract and retain the best membership for their respective verticals to enhance the cooperative model for the benefit of its members as they move forward in a diverse and dynamic market.

BLUE HAWK was established in 2005 as a cooperative of independent HVACR distributors throughout the United States. It focuses on HVACR distributors serving the residential and commercial markets and has 224 members with more than 1,000 branch locations. BLUE HAWK is supported by 109 supplier partners.

Embassy was established in 1991 as a cooperative of independent plumbing and PVF distributors throughout the United States. It focuses on plumbing and PVF distributors serving the residential, commercial and industrial markets, and has 67 members with over 500 branch locations. Embassy is supported by 86 supplier partners.

IMARK was established in 1996 as a cooperative of independent electrical distributors throughout the U.S. It focuses on electrical distributors serving the residential, commercial and industrial markets, and has over 1,000 members with over 2,000 branch locations. IMARK is supported by 98 supplier partners.

For further information about each group, visit www.bluehawk.coop, www.embassygroupltd.com and www.imarkgroup.com. A new United Cooperative Alliance of America website will be launched in the near future.

hansgrohe



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Hansgrohe. Das Original. Founded in 1901, Hansgrohe today is known as the "shower expert" and is a major trendsetter in the bath and kitchen industry. Our Raindance showers offer superior performance, thanks to Hansgrohe's award-winning air-injection technology. Our new iBox Universal Plus rough-in valve serves as the foundation to any shower installation, thermostatic or pressure balanced. Hansgrohe proudly supports domestic manufacturing with our Atlanta, Georgia facility, which we have operated since 1996. To learn more please visit www.hansgrohe-usa.com.

Circle 8 on Reader Reply Card

THE PULSE

INSIDE THE TRADE

Letter to the editor

'The turnaround' inspires

Attn: Ellen Rohr
Re: The Turnaround — October 2009

Dear Ellen,

I read your article about Chris Koch and I have to say it was well received. Let me first say I am currently in a federal prison in Fort Dix N.J.

I owned and operated a plumbing, heating, mechanical contracting company (Malta Plumbing and Heating) for more than 30 years. Through a series of bad choices I have ended up here in prison. I am the head plumber here and have many people who strive to learn from me. I also teach a plumbing class of nearly 45 students, two nights a week.

Your story was very encouraging, and I feel it would be very useful for

my students and fellow workers to read. I always take my copy of *Phc News* to work and it is read by other inmates, as well as the correction officer in charge of plumbing. My request is for some copies of this article that I could hand out to students in my class; it will make a difference in their lives. Also, if you know of any source for training materials for my class, please let me know. I have only one text book and I don't have any money for additional materials.

Thank you for your consideration in this. If you send me anything, it must be sent U.S. mail, in an envelope (no boxes) — no hard cover materials (soft cover only).

Thank you again!
Carl Lundstrom
PO Box 2000
Fort Dix, NJ 08640

FUELS

GASOLINE

| Area | \$/gal. Change |
|-------------------------|----------------|
| U.S. average | 2.898 |
| East Coast | 2.878 |
| New England | 2.933 |
| Central Atlantic | 2.903 |
| Lower Atlantic | 2.843 |
| Midwest | 2.883 |
| Gulf Coast | 2.779 |
| Rocky Mountain | 2.895 |
| West Coast | 3.079 |
| California | 3.118 |

DIESEL

| Area | \$/gal. Change |
|-------------------------|----------------|
| U.S. average | 3.122 |
| East Coast | 3.127 |
| New England | 3.138 |
| Central Atlantic | 3.238 |
| Lower Atlantic | 3.079 |
| Midwest | 3.096 |
| Gulf Coast | 3.083 |
| Rocky Mountain | 3.166 |
| West Coast | 3.243 |
| California | 3.260 |

METALS

*Copper

\$3.34/lb.

*Aluminum

\$.99/lb.

Prices valid as of 5/3/10. Fuel information courtesy of the U.S. Department of Energy <http://tonto.eia.doe.gov/oog/info/gdu/gasdiesel.asp>. Arrows indicate change from previous issue.
* Copper & Aluminum prices according to metalprices.com.

TOOL TIPS with Hackman



Hackman to retire

On May 28, 2010, I will be retiring from LENOX after working here for almost 48 years. That's almost half a century! Or 2,496 weeks! Or 17,520 days! But who's counting? It has been an awesome career for me. LENOX has given me opportunities beyond my wildest imagination. It's been an honor to work for a company whose major mission has always been to go the extra mile with the products they make and the people they employ. I am proud to be part of the LENOX family.

I started to work at LENOX on July 30, 1962, working for many years on the manufacturing floor. I've worked on the manufacturing of many of our products over the years. I even had the great thrill of making the very first bi-metal reciprocating saw blade entirely by hand when our then-owner came to me looking for a metal cutting blade to give his plumber. He was desperate to give his plumber a blade that would stop his swearing every



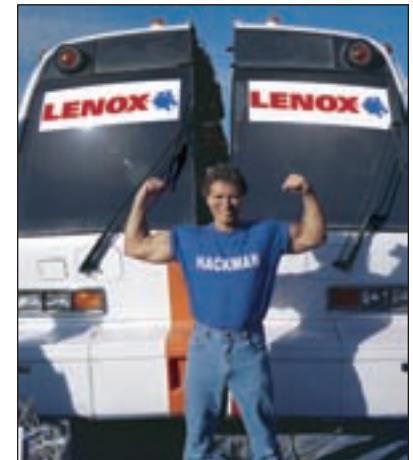
time he broke a blade. The LENOX bi-metal technology did the trick and this blade was brought into production soon thereafter.

In 1981, the salespeople at LENOX were looking for a way to wow customers on the power of the new Hackmaster Hacksaw blades. On a whim, they asked me if I thought I could cut a car in half with the blades. I'm always up for a challenge, so I ac-

cepted, and on February of 1981, I cut an AMC Gremlin in half with a bi-metal hacksaw — all by hand!

It was then that I also earned the nickname "Hackman." And from that day forward, the sales group was so impressed; this became my full-time job. As Hackman, I have traveled the world demonstrating the strength and durability of our tools by cutting lots of cars, as well as a bunch of other stuff, including an oil tanker, cargo plane, box car, house, armored car and even bus at the 1999 Super Bowl XXXIII.

Being on the road and talking directly with our users brought my experience full circle. I was able to demonstrate the products to the people who were using it. I saw the prod-



ucts that I made help professional tradesmen do their jobs better and quicker. They truly appreciated the work that we put into our product.

Last year, I had the great thrill of touring the world with the Hackman World Tour. I traveled to four continents demonstrating our new T2 reciprocating saw blades. As a part of the world tour, I performed cuts on a Double Decker Bus in England; a Jeepney in the Philippines; and a Zamboni in Canada. This has been a wonderful experience and a nice way to cap off my great career at LENOX. I've met so many great people from all over the world.

In closing, I would like to say thank you to all the tradesmen out there who use LENOX products, and wish you many years of happiness in your careers. If you ever need help making a cut, give me a call; I might need something to keep me busy in my retirement years. But until then, you will find me traveling the open road on my motorcycle.

Thank you!
Lee "Hackman" Breton

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Testimonial By: M. Dorn, Plumbing Manager, Godby Plumbing and Heating, Indianapolis, IN.



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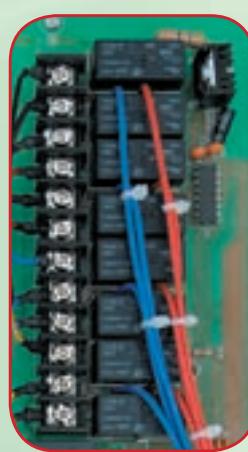


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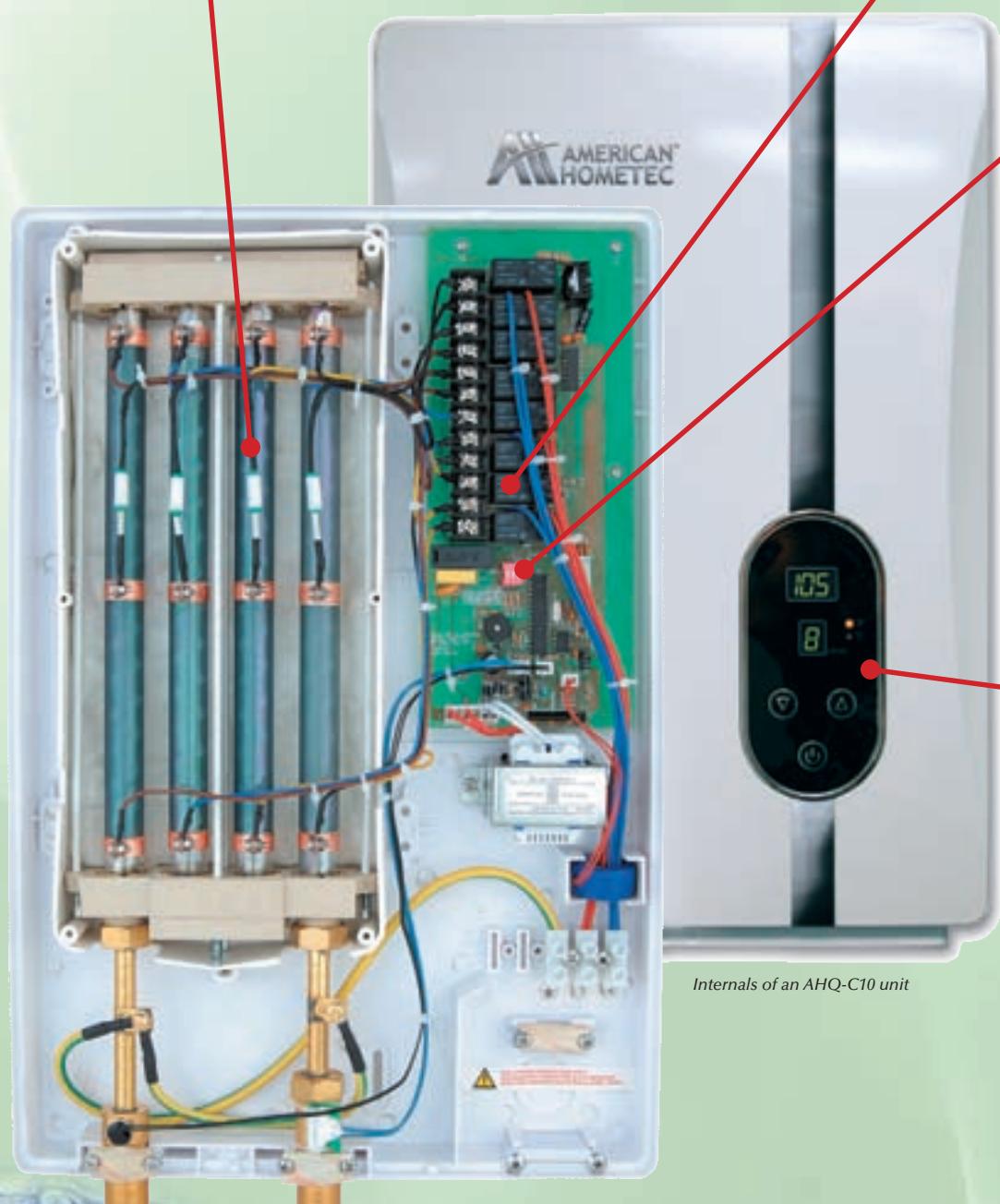
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- Multiple Installation Options
- 3 Capacities in One Unit
- Reduces Inventory Costs
- Application Flexibility
- Reduces Installation Costs



Internals of an AHQ-C10 unit

LED Display

- Easy to Read and Understand
- Intelligence Codes Displayed (errors, notifications, etc.)
- Soft Touch™ User Interface



There's money in that sump pit

Today's homeowner demands energy efficiency; they want products that are going to help them save money, while reducing the effect on the environment — without sacrificing performance and without having to pay an increased price.

And on the front lines of energy efficiency and green technology is the plumbing professional, who often has the job of helping the homeowner navigate cost effective energy improvements.

The good news is, it's been proven over time, that if you offer a product that save's the consumer money, they will migrate to it.

And one such "green" product — that many consumers and plumbing professionals might not think about — is the sump pump.

The sump pump? Yes, the sump pump.

Think about it, sump pumps are cycling on and off, day after day, month after month, year after year — that electricity use adds up. Homeowners are unaware that there's money in the sump pit. By utilizing an energy efficient sump pump, homeowners can reduce monthly bills.

And, as the consumer gets a pump that'll keep their basement dry and help them save money, the plumbing professional has a pump he can easily sell, which helps his bottom line.

So let's take this a step further — how do you determine the energy efficiency of a sump pump? Until now, there hasn't been an easy to read calculation that illustrates a pump's efficiency and performance.

That's about to change!

Introducing "Gallons per Watt/Hour" or G/Wh. It's borrowed from "Title 20," California's energy efficiency standards that cover residential pool pumps. G/Wh is how pool pumps are evaluated and the formula easily applies to sump and sewage pumps.

Simply stated, G/Wh links efficiency and performance by illustrating how many gallons of water at 10' lift are pumped using one watt of electricity.

To calculate G/Wh, take the gallons per hour (GPH) pumped at 10' lift, divided by the energy the sump pump consumes per hour (Wh). $GPH/Wh = G/Wh$.

For more information, visit www.stopflooding.com.



Pumping savings

When shown the rugged heavy-duty construction, energy efficient smart technology, patented dual float system — and reasonable price — the PHCC Pro Series sump pumps from Glentronics is a solid choice. The 1/3 HP PHCC Pro Series S3033 has a G/Wh of 6.25. In other words, the S3033 pumps 6.25 gallons of water per watt-hour used. To get that number — the S3033 pumps 3,000 gallons of water @ 10' lift and uses 4.0 amps @ 120 volts ($4.0 \text{ A} \times 120 \text{ V} = 480 \text{ Watts}$) of electricity. 3000 gallons divided by 480 watts is 6.25 G/Wh.

In contrast, the G/Wh average of competing 1/3 HP sump pumps is 2.23 (pumping 2.23 gallons of water per watt-hour used). That's a big difference — the S3033 pumps almost three times more water using the same amount of electricity!

And that superior energy efficiency translates to lower energy bills for the homeowner. The average cost savings earned when using a PHCC Pro Series S3033 sump pump is \$55.41 per year,** reducing the homeowners energy bills.

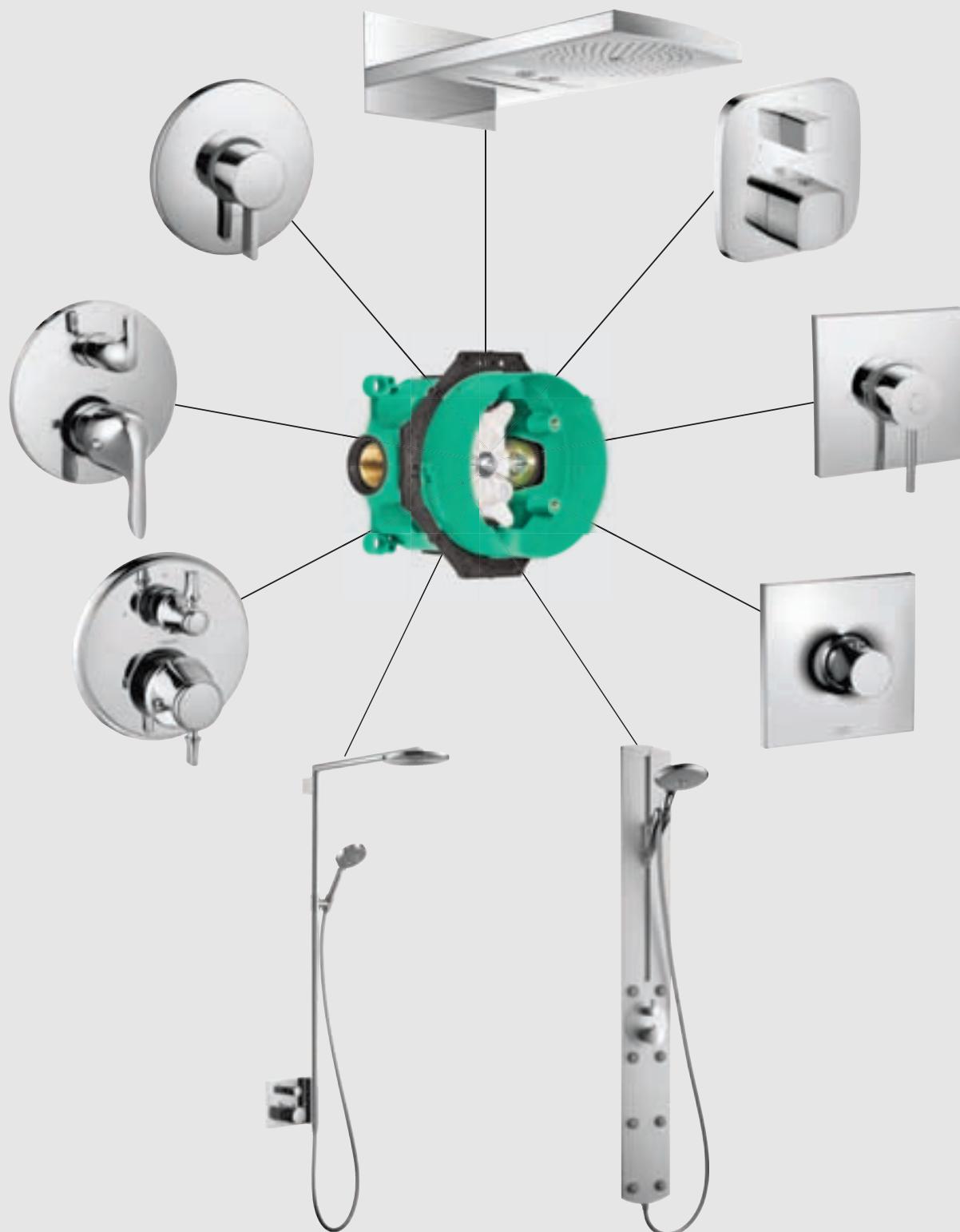
The choice is clear when it comes to efficiency and performance — increase your bottom line by installing the PHCC Pro Series line of energy efficient sump and sewage pumps.

**Based on an average pump sump pump run time of five minutes per hour for one year. The S3033 uses four Amps @ 10'. The estimated industry average is 9.5 amps. Average electric cost per kilowatt-hour is \$0.12.

ALAN SCHULMAN
PRESIDENT/CEO GLENTRONICS, INC.

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Circle 11 on Reader Reply Card



How one plant can power another.

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Circle 12 on Reader Reply Card

Grundfos team members recognized for contributions to the Hydraulic Institute

OLATHE, KAN. — The Hydraulic Institute (HI), the largest association of pump manufacturers and suppliers to the pump industry in North America, and the global authority on pumps and pumping systems, recognized six members of the Grundfos Pumps team during its 93rd annual meeting recently held on Marco Island, Florida.

Tony Radcliff, regional program director for Grundfos Pumps, Mark Rosebraugh, director of engineering for Yeomans Chicago Corporation, John Kelly, CEO for Yeomans Chicago Corporation, Lech Bobowski, senior project engineer, Peerless Pump Company, Dimitar Kalchev, senior project engineer, Peerless Pump Company, and Edward Allis, special

projects manager, engineering, Peerless Pump Company were recognized by the Hydraulic Institute for their technical leadership and contributions in the creation of new and updated ANSI/HI Standards.

These six individuals were recognized for their assistance on the Rotodynamic Pumps for Vibration Measurement and Allowable Values Standard Committee. This Standard applies to all industrial/commercial centrifugal and vertical pumps and covers the vibration measurement and allowable vibration limits.

Additionally, Ed Allis was recognized for chairing the committee for Rotodynamic Pumps Guideline for Condition Monitoring.

REHAU names global CEO

LEESBURG, VA. — REHAU, an international polymer innovator in construction, automotive and industry, announced the appointment of Rainer Schulz to the position of global CEO. Schulz, who has been with the company since 2001, formerly served as deputy CEO, and was also COO with responsibility for the group's operative business. He additionally represented a business division as part of the board of directors.

Moving into a role on the REHAU supervisory board, former CEO Wolfgang Faber has served at the company for nearly 40 years.

Honeywell Environmental & Combustion Controls names VP of sales

GOLDEN VALLEY, MINN. — Rob Andersen has been named vice president of sales for Honeywell's Environmental and Combustion Controls (ECC) Americas. In this role, Rob holds responsibility for leading the ECC Americas trade and retail sales organizations as well as the customer care organization.



Schulz

PMI announced changes to Board

ROLLING MEADOWS, ILL. — The Plumbing Manufacturers Institute (PMI) announced that Jack Krecek, vice president and general manager of the Commercial Business Unit for Elkay Manufacturing Company, has moved into the role of first vice president and will serve as PMI's president in 2011. The move was prompted by the departure of Bill Ball, vice president of engineering for WCM Industries, from the Executive Committee due to increasing demands on his time, which prevents him from fulfilling his PMI role. Ball remains on the Board of Directors as a director at large. Stewart Yang, vice president of engineering for Kohler Co., will move into the role of second vice president. Yang will become PMI president in 2012.

Jeff Baldwin, engineering manager for T&S Brass and Bronzeworks, was named to the PMI Executive Committee as treasurer for the balance of 2010, completing Yang's term.

Speakman appoints president

NEW CASTLE, DEL. — The company that supplies showerheads to well-known U.S. hotels has appointed Rob Cook as its sixth president and first non-family member to lead the company in its 141-year history. Cook will direct initiatives in Speakman's heritage businesses in commercial plumbing and residential shower and bath.

MCAA elects new executive committee members

• **Robert T. Armistead, P.E.**, assumed the office of president of the Mechanical Contractors Association of America, Inc. (MCAA) during the association's annual convention in San Francisco. The presidential gavel was passed from 2009 president Lonnie Coleman to the new MCAA president.

Armistead is president of Armistead Mechanical, Inc., a fourth-generation mechanical contracting and engineering firm with offices in Waldwick, N.J. and Newburgh, N.Y.

• **Michael R. Cables** becomes MCAA's vice president and assistant treasurer. Cables is chief operating officer for domestic U.S. operations at Kinetics, a full-service mechanical contractor providing process and mechanical system installations for customers in the electronics, biopharmaceutical, healthcare, data centers, and general industries. He is based in Wilsonville, Ore.

• **William J. ("Mac") Lynch** was elected as the senior vice president and treasurer. Lynch is the president of William F. Lynch Company, Inc., an HVAC, service, plumbing and pipe welding contractor that serves the Worcester, Mass. area.

• **Mark Rogers** was elected as the president-elect during the association's annual convention. Rogers is chief operating officer of West Chester Mechanical Contractors, Inc., an HVAC, service and plumbing contractor that serves the Philadelphia area.

NASCAR champ Jeff Gordon installs geothermal system

FORT WAYNE, IND. — Four-time NASCAR Cup Series champion Jeff Gordon makes every effort to conserve energy and practice environmental responsibility and that's why Gordon recently selected a geothermal comfort system from WaterFurnace International, Inc., a leading manufacturer of residential, commercial, industrial and institutional geothermal and water source heat pumps, to heat and cool his new home in Charlotte, N.C.

Products from the WaterFurnace Envision™ series are providing heating and cooling to the Gordon resi-



dence. Envision products set the industry standard for efficiency, reliability and quiet operation, using ozone-safe R-410A refrigerant to meet the most stringent EPA requirements. Available in seven single-speed sizes and five dual-capacity sizes, Envision units feature efficient Copeland Scroll™ compressors and coated air coils that resist corrosion and increase equipment life. In addition, a sophisticated microprocessor control sequences all components during operation for optimum performance and provides easy-to-use troubleshooting features with fault lights and on-board diagnostics.

Unit configurations in the Envision line include horizontal, vertical top discharge and vertical bottom discharge. Heavy-gauge metal cabinets are coated with durable poly paint for long-lasting protection.

All Envision series units exceed performance standards for the ENERGY STAR rating and are eligible for tax credits available through the American Recovery and Reinvestment Act of 2009 — 30 percent of the total investment for a geothermal system installed before Dec. 31, 2016. This tax incentive is retroactive to Jan. 1, 2009. Homeowners can also take advantage of utility rebates and state and local tax incen-

tives where available to make geothermal systems more affordable than ever.

To learn more about geothermal comfort systems, visit www.waterfurnace.com.

WATER-TO-WATER GEOTHERMAL heat pumps from WaterFurnace International, Inc., now qualify for the ENERGY STAR® label thanks to a new ENERGY STAR specification for geothermal heat pumps that went into effect Dec. 1, 2009.

The U.S. Environmental Protection Agency's (EPA) specifications for this category of geothermal heat pumps will help protect the environment and reduce energy costs, be-

cause geothermal heat pumps that meet the new standards will be up to 45 percent more efficient than conventional pumps.

"This is the first time geothermal water-to-water heat pumps are eligible for the ENERGY STAR label and comes in response to growing consumer interest in geothermal heating and cooling systems," noted Andy Fracica, director of marketing at WaterFurnace.



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Circle 13 on Reader Reply Card

THE WALL

Dan Holohan's Web site, HeatingHelp.com, features a message board called "The Wall" where hydronic heating professionals post questions and offer answers of all kinds regarding hydronic heating systems. Dan has kindly allowed Phc News to reprint some of the more interesting postings here each month. This section will surely whet your curiosity, so log on to the web site and click on "The Wall" for a treasure trove of useful and just plain interesting information.

Does it matter? — piping strategies

Q: Nearly have all my BB convectors installed need home-run piping leading to a mechanical area. It will have four zones. Does it matter if the convectors in each zone are piped in a continuous loop or can they be piped by teeing off the supply and return line for the zone and run individual pipes for each convector? Just curious!

I'm thinking of putting in unions at all components of the system that could fail so if there is a problem they could be easily replaced.

— Rich

A: It matters. It actually depends upon design. If you only put enough baseboard in to counter the rooms load, and didn't take into consideration the fact that the water will drop in temperature as it works its way through the baseboard in series, then you will have to run your piping in parallel. Preferably reverse return, which will chew up about three times as much pipe as a simple series circuit.

How did you design it to work?

Regarding unions, I am not a real big fan of them because the consumer sees them as being "velcro," and take it upon themselves to replace certain components that they are really not qualified to do. The code requires them, but after I have a conversation with the AHJ, they will usually look the other way. Have only had one hard-nosed inspector force me to put in unions on a boiler.

My thought is, if you don't know how to cut and solder or thread pipe, maybe you shouldn't be working on the system. Unions invite trouble.

— ME

A: Instead of running four sets of piping for four zones, why not run a single loop and install thermostatic

valves at each convector? This will save a lot of piping, give you room-by-room temperature control and eliminate three pumps, relays, etc. and the related thermostats and wiring. You need to run either a supply and return and tee off for each, or run a single pipe using diverter tees for this set up. If just doing zones, you can run a continuous loop as long as it doesn't have too much baseboard on it or is too long.

— Boilerpro

Asbestos vent pipe??

Q: Just looked at a house (circa 1850 or so) that has a pipe buried in the wall that is super hard, but not metallic. I chipped a bit off the edge and it is fibrous. Ever seen a totally asbestos vent pipe? New to me.

— Tim

A: We see some transite vent pipe here. (concrete — asbestos) One customer has a five-story commercial building with it venting the boiler. They used asbestos in just about everything.

— Jim

A: We used tons of it for venting gas furnaces and boilers in the 60s. We also used it for duct work in concrete slabs.

— Bob

Winterization — de-winterization

Q: I called the same company that winterized the home I'm buying to de-winterize it. The home is a duplex with two small steam boilers. I noticed the site glasses were empty for both boilers after they finished, and a few pipes and faucets were left dripping. Also, both ignition heads are missing. The plumbers said the faucets were leaking and said they'd replace them for a fee, of course. And they'd also replace the missing boiler parts for another fee.

Anyone who has first-hand knowledge about the winterization process is asked to respond. I'm somewhat suspicious about the missing ignitions and the rest.

— Nova

A: Were the leads removed to keep the system from firing, after being drained? Surely the two would suffice to prevent firing. Any competent technician would have put them in a safe place, or not removed them at all. Perhaps the tech wanted to immobilize the system due to some hazardous fault. Ask if they have a record of the last service and what was done. Tell the service company that if they are interested in your business in the future, that you require an explanation of these missing parts. Have you filled the system to verify that no freeze damage exists?

— nbc

Forced air vs. radiant in-floor

Q: We're contemplating building our own home (approx. 3,200 sq. ft.) and we're stuck between going the "traditional" route of using a forced-air gas system with A/C or going with an in-floor radiant system throughout with a high velocity A/C system.

Does anyone have a quick pros & cons breakdown for each system? And, does anyone have an estimate as to what is the cost difference between each system based on square foot area? Thanks in advance!

— orangeTO

A: We built a house (3,500 square feet) about five years ago. We decided to go with radiant infloor heating (Viega climate panels on the top of the subfloor) and a separate A/C system. It was a lot more money, but, in my opinion, worth every dollar. We used spray foam insulation and a fresh air ventilation system. We are in the country — northern Pa. — and only use about 500 gallons of oil for the heating season. The comfort is amazing; the house is warm with absolutely no drafts. I haven't regretted spending the money for one second. If I built another house (never going to happen) I would absolutely use radiant heat again.

— Jack z

Follow-up Q: Jack z, you say it was a lot more, but what are we talking about? 25% more? 50% more? 100% more than the forced-air system you were intending on using?

As for what I prefer? I've lived in homes only with forced-air gas and never experienced first hand in-floor radiant, so I don't know if I necessarily "prefer" radiant to forced air.

I'm willing to live with forced air but I'd like to consider radiant in-floor. As I said initially, I'm looking for some help explaining its pros, cons, cost differential, its lifecycle costs, etc.

— orangeTO

Follow-up A: I think what you should do is get some estimates from qualified contractors. There are many different ways to do radiant heat — tubing above the subfloor, below the subfloor, type of boiler, control strategies, etc. Only a contractor doing an estimate for your house can give you an accurate idea of what it is going to cost.

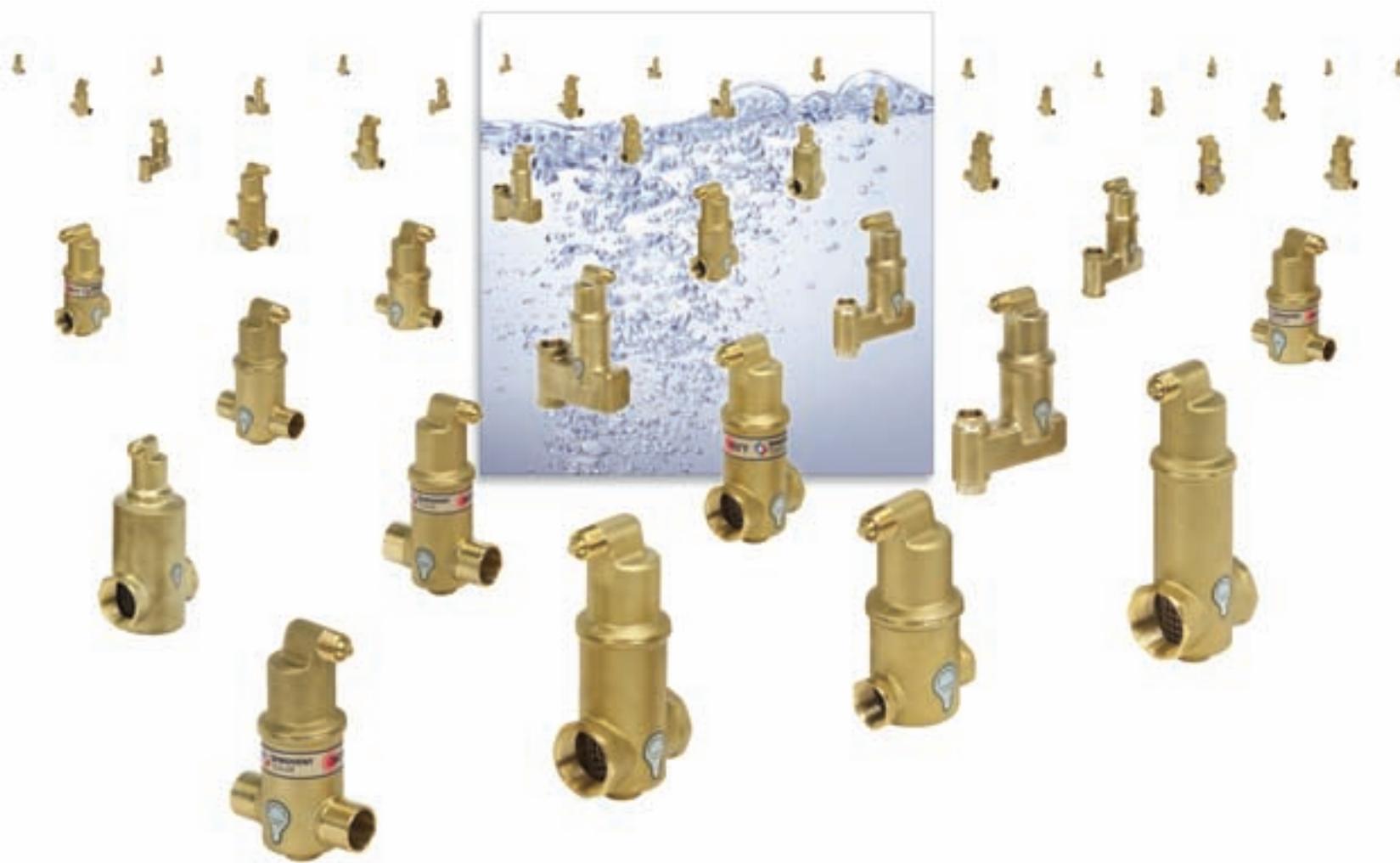
After five years of living with radiant heat, I don't think there are any cons. The system is dead quiet, the warm floors (especially in the bathrooms) feel wonderful, and the system is fairly inexpensive to run.

We have carpeting in our bedrooms. Most of the major carpet manufacturers make low R-value carpeting and padding. This info is very easily obtained. Make sure the carpet installer selects a padding designed for radiant heat.

Building a house is a difficult undertaking. There are literally hundreds of decisions to be made. I think it is easier to justify upgrades that can be seen such as going from particle board cabinets and formica countertops to fine wood cabinetry and granite countertops or from vinyl flooring to ceramic tile.

After five years my wife and I feel that the insulation upgrade to foam and the radiant heat were the two best things we spent extra money on. They are going to give us a lifetime of increased comfort. I think it would be almost impossible to retrofit this house with these items if we didn't incorporate them in the initial construction of the house. — jack z

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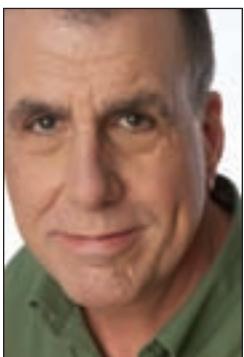
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BY DAN HOLOHAN
contributing writer

Pump and circumstance

I am the proud father of four college graduates, and this being the time of year of many graduations, my thoughts naturally turn to higher education, brought to most of us through the School of Hard Knocks, and at great expense. Some of us, however, take the courses, pay the tuition and won't learn.

Which brings me to pumps and a particular circumstance. I can tell this now that he's gone.

Smokey is currently on the other side of the lawn, but when he was with us, he was magnificent in his thick-headedness. As is the case with some in this trade, Smokey was born with the entire world's knowledge already in his head and didn't feel he ever had to ask for advice. He would take on heating jobs with the total confidence that comes with a thick skull, and when things went south, he would continue to move in the wrong direction because that is the nature of a man who already knows everything. Physics, biology and mathematics mean nothing to such men.

Smokey believed that cigarettes were harmless because his father had had an uncle who smoked until he was nearly 90 years old, and if it was possible for that man to smoke for so many years without ill effect, then all the doctors in the world were wrong. For Smokey, the exception was the rule, and he was that exception.

Smokey used one match in the morning to get himself lit off and this was only because he had to sleep for a bit at night. If he could have kept last night's last cigarette burning through the wee hours, he would have used its still-glowing butt to get himself going at first light, but no one makes such a cigarette, so he used the one match and sucked smoke all day, as though it was a religious calling.

He asked for my help one day, but in a way that fit his character, meaning that he didn't actually ask for help (men who know everything require no help). He merely called to say that I really needed to see this horrible air separator, which was never able to vent all the air from this heating system that he had just installed because it wasn't as good as the ones they used to make.

"It vents whenever the pumps are running," he said. "It's never finished. I hate it, and you should hate it, too. You should write about it in the magazines and tell everyone to stop buying this air separator because it never stops venting. It can't get the job done."

"Where is all this air coming from?" I asked.

"The air separator is making it," Smokey said, and there was not a trace of doubt in his voice. The man was born with his mind made up.

So we got together on the job, which had radiant tubing in a concrete slab. It was Smokey's first radiant job, but that was not a problem because Smokey already knew all there was to know about radiant floor heating. "You put the tubing in the concrete," he said. "You heat the water, and you pump it through the tubing. The building gets hot."

See what I mean? Magnificent.

It was around 9:30 in the morning, and Smokey was bashing his second box of Marlboros for the day into his left palm before tearing at the cellophane with his teeth. "These pumps suck, too," he said. "I want you to tell people about them. Tell them not to buy them."

"Why?" I asked.

"Look at how many you need to get the job done!" he said.

There were six of them, and Smokey had bolted them together, flange to flange, and on the return side of this cast-iron boiler.

"You get a special on these circulators?" I asked.

"That's how many you need to get anything moving

through the tubing," he said. He lit another Marlboro and left the stub of the last one burning on the edge of the boiler.

"How much tubing do you have on this job?" I asked.

"I don't know," he said, "probably more than a thousand feet."

There were no manifolds. The boiler had a 1 1/2" supply, which Smokey had reduced to 3/8" after leaving the air separator (which never seemed to be able to finish the job). The single tube then entered the concrete floor like a deep-space voyager and eventually returned from the concrete on the other side of the boiler, where it connected to an air vent that was the size of a can of Budweiser. The first of the six circulators followed. From there, it was a hydronic daisy chain of pure pressure. It looked like the Six Flags of heating.

"You don't believe in radiant circuits, do you?" I said.

"Wadda ya mean?"

"A thousand feet of tubing, broken up into, say, five 200-foot circuits?"

"Too many chances for leaks," Smokey said.

"You buried more than a thousand feet of three-eighth-inch tubing as one long piece, didn't you?"

Smokey lit another Marlboro, spit a fleck of biomaterial, and nodded. "Yep."

"That's why you need all these pumps," I said.

"I know," he said. "One's not strong enough. You should write about that."

"Oh, I will," I said. "And that's quite a boiler bypass."

Smokey had piped a half-inch copper line from the supply side of the boiler to the suction side of his circulator railroad. There was a ball valve in the line for balance. It was closed.

"Gotta protect the boiler from low temp," Smokey said.

"I'll bet the boiler comes up to temperature quickly."

"Like a rocket," Smokey said. "But you're here for that lousy air separator. Listen to that thing."

It was whooshing, all right. It was nearly as loud as the Budweiser-size air vent on the suction side of Smokey's circulator sculpture. He was staring at the air separator and shaking his head. "Garbage," he said, exhaling a cloud of smoke, which I watched swirl right into the Bud vent.

"Have you ever noticed," I said, "how blowing and sucking sound about the same?"

"Wadda ya mean?" Smokey asked.

"I mean how air, when moving quickly through a hole, makes about the same sound, whether it's going this way or that way. Blowing or sucking? Ever notice that?"

"Can't say as I have," Smokey said.

He lit another smoke, blew out, and once again, the Bud vent sucked it right in.

"Do you know about the point of no pressure change? How it's at the place where the compression tank is? And if you pump toward that point with a big enough pump, or with, say, six pumps piped in series, stem to stern like this, you're going to get quite a negative pressure on the suction side of that pump. Or pumps."

"Huh?"

"Blow some more smoke that way," I said, pointing to the Bud vent. He did. The vent sucked in the smoke nearly as quickly as Smokey was blowing it out.

"Wow!" Smokey said. "A system after my own heart!"

"Now watch over here," I said, pointing at the air separator. He did. "You won't see the smoke come out because this isn't a hookah."

"Huh?"

"You're sucking in air because you're pumping at the

(Turn to Holohan, page 128.)

"Where is all this air coming from?" I asked.
"The air separator is making it," Smokey said, and there was not a trace of doubt in his voice.
The man was born with his mind made up.



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Circle 15 on Reader Reply Card



BY BRISTOL STICKNEY
contributing writer

Solar combisystem – case study: Los Alamos, N.M.

When the time came for the old Los Alamos landfill to be upgraded to a modern solid waste transfer and recycling center, the County took the opportunity to create a public showcase for energy efficiency and sustainability. The new headquarters building was designed from the ground up to include many of the solar hydronic features we have been discussing here in this column. The system heats domestic hot water and radiant floors with a bank of seven, flat plate solar collectors. A high-efficiency boiler/storage tank provides solar heat storage and automatic backup for both heating loads. It also includes web-connected multi-stage room thermostats and night sky radiant cooling in summer.

One way to generate community interest in solar heating is to put it on public display. Despite its humble utilitarian purpose, the building serves as an excellent center for public education. Sooner or later, virtually everyone who lives in or near the town of Los Alamos makes a trip to "the dump," or at least drives past it on the highway. And when they do, they can't help but notice the solar collectors on the front of the building and the other sustainable features put to practical use in this facility.

Los Alamos County "Eco Station" (Solid Waste Transfer Station)

Construction of the Eco Station began in August 2007 and it opened in November 2008.

The facility is designed for Leadership in Energy and Environmental Design™ (LEED). The County Council took action in 2006 to require that all new County owned building projects be designed and built to meet at least LEED Silver standards, have 25% better energy efficiency than a standard building and incorporate water savings measures.

The Eco Station is a demonstration project for Los Alamos County and the State of New Mexico of green building and alternative energy. It is the County's first green building project. Los Alamos County has a goal to become hydrocarbon independent, and thus plans to build energy efficient buildings and incorporate alternative energy wherever possible. As a result, the administration building at the Eco Station includes solar heating and hot water — which was made possible by support

from New Mexico Energy Minerals and Natural Resources Department.

The LEED design is reflected in the project's name — the County named their new transfer station the Eco Station because of the green building concepts and focus on recycling. The County was already recycling 40% of the material that came to the landfill, and the Eco Station now provides opportunities to recycle even more. Asphalt, concrete, brush, metal, tires, oil, batteries, cardboard and mixed commercial and residential recyclables are all recycled.

System description

This solar heating system integrates space heating and domestic hot water heating into a single system similar



Unglazed solar heat exchanger panels mounted horizontally on the roof help provide summer cooling in the building via night sky radiant cooling. Heat is removed from the mass floors by circulating boiler fluid through the floors at night, passing this heat "backward" through the panels, where it is cooled by radiation to the night sky. Roof of Eco Station features Heliocol HC-50 unglazed plastic radiator panels for cooling.

to the "Combi 101" system often discussed in this column. The controls intelligently distribute heat from the solar collectors and a natural gas backup boiler to various heating loads employing a system of temperature controllers, pumps, tanks, heat exchangers, and thermostats. The concrete radiant heated floors are insulated underneath with "blueboard" foam and are used as thermal mass to store solar space heat by day, comfort-controlled by the 2-stage room thermostats. An insulated 80-gallon water tank increases the solar heat storage and is also used for domestic hot water (DHW). There are two sets of showers located in the building, so the DHW usage is higher than a typical office building.

The building was designed with a solar orientation. Flat plate solar collectors are oriented to true south on a vertical wall and filled with a 50% mixture of non-toxic, high-temperature-inhibited propylene glycol and 50% water. One direct current pump, powered by a 30-watt photovoltaic (PV) module, circulates the glycol/water mixture through the solar collectors. The glycol solution gains heat as it passes through the collectors then circulates to the mechanical room through insulated copper tubing. Once inside the mechanical room, the glycol solution passes through a flat plate liquid-to-liquid heat exchanger and back to the collectors. Boiler fluid (water in a closed loop) is heated by the exchanger and then circulates

(Turn to Solar energy shines... page 26.)



Flat plate solar collectors on a vertical wall are filled with a 50% mixture of non-toxic, high-temperature-inhibited propylene glycol and 50% water, circulated by a direct current pump, powered by a 30-watt photovoltaic (PV) module. South face of Eco Station uses PV panel for solar glycol pump (30-watt rating) and Viessmann solar heat collectors with shipping covers removed.

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Circle 16 on Reader Reply Card

Solar energy shines in county's 'Eco Station'

(Continued from page 24.)

through the primary check-loop to the heating loads.

Use of a photovoltaic power source for the solar loop eliminates the need for controls to start or stop the solar circulating pumps when solar energy is available. Additionally, using a photovoltaic panel to power the glycol pump allows collector fluid to continue to circulate through the collectors even in the event of a grid power failure during sunny weather.

Heat is delivered into a primary check-loop and distributed to the living areas through radiant floors by circulating heated boiler fluid from the primary loop through cross-linked polyethylene (PEX) tubing in the floors of the building. This fluid

is heated by the solar collector loop heat exchanger or by the burner in the boiler. Automatic tempering valves are provided to maintain a safe and comfortable operating temperature for the PEX tubing.

Heating system control is accomplished using two-stage thermostats connected to zone controllers. Thermostats communicate directly with the zone controllers which open zone valves and start circulators according to temperatures in the building. A group of Tekmar digital controllers are used to read solar collector fluid, primary loop, storage tank and domestic hot water temperatures. These digital controllers determine which source of heat should be used to satisfy the thermostats.



Hydronic tubing layout with HePex radiant on a cold winter's day. Concrete radiant heated floors are insulated underneath with "blueboard" foam and are used as thermal mass to store solar space heat by day, comfort-controlled by 2-stage room thermostats. During warm months the floors act as heat sinks to help accomplish nighttime radiant cooling.

Summer cooling in the building is accomplished in two stages. First priority is night sky radiant cooling, which can pre-cool the thermal mass of the floors at night whenever the weather permits. Heat is removed from the mass floors by circulating boiler fluid through the floors at night, passing this heat "backward" through the solar heat exchanger, warming the solar glycol at night. The warm glycol is circulated through unglazed panels mounted horizontally on the roof, where it is cooled by radiation from the night sky. A refrigeration air conditioner is available to cool the building through the fresh air ductwork as

a summer backup system only when the night cooling is unavailable.

System components

Since a picture is worth a thousand words, I am including construction photos of the Eco Station administra-

The Eco Station is Los Alamos County's first green building project.

tion building. The major components can be located with the photos.

Not shown in photos — Prolifix NT120 web-connected thermostats.

The engineer in Los Alamos County who deserves much of the credit for guiding the Eco Station from concept to operation is the Environmental services manager, Regina Wheeler. The building is available for tours. For more information, look up the web site: www.losalamosnm.us/PROJECTS/E NVIRSERVPROJECTS/Pages/Eco Station.aspx.

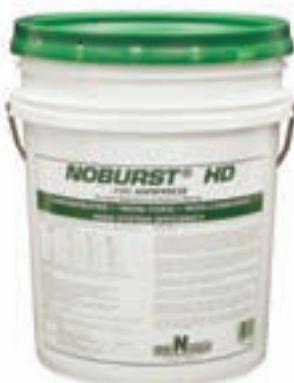
In the construction photos, the final pipe insulation has not been installed on most of the exposed copper pipe. High temperature pipe insulation is recommended. Brand names, organizations and manufacturers are mentioned in these articles only to provide examples for illustration and discussion and do not constitute any recommendation or endorsement. ■



Hydronic heating system in mechanical room. Components include: Voyager 80-gallon stainless steel storage tank with condensing boiler gas back up for heat and domestic hot water; Taco circulating pumps (green pumps); Crown "brazed plate" heat exchanger CBP5X12-20 (foreground right); Laing PV-direct solar glycol circulator (small bronze and black/silver pump); Taco EBV zone valves (near the floor); ZVC control boxes and SR relay enclosures (green boxes); and Tekmar 155 and 152 differential and set-point controls (mounted on gray box).

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Bristol Stickney has been designing, manufacturing, repairing and installing solar hydronic heating systems for more than 30 years. He holds a Bachelor of Science in Mechanical Engineering and is a licensed Mechanical Contractor in New Mexico. He is the chief technical officer for SolarLogic LLC in Santa Fe, N.M., and is involved in training programs for solar heating professionals (visit www.solarlogicllc.com for more information.)

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Circle 19 on Reader Reply Card



BY ELLEN ROHR
contributing writer

Is there a teacher in you?

Now and then, someone will sidle up to me in the back of the room after a seminar and ask, "How did you get started as a speaker?"

To which I respond, "Why do you ask? Are you a speaker?"

"No, I just think it might be fun to give it a try someday?"

Ahhh! This is what I believe: If you are asking, you are on the path. Not everyone wonders what it would be like to be a speaker, coach or consultant. If you are asking, listen to your intuition. There is a teacher in you!

"Leaders are teachers." — Jack Welch

You can use the word coach or consultant. If you teach in front of a group, you are called a speaker. If you speak from the pages of a magazine, you are called a columnist or a contributor. They are all the same thing — teachers. Do you feel drawn to share what you have lived or learned with others? I wholeheartedly encourage you. You have a unique voice and a unique life experience. You can find an audience who can hear what you have to say — just because it's you saying it.

My path...

I've been fortunate to learn at the feet of so many great mentors. My greatest business teacher, Frank Blau, helped my find my awesome career. Frank taught me business basics. Desperate to fix our broken business, I wrote him a letter; he gave me a call. He took me under his wing. Thanks, Frank, for helping me figure out my assets from my elbow and become a savvy businesswoman. My husband Hot Rod and I turned our business around. We got out of debt, and started to build assets. Money buys options. One of the options we created was that we could sell our business and move on to different careers.

We sold our company — to our employees — a friendly coup! At that point in my life, I had the freedom to ponder my next move. How could I serve? What do I have to offer? I realized that if a smart, educated gal like me didn't know business basics, I bet lots of others didn't either. So I hung up my shingle and started a consulting business. I've worked with our industry's greatest groups and gurus. I had the opportunity to start a national franchise with the help of brilliant venture capitalists. I've made lots of mistakes, but there are lessons in the mistakes. Every day I learn from the wonderful folks I work with. It's an honor to help others as I have been helped. Making money, building wealth, creating opportunities — I love business. And I get a total rush out of being on stage and sharing our Bare Bones Biz mission — good business expands peace, prosperity and freedom for all of us. I pinch myself that I get to do this every day.

Get going on your path.

Here are a few suggestions for developing your career as a teacher:

Be a good student

- Take classes to learn about what you are interested in, as well as how others deliver content.
- Work with consultants. If I don't know something I want to know, I will gladly pay someone to teach me. A good teacher helps you discover your own answers. In addition to being my business partner, Al Levi is my consultant. He is the best systems man in the industry. We meet yearly to review my Biz Plan. Check him out at www.appleseedbusiness.com
- Go to seminars. Note the information, and watch how the speaker crafts his or her program. Pay attention to the use of stories and exercises. Not all teachers do well

on stage. Here's one who was born for it. www.kennychapman.net.

Consult yourself

- Fix your current business so you can leave it or sell it. If you haven't yet, read "The E Myth" by Michael Gerber. If you have, reread it. Your business is your playground for your developing leadership and teaching skills.

- BEWARE! I know dozens of folks who jumped into their consulting businesses, or lined up for the presidency of trade associations, to the detriment of their own businesses. Build the foundation so that you can take the leap to the next career. Otherwise, it will suck you back in and you may have a mess to clean up.

- Take your own medicine. If you were to pay YOU to help you with your business, what would you tell yourself to do? Create some options — more time, more money. Freedom to do what you want to do. This is where your unique content comes from. Write it down. Create your language. Document your own systems. It doesn't have to be fancy. One of my teachers told me, "The simpler you make it, the more powerful it becomes."

Speak. Join Toastmasters. Or take a Dale Carnegie class. Or both. These groups are "old school" and just as relevant today as ever. Use them to learn classic speaking technology and practice your craft in a safe setting.

Write. Dan Holohan told me to write like you are talking to a friend. Reading is a private affair, a solo activity. Writing can help you connect, one to one, with millions of people. Dan is one of the best teachers on the planet and writes like a man on fire. Page back for his column and check out his rockin' site www.heatinghelp.com.

Build your teaching business. Everything you've learned about business will help develop your next business.

- Put a Biz Plan together. Create a Biz Plan Binder and put your Plan together. Ask and look for answers to the big questions: What are you going to teach? Why? For whom? How? When? How much? Start fleshing out the Plan and Procedures. Create your Operations Manuals. Business is business — apply the basics to your new venture. I've got some business planning tips for you at http://barebonesbiz.com/detail_bbbp.html.

- Start saying YES. You don't have to be all the way ready. Aim for 80% ready.

- Charge for your services. Raise your prices as often as you raise your self esteem. We give away a half hour of my time — but you have to jump through a few hoops. And, I am happy to give away 2.5 hours of my time each month to meet new folks. Sometimes I am a good fit for what they want and need. If so, we send them an agreement or steer them to one of our online Webinars. My on-site services are pricier than over the phone. I bet only a handful of people know what you know. And only one person can deliver it like you can. Price accordingly.

- Study other businesses. Check out the websites of your favorite teachers. Check out mine! www.barebonesbiz.com Notice how we have lots of fun, free advice — and if you want more, you can find (and buy) more. I love Jeffrey Gitomer's site, too. Check it out at www.buygitomer.com I was inspired by Ali Brown's site, too. She charges up to a \$100,000 to consult with her — in a small group setting! Check out this Internet queen at www.alibrown.com.

Be of service. Whatever you offer, teach it in the spirit of helping people. Mark Victor Hansen said that he teaches life enhancing information that makes everyone

(Turn to Ellen, page 128.)

You can use the word coach or consultant. If you teach in front of a group, you are called a speaker. If you speak from the pages of a magazine, you are called a columnist or a contributor. They are all the same thing: Teachers.

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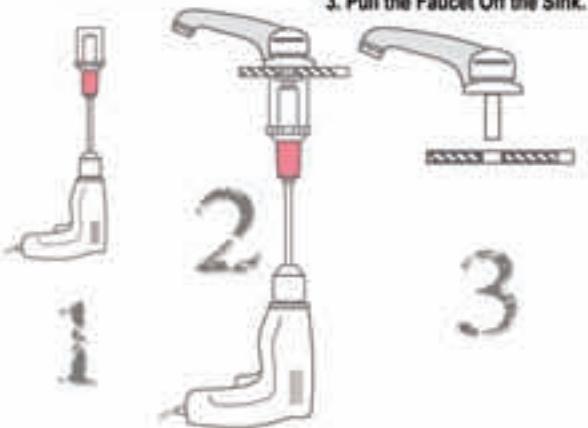
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Circle 20 on Reader Reply Card



RICHARD P. DiTOMA, L.M.P.
contributing writer

Columbus – a PHC contractor? What if?

Have you ever wondered about what triggers human beings to follow a certain direction regarding their actions? Christopher Columbus was not the first person to walk on the soil of what was to become known as the New World.

After all, there were already people in the new world when he arrived. Some think that they migrated through Asia into Alaska and traveled to the North, Central and South Americas. Others might believe that they were indigenous to the Americas. There are those of the belief that Leif Erickson landed in North America before Columbus.

Regardless of who was first, they all were part of actions, which led to the forming of the greatest nation on Earth. A nation built on the premise that all men (and women) are created equal with certain inalienable rights such as "life, liberty and the pursuit of happiness."

Focusing on Columbus, you might wonder what was going through his mind that brought him to the conclusion that he could reach the East by traveling westward. The common opinion of his day was that the world was flat. The only thing someone would accomplish by sailing to the end of the world would be to have to turn around or continue and fall off the edge.

But, good ol' Chris questioned the theory of a flat world. Maybe it was because whenever he sailed on a ship, the horizon which he saw never became closer. If the world was flat, the distance between where he was and where he sailed would become shorter as he approached and eventually reached the end of a flat world.

He might have noticed that the sun always rose in the East and set in the West. Putting aside the fact that the Earth revolves around the sun and not vice versa, the rotation might have given Chris pause to think the Earth was spherical rather than flat. Whatever ran through his head probably became the catalyst that led him to seek a shorter route to the East by traveling in the opposite direction.

The New World of opportunity was found because it existed and people like Columbus, Erickson and/or those migrants took a risk to improve their lives. Columbus didn't find a shorter route to the East. But, because of his powers of observation, intelligence and courage, he discovered a New World of opportunity. For that, the world owes him a debt of gratitude.

If Columbus was a PHC contractor, and acted as many do to this day, he probably would have just said the world is flat because everyone says so and I am staying where I am because I don't have to think or take risks.

He would have charged for his PHC services like many contractors, by the hour at a rate that was at least a dollar cheaper than his competition. But, that would result in his competition lowering their rates a dollar less than his rate. He, in turn, would then lower his rate below their rate. As this price war continued and they reached a zero rate value, they could then start battling over the amount they would pay their customers for the right to perform services for them. That type of thinking could never really get Columbus where he wanted to go. Columbus would have boxed himself into a smaller world with less opportunity.

Time and material pricing puts you in a box. It doesn't allow you to get where you want to go. Instead of sailing the sea of success, you would be adrift on the sea of stress. If you charge by the hour at a rate that has does not allow you to recover your true cost while giving you a chance to earn a profit, you are as wrong as those who believed the world was flat. A "t & m" pricing method cannot afford you enough money to grow your company properly so that you are financially solvent and staffed with people who really want to deliver excellence to your clientele.

To succeed you need a good idea, proper business game plan, capital and some luck. The good idea is usually to cash in on your trade skills by delivering your expertise to your

clientele. You must utilize a sound business game plan that does not resemble a chicken running around without a head. The plan must allow you the opportunity to afford to deliver excellence to consumers. You must never employ a pricing structure, which is usually below your true cost. And, you must avoid the temptation to charge a dollar less than your ignorant competition. If you don't do these things, the capital with which you started your enterprise will be squandered on poor preparation, silly practices and bad business management. Then, you will find yourself adrift on the sea of stress with regard to your PHC contracting business. If you want to change your direction, just do it. Don't be blinded by the erroneous beliefs of those who don't know what they talking about.

Sit down and make a game plan with a set of protocols based on common sense and the fundamentals of mathematics. $2 + 2 = 4$. It never equals less. It never equals more. Stop guessing at your prices. Stop worrying about what your competition does and charges. They are probably as wrong about their prices as the people of Columbus' day were wrong with their flat world theory. Identify and calculate your true operating costs and choose a proper profit margin before developing any selling prices. Always seek to deliver excellence to your clientele.

Don't fool yourself into thinking you can do the job for less just to get the job. That will only lead to the delivery of mediocrity to your clientele. Seeking to get every job at prices that are at or below your true cost is stupid. It is more important to be concerned about the quality of your work and that your prices allow you to recover your true costs and earn the reward you deserve for the delivery of excellence.

Hire people with integrity, loyalty, aptitude, great attitude, self motivation, excellence and the ability to follow orders. If you hire people just because they were available and they don't have those traits, you'll defeat yourself.

Choose the consumers you serve like you would choose a good employee. They may have questions about your business procedures or their problems. Know the answers before the question is asked. Be honest with your clientele and expect the same honesty from them. They are as human as you are.

Hone your communication skills. Ninety-eight to 99 percent of consumers are good people. Remember that there are two types of buyers, price buyers and value buyers. If a consumer only wants to use your services at prices which do not allow you to recover your cost and earn the reward you deserve for the job, you don't need them. Don't be afraid to fire a client.

Fortunately for us, Columbus wasn't a PHC contractor. He knew there was another way of doing things that made sense. And the New World was discovered. But, before Columbus put his theory into practice and set to sea in a westward direction he needed help from the Queen of Spain. ■

There is a better way for PHC contractors to do things. Embrace Contract Pricing! It will enable you to discover a new world.

If you need assistance to begin your voyage on the sea of success, give me a call at 845/639-5050.

I wish you well, and Bon Voyage.

Richard P. DiToma is a business consultant and contractor with 36 years of experience in the PHC industry. He conducts seminars, evaluates business operations, publishes customized price guides for contractors and offers continuing support.

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- On-Screen titler with virtually indestructible keyboard is impervious to water, dirty hands, grime from the field.

Call 800-245-6200
or visit www.drainbrain.com.

Circle 150 on Reader Reply Card

Gen-Eye Spectra™
160 GB Hard Drive and 15" Monitor



Top of the line features are packed into the Gen-Eye Spectra™ with large capacity hard drive and large large screen monitor.

- 160 GB built-in hard drive records up to 290 hours of inspections.
- Videos can be copied to built-in DVD recorder to give to customers.
- High resolution 15" LCD monitor offers clear view of all the action.
- On-Screen titler with virtually indestructible keyboard is impervious to water, dirty hands, and grime from the field.

Call 800-245-6200
or visit www.drainbrain.com.

Circle 153 on Reader Reply Card

Digital Pipe Locator
With Push Button Depth Finder

Let's you know exactly where to problem is, and how deep to dig.

- LCD display panel provides clear digital readout, as well as graphic display, and an audible tone.
- Locate camera in clay or plastic pipe as deep as 20 ft., locate in cast iron down to 10 ft.

Call 800-245-6200
or visit www.drainbrain.com.

Circle 154 on Reader Reply Card

Rescue Wrap™
Extends the life of your camera push rod

General's new Rescue Wrap acts like a splint for partially kinked, fatigued, or cut or abraded camera push rod to repair it before it's severely damaged. Easy to use, the Rescue Wrap takes just minutes to apply and helps prevent expensive repairs.



Call 800-245-6200
or visit www.drainbrain.com.

Circle 155 on Reader Reply Card

Self-Leveling Camera
Upgrade older generation Gen-Eyes

If you have an older generation Gen-Eye camera system, you can now upgrade to a Self-Leveling color camera.



- It keeps the picture right side up as camera glides through the line.
- Works with Gen-Eye2 and Gen-Eye3 systems.

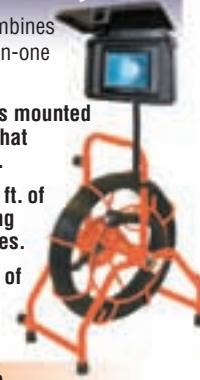
Call 800-245-6200
or visit www.drainbrain.com.

Circle 151 on Reader Reply Card

Gen-Eye POD™
Lightweight, Economical Inspection System

The Gen-Eye POD camera system combines camera, reel, and monitor into an all-in-one package. You just grab it and go.

- 7" LCD monitor in a padded case is mounted on a flexible gooseneck that swivels for the best viewing angle.
- Full size Gen-Eye POD carries 200 ft. of Gel-Rod® push-rod and self-leveling camera for inspecting 3" to 10" lines.
- MINI-POD carries 125 ft. or 175 ft. of push-rod small enough to trouble shoot 2" to 4" lines.



Call 800-245-6200
or visit www.drainbrain.com.

Circle 152 on Reader Reply Card

Gen-Eye SD™

Video Pipe Inspection System

**Lighter.
Compact.
All-in-one Design.**



The Gen-Eye SD™ gives you all the features of a full size video inspection system in a compact, portable package.

With the SD card reader, you can record video or still images – a one GB card records about two hours of video. Keep a copy for your records and make copies for your customers.

In addition to the card reader, the Gen-Eye SD includes an 8" LCD color monitor and a full keyboard with nine pages of memory for on-screen titling.



The fully adjustable docking arm mounts onto a big capacity reel. It's loaded with tough Gel-Rod™ push rod that protects against moisture damage if the rod is cut or abraded. And the color self-leveling camera makes it easier for you and your customers to follow the action. With this easily maneuverable, all-in-one package you're set to trouble-shoot 3" to 10" lines. You can even mount the SD onto a mini reel to get down to 2" to 4" lines.

The Gen-Eye SD also includes built-in voice over microphone, on-screen distance counter, date/time stamp, AC and DC power cords, and 512 Hz transmitter for camera location.

General
PIPE CLEANERS
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To learn more or to arrange a free demo, call the Drain Brains® at 800-245-6200 or 412-771-6300, or visit www.drainbrain.com/gen-eye.

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Circle 21 on Reader Reply Card

The passion behind the product.



Viega... The global leader in plumbing and heating systems.

www.viega.com

P



May 1, 2010

Friends of Viega,

For more than a decade, Viega has strived to become the preferred manufacturing and distribution partner in North America. Today, I am proud to share with you how the Viega Supply Chain is transforming that dream into a reality.

Every day, the Viega Supply Chain manufactures the most thoroughly tested products on the market and delivers them to your door efficiently and accurately. Since your satisfaction is at the heart of everything the Viega Supply Chain does, we have made it our goal to provide you with:

- 99.4% in-stock availability of all Viega products, all the time
- Shipping your orders within 24 hours of receiving them
- A failure rate of less than .002% or 20 parts per million

We understand the importance of providing our customers not only with the highest-quality products in the world but also industry-leading support after the sale. Our goal is to exceed your expectations by employing knowledgeable and dedicated employees working in state-of-the-art facilities.

To ensure fast and efficient delivery, Viega maintains four strategically located distribution centers totaling more than a million square feet across the United States. This allows us to support our wholesale partners with products delivered just in time to help reduce your inventory and put more money in your pocket.

No matter where you are located, you can rest assured that Viega is incorporating the latest technology to meet your needs. From order placement to product shipping, Viega delivers value when you need it most. Our commitment to customer service allows us to extend our reach to exceed customer expectations around the globe.

To those who have been with us for many years, thank you for your loyalty; to those new to Viega, thank you for your trust. You are a vital part of our growth and our number one priority.

Sincerely,

Robert Boots
VP of Supply Chain Operations

Circle 22 on Reader Reply Card



JOHN BARBA
contributing writer

The big three

For a plumbing and heating contractor to be truly successful — and we define success as sustainable profitability and a high quality of life for the contractor and the employees — he or she needs to possess three equally important attributes.

First, the contractor and his team must have rock solid technical skills. At a bare minimum it's basic technical competence. This includes understanding piping principles, heating and cooling technology, sizing, pumping, electronics, controls, codes, etc. This competence needs to be firm, stone cold.

Many contractors have moved beyond basic competence into the upper echelons of know-how. This is even better.

Technical competence alone, however, isn't enough simply because it doesn't exist in a vacuum. Your competition also has technical competence. Yeah, sure, I know, there are idiots out there, often in abundance. But every single one of your competitors isn't a chucklehead. If you look at it honestly, you'll find that a good many of them are pretty good. And if you're really honest, you might find some of them may even be better than you.

So to achieve the level of success we desire, we need the other two attributes.

The next attribute is rock solid business skills. You need to know how to run your business like a business — not a hobby. You need to have a basic understanding of double entry accounting and you need to be able to read financial statements and understand what they mean. Then you have to be able to make decisions based on what those statements tell you.

But that's not all. You also need to know how to lead and manage people. Unless you're a one-man show (and that's not a bad thing), you're going to have to deal with employees — fellow tradesmen to go out and do the work, office help, bookkeepers, etc. You need to manage them properly, motivate them effectively, train them adequately and compensate them fairly so you won't have to replace them frequently. As Ellen Rohr says, you gotta be able to keep score.

The final necessary attribute is the one no one likes to talk about — but is equal in importance to technical skills and business skills — and that is selling skills.

Why selling skills?

Quite simply, your customers need a reason to hire you. There are lots of other folks out there doing what you do. If someone wants to get three or four quotes on a radiant heating system, it's really not that hard to do.

Are all of the quotes equal? Are all of the competing contractors competent? Are all the products used of similar quality? Are the designs adequate? The customer really has no way of knowing any of this. Someone has to help him.

First off, understand that in the eyes of your customer, you and your competitors are of equal quality until proven otherwise. In their context, if you put a shingle out in front that says you're a heating contractor, the prospective customer will assume you have a basic, minimum level of competence. If one of the competitors you're bidding against is scary bad and happens to get the job, the customer won't find this out until it's too late.

Your job isn't to act as a quality cop. No customer wants to hear anyone say, "Oh my God, don't hire that guy — he's a flippin' butcher. What a hack!"

What each competitor needs to do is to show this cus-

tomer what his or her company brings to the dance. What each competitor needs to do is show the customer why he or she should hire their company. Note I didn't say why the customer should hire their company and not the competition, just why the customer should hire their company. Let the other guys talk for themselves, and then let the best man win.

Your object is, quite obviously, to do the best job of showing your customer why you're the best person for the job. That, boys and girls, is selling.

Selling — the definition

There are lots of definitions out there for selling. Here's Webster's:

1: to deliver or give up in violation of duty, trust, or loyalty and especially for personal gain: Betray — often used with "out" <sell out their country>

Well that doesn't sound very nice. How about this one:

2 a (1): to give up (property) to another for something of value (as money) (2): to offer for sale b: to give up in return for something else especially foolishly or dishonorably <sold his birthright for a mess of pottage> c: to exact a price for <sold their lives dearly>

Yeesh. No wonder no one likes sales people.
Wait, it gets worse...

3 a: to deliver into slavery for money b: to give into the power of another <sold his soul to the devil> c: to deliver the personal services of for money

4: to dispose of or manage for profit instead of in accordance with conscience, justice, or duty <sold their votes>

Nothing to give you the warm, fuzzies, is there? Seems that old man Webster might have been on the losing end of a couple of business deals, don't you think?

Here, on the other hand, is a kinder, gentler definition of selling:

"Selling is defined as helping a customer identify a problem or problems, and then offering solutions to those problems using your own unique experience and skill sets."

Isn't that nice? Helping. What a great word. Who doesn't want to be helper? Offering. Even better. Sounds like something you do at church. Solutions to problems. Man, this is making me tingle all over. Your own unique experience and skill sets. Way, WAY better than "delivering into slavery for money."

What kind of person are you? What are your values, your ethics, and personal code of conduct? The kind of person you are will dictate what kind of sales person you are.

If you're the kind of person who would "deliver or give up in violation of duty, trust, or loyalty and especially for personal gain," well, that's the kind of salesperson you'll be. And you won't sell me anything.

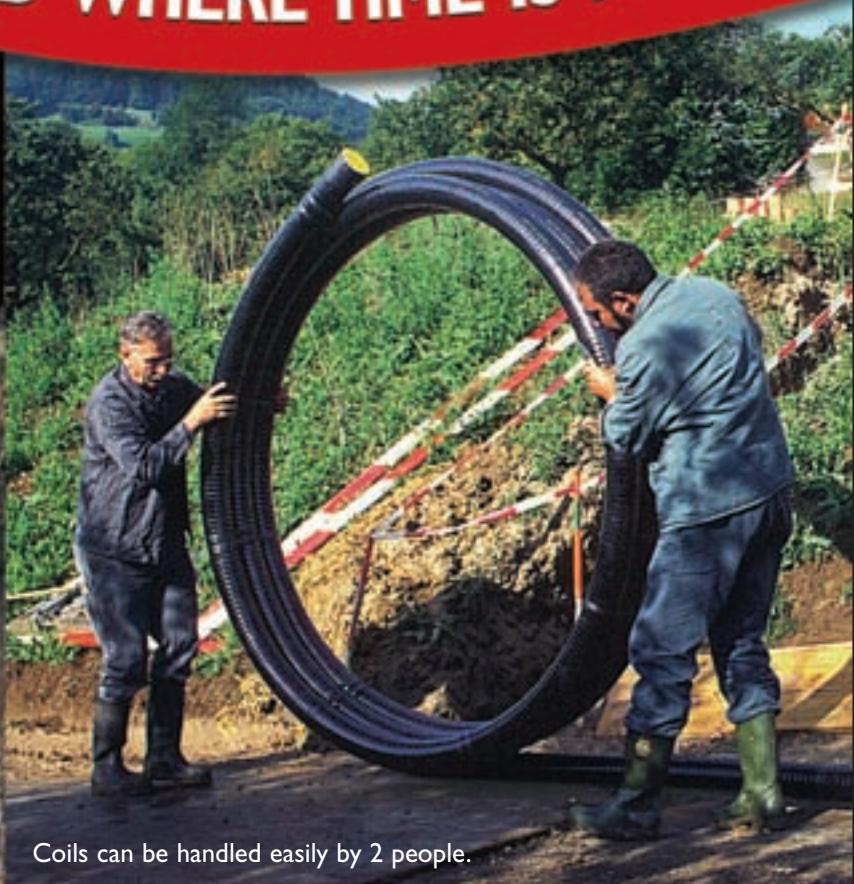
But if you're an honorable person who likes to help and who can offer solutions to problems using your own unique experience and skill set, then that's the kind of sales person you'll be. And you'll no doubt be a successful one, too.

Helping. What a great word. Who doesn't want to be helper?
Offering. Even better.
Sounds like something you do at church.
Solutions to problems.
Man, this is making me tingle all over.

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Product Specialist

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Rovanco Piping Systems

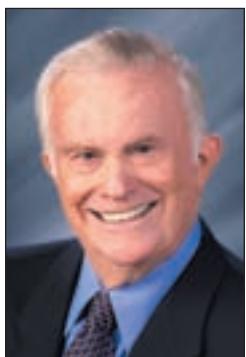
20535 S.E. Frontage Rd.

Joliet, IL 60431



www.rovanco.com

Circle 23 on Reader Reply Card



MORRIS R. BESCHLOSS
PVF and economic analyst emeritus

It's becoming increasingly apparent that the American consumer is returning to his old buying habits, even though the dark shadows of the Great Recession haven't yet disappeared from the scene.

Housing prices on upswing while commercial occupancy lags

While office space vacancies throughout the U.S. are generating double digit percentages, new leases are reflecting a continuing downward spiral. This is especially true of condos, shopping centers, and hotel occupancies. However, assisted living structures and hospital-oriented expansion are leading the charge toward greater construction opportunities as the second quarter gets underway.

Also, the housing market which played a major role in precipitating the building construction and ownership crash in late 2008 is finally indicating the beginnings of a turnaround.

This is manifesting itself in a slow but steady increase in prices, even at the high end of multi-million dollar estates. However, this is not due to any appreciable increase in demand, but the steady decline in inventories, which is manifest in all aspects of the overall economy.

Although some of the nation's regions are faring better than others, in both housing and commercial sectors, the construction industry as a whole is mired in deep dol-drums. With unemployment showing little signs of improvement, and the ominous implementation of new taxes and regulations yet to come, employee expansion on all fronts of the U.S. economy has come to a screeching halt.

Repair maintenance and projects on order are the main stimulus driving the sputtering construction sector. Although a slow and deliberate increase seems to be in the cards, the mid-term Congressional elections seem to loom ever larger as a watershed to the next stage of future planning.

World Trade Organization forecasts banner boom in 2010-11

The World Trade Organization, not known for optimistic hyperbole, is predicting a major comeback in global trade this year, and picking up momentum going into 2011. This universally recognized organization has even indicated that such world import-exports will elevate revenues by close to 10% in 2010, with an even greater expansion in the offing in 2011.

Although it would take an additional 14% increase next year to return global interchange to 2008 levels, the WTO's optimistic tone is derived from the current rebound generating in Southeast Asia, which had been hardest hit by the crash of September 2008.

With the developing nations leading the global recovery for the first time in recorded history, there is a need for the tools to develop these agrarian nations into more balanced economies such as the U.S., Japan, and Western Europe. These will be made available from the more mature industrial powers.

This trend will engender export sectors in the industrialized West. It will particularly benefit America's export sector, which is dominated by the predominance of aircraft, armaments, machine tools and mill supplies.

Also benefiting will be the Mideast oil monopolies, as well as such commodity-rich nations as Australia, Canada and Russia. The fear of protectionism, if it should become reality, is that both developed and emerging nations will attempt to protect indigenous producers, both agricultural and industrial.

However, world dynamics today seem to be more in tune with benefits derived from global interaction than

the disastrous economic isolationism that prolonged and magnified the Great Depression of the 1930s.

If the World Trade Organization (WTO) turns out to be correct in its prognostication, the increasing momentum of international trade interaction will sweep away diminishing protectionist trends. Based on preliminary first quarter results, the WTO targets seem on the right track.

Productivity trumps employment in recovering economy

Although the leading Administration voices trumpeted the minuscule March job creations as signaling an employment turnaround, Secretary of the Treasury Tim Geithner was right on the money when he painted a pessimistic picture regarding a significant jobs turnaround this year.

What makes the current economic recovery different from its predecessors is that this expansion is literally jobless. The statistics speak for themselves. Although the overall business/industry downturn in comparison to the first six months of 2008 is only 3%, the number of employees working full time has been reduced by more than 15%.

My anecdotal surveys, taken over the last six months, reveal that most companies are opting for mechanization, automation, and upgrading on the shop floor as well as the back office, to maximize productivity. Inventories have been reduced to the bare minimum required to meet current demand. The almost one-to-one ratio between sales and inventory is the lowest level in 50 years.

This has provided U.S. business/industry coffers with maximum dollar liquidity with which to insure survival, buy back stock, and increase dividends.

Ironically, fear of further government expenditures following the multi-trillion dollar takeover of universal healthcare, and the anticipation of onerous tax increases and stifling regulations has served to instigate a defensive posture by an increasingly untrusting number of CEOs.

It has also convinced most businesses that they can get the job done without adding to company payrolls. When hiring today, such businesses are much more discriminating in the caliber of personnel hired. In years past, such care in hiring even shop workers was never a factor at a time of business expansion.

To make this scenario even more somber, the two leading economic production sectors, manufacturing and construction, have significantly decreased in scope, making job reduction a permanent fixture within a recovering U.S. economy.

Only an inflated increase in government job rolls will make a significant difference for the rest of the year.

Corporate profits reach pre-recession highs

As expected, 2009 fourth quarter corporate after-tax profits reverted back to pre-recession highs, reaching 7.6% of U.S. gross domestic product. This was up from 6.3% a year earlier, indicating that this year's first quarter should at least equal or improve on such stellar results.

However, policy experts' opinions that this trend will start cutting into current high unemployment may be presumptuous and premature. The substantially higher cost base that Obamacare is expected to saddle most corporations with, is already being slotted into such companies' financial planning. This will manifest itself not only

in future shrinking profit margins, but even greater efforts to shift costs away from personnel salaries and benefit packages to greater mechanization, automation, and upgrading through expenditures on the latest technology.

Corporate managers are expressing grave concern that the Obama Administration's "redistribution of wealth" direction will leave them holding the bag of ever-increasing costs, saddling the bottom line as the year wears on. This shift in managerial direction will prove a boon to makers of communications paraphernalia/appurtenances and the latest equipment development for the shop floor.

Recent interviews with a substantial number of manufacturers, distributors, contractors and retailers revealed severe misgivings about the new healthcare law, and its multi-faceted negative ramifications on business establishments as a whole. Practically all are waiting for the next "shoe to drop."

Based on these contacts, I'm concerned that this backbone of America's economic strength is more apprehensive than ever about the rash of new taxes and restrictions they feel will be forced on them in the foreseeable future.

Although there is practically no interest in protectionism, there seems to be a new wellspring of patriotism. This is manifesting itself in focusing more on the purchase of products offered by American-based companies. This is supported by a perception of superior quality, increased overseas costs, and the greatest need ever for "just in time" inventory.

U.S. consumer recovery spurs post-recession spending

It's becoming increasingly apparent that the American consumer is returning to his old buying habits, even though the dark shadows of the Great Recession haven't yet disappeared from the scene.

Buoyed by a \$5.7 trillion increase in U.S. household net worth in 2009, it seems that more Americans are dipping into some of their savings to visit the malls and department stores, a habit which had been put on hold after the financial crash of mid-2008. That resulted in the highest savings rate in more than 25 years (close to 4%), which is now dropping to a 3.1% average — still remaining in positive territory.

This upward spending shift has created a year-over-year positive spending thrust as high as four per-

cent this year so far. Unquestionably, the impetus from "cash for clunkers," massive discounts, and pent-up consumer demand have all reversed the disappeared deleveraged buying option from consumerism, prevalent throughout the second half of 2008 and most of 2009.

Also helping are a greater tendency for U.S. banks to open their

lending lines, as their balance sheets have swelled to record levels, boosted by record low interest rates offerings by the Federal Reserve Bank.

But still weighing heavily on consumer buying power is the double digit unemployment of job seekers, plus skyrocketing household debt. But even these household liabilities dipped slightly from \$14.5 trillion

during the fourth quarter 2008 to \$14 trillion in a similar period in 2009.

Although the outlook from an economic point of view is brightening, the current governmental power structure will make it increasingly difficult for business and industry to do their part, due to even more taxation and restrictive regulations coming down the pike. ■

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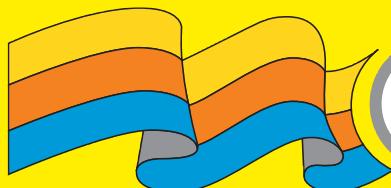
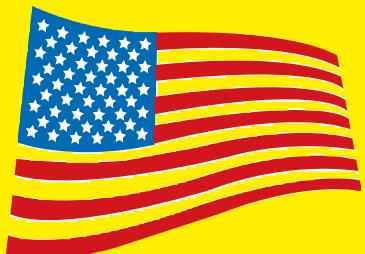
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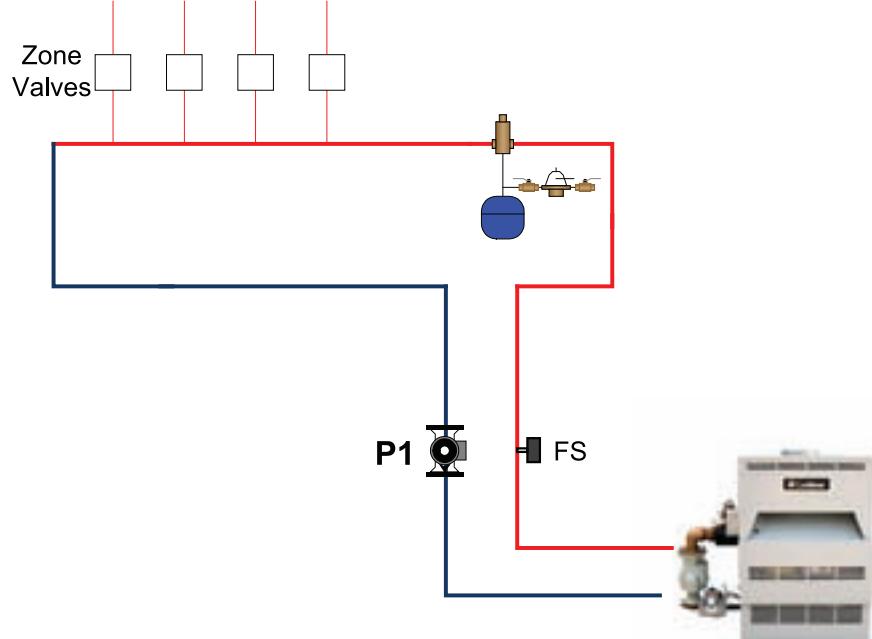


TEL: (708) 594-1700 FAX: (708) 458-0106

The Weldbend Corporation is an American manufacturer of butt-weld carbon steel fittings and flanges $\frac{1}{2}$ " thru 60". The Weldbend plant is located in Chicago, Illinois USA and on the internet at www.weldbend.com.

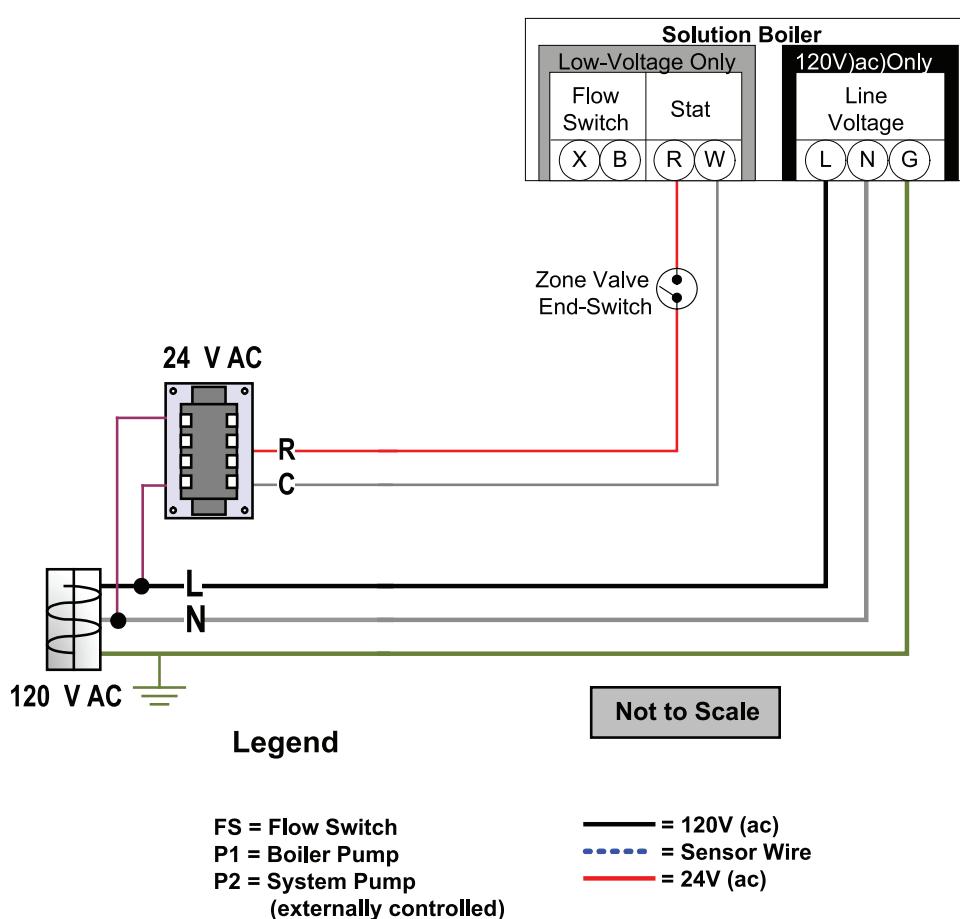


Hydronic Heating Sleuth's Challenge



Gas piping and venting not shown for clarity

Not to Scale



Venting not illustrated for this example and can be excluded as causes for the symptoms listed above.

Polish your hydronic heating sleuthing skills by identifying 3 problems with this hydronic heating system. When you are confident you have correctly identified these problems, log on to www.Lochinvar.com and find the solution.



Symptoms

1. After zone valve end-switch closes, the boiler does not receive the call for heat.
2. Secondary zones are not getting sufficient flow.

HINTS:

- Boiler pump is correctly wired and controlled by integral control on boiler.

Lochinvar is a leading manufacturer of high efficiency residential and commercial water heaters, boilers and pool heaters and is based in Lebanon, Tennessee.

This Hydronic Heating Sleuth's Challenge will be featured monthly in PHC News and represents real life scenarios that we see in the field and hear about from our installing contractors.

We encourage you to test your hydronic heating sleuthing skills and solve the mystery each month and then check your answers against what was actually found in the field by visiting www.Lochinvar.com.

If you would like to contribute a story to us to be considered for inclusion in this feature, please e-mail your information including photos, drawings or electrical schematics plus a description to:

Paul Rohrs - Lochinvar Product Manager
prohrs@lochinvar.com

ANSWER:
www.Lochinvar.com





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Circle 25 on Reader Reply Card

Welcome to the 2010 *Phc News* Boiler Report. *Phc News* has the inside scoop from the top boiler manufacturers about the economy, new product introductions and other industry news and notes. Overwhelmingly, relationships are the key to weathering this economic uncertainty. It is im-

perative to maintain healthy relationships with your wholesaler, manufacturers (especially for training), and, most importantly, your customers. And just as important, manufacturers remain committed to you, the contractor. Here is a compilation of companies interviewed. They appear in alphabetical order.

AERCO International, Inc.
159 Paris Avenue
Northvale, NJ 07647
(201) 768.2400 or
(800) 526.0288
www.aerco.com

Company profile: AERCO International, Inc. (AERCO) is a leading supplier of boilers and water-heating products. Founded by Henry Angelery in 1949, the company introduced a revolutionary design for an indirect-fired water heater that heated water on demand, without storage, at a controlled temperature. This innovation became the standard for water heaters. In 1988, AERCO became the first U.S. manufacturer to offer a fully modulating and condensing commercial gas-fired water heater and extended this design to the hydronic boiler marketplace.

What's new: The new SmartPlate water-to-water heaters help reduce system energy costs by utilizing innovative designs uniquely suited for use with high-efficiency condensing boilers. Capable of supporting up to 90 gpm domestic loads at a 100° F rise, these fully packaged, instantaneous heaters incorporate real-time load tracking capabilities and responsive controls to maintain accurate hot water temperatures under diversified load patterns common in commercial and institutional applications.

All SmartPlate water heaters incorporate a PID temperature controller and a high turndown, electronic control valve to maintain outstanding $\pm 2^{\circ}\text{F}$ temperature control when operated under constant load conditions with variances held to $\pm 4^{\circ}\text{F}$ under normal load changes. Each SmartPlate heater utilizes a counter flow, stainless steel, brazed plate or plate and frame heat exchanger — the most efficient heat exchangers available for indirect water heating — in an instantaneous design that eliminates the need for storage tanks and blending valves.

AERCO also has launched a new website (www.aerco.com) that uses enhanced navigation tools and other features to make it easy to find information on high-efficiency boilers and water heaters, as well as on condensing technology. Plumbing engineers and contractors now have a convenient resource to determine what boilers and hot water heaters are best suited for their projects.

AERCO on the economy: Sales are clearly up for high-efficiency condensing boilers over 2009 in the commercial marketplace.

Notables: AERCO sells direct to the contractor via independent manufacturer's sales representatives located throughout the country.



SmartPlate water-to-water heaters help reduce system energy costs by utilizing innovative designs uniquely suited for use with high-efficiency condensing boilers.

Crown Boiler Co.
3633 I Street
Philadelphia, PA 19134
www.crownboiler.com

Company profile: Started in 1949 as Crown Industries, today's Crown Boiler Co. has grown into an industry leader, offering the latest in hydronic heating technology.

Crown's product offering includes residential and commercial oil- and gas-fired cast iron boilers, as well as residential and commercial cast aluminum condensing boilers. Along with this extensive offering of boilers, the product line includes stainless steel indirect water heaters, hydronic air handlers and warm air furnaces.

Over the years, Crown Boiler Co. has remained true to its guiding principal of



The Bimini Buddy is an optional accessory to go with its line of wall mounted Bimini condensing boilers.

ClimateMaster
7300 S.W. 44th Street
Oklahoma City, OK 73179
(877) 436-6263
www.climateMaster.com

Company profile: Headquartered in Oklahoma City, Okla., ClimateMaster is the world's largest manufacturer of water-sourced and geothermal heat pumps. But the firm has directed its attention to the most meaningful of things, key among which is how best to exceed the needs and expectations of installing contractors. "This a time when consumer demand is pushing for greater volume, and though we are attending to those needs, the greatest need of all is to see to it that product development moves at a pace that assures unerring quality," said Tony Landers, director of marketing.

Serving commercial/industrial and residential markets for more than half a century, millions of ClimateMaster heat pumps have been installed in places where people work, live and shop — including schools, churches, homes, office buildings, high-rise buildings, hospitals, sports venues and assisted living facilities.

ClimateMaster offers the broadest product line of any water-sourced heat pump (WSHP) manufacturer worldwide. Its units include packaged, vertical stack, rooftop, console, water-to-water and water-to-air geothermal, and split systems, and offer the most options in terms of size, configuration, performance and cost. No other manufacturer provides as many options.

What's new: ClimateMaster has developed a new line of Tranquility high temperature water-to-water heat pumps with EarthPure® (HFC-410A) zero ozone depletion refrigerant. The new systems are available in sizes 8, 10 and 12kW in 50Hz voltages and size 10kW for 60Hz voltages (capacities at ground loop heat pump conditions) with ground loop efficiencies (COP) 25% higher than current units on the market. Tranquility heat pumps are rated for water loop heat pump, ground loop heat pump and ground water heat pump applications.

New scroll compressors within the Tranquility units make it possible to generate leaving water temperatures of up to 145°F (63°C) even at ground loop minimum temperatures. They are also among the quietest units on the market due to features such as a double-isolated compressor mounting, discharge and suction mufflers, and fully insulated compressor section. Other standard features include integrated controls, outdoor temperature reset and warm weather shutdown.

And, with ever-increasing energy costs, the new high-temp heat pumps are ideally suited to replace natural gas, propane, or fuel oil boilers.

ClimateMaster is in the process of converting all product lines to the environmentally-friendly refrigerant, HFC-410A.

ClimateMaster on the economy: The 30% tax on installation costs is definitely helping increase sales in the geothermal industry. With incentives being offered on the state level, this will only add to the awareness of the product.

With the building new homes on the decline, tapping the retrofit market is a smart decision.

delivering quality products with great customer service at competitive pricing.

What's new: This spring, Crown Boiler will be introducing the "Bimini Buddy," an optional accessory to go with its line of wall mounted Bimini condensing boilers. The Bimini Buddy will be available in three models; a combi unit that has a brazed plate heat exchanger for domestic hot water, a indirect unit with connections for an indirect water heater and a heat only unit. All Bimini Buddy's will come jacketed and include a hydraulic separator.

Also this year, Crown will be opening a new classroom at its Philadelphia headquarters. This new classroom will include live fire equipment for hands-on training and demonstration on all of Crown's product line. In addition, Crown will also add another fully-equipped Sprinter training van to its existing fleet of vehicles so that Crown can continue its ongoing commitment to the best training in the industry.

Crown on the economy: Although the industry is going through a rough stretch right now, due to the uncertainty in the economy, we do feel that there are opportunities available between rebate programs that are being offered on both the state and federal level along with peoples desire to become more energy efficient.



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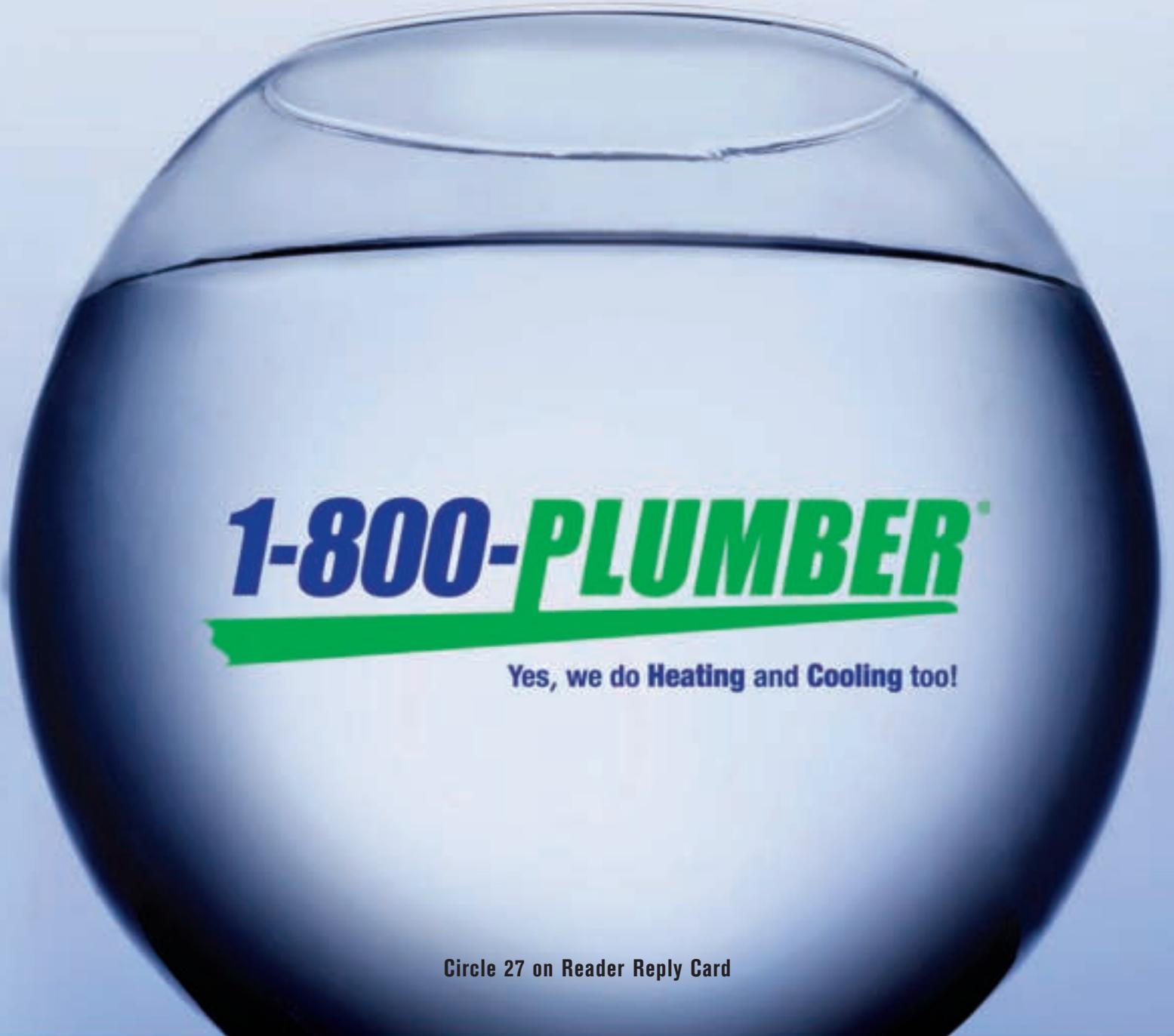
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ECR International
2201 Dwyer Ave.
Utica, NY 13501
www.ecrinternational.com

Company profile: ECR International, Inc. has been located in New York State since 1928 when Earle C. Reed established manufacturing facilities for cast iron boilers and radiators in Dunkirk and Utica, New York. ECR was formed in 1999 as a merger of The Utica Companies (Utica) and Dunkirk Radiator Corporation and named in his honor. They are a strong supporter of local charities and is proud to be a founding sponsor of Utica's famous Boilermaker road race. Now under new leadership and battling a very different economy, ECR needed to re-align their facilities and operations to remain competitive and efficient. A new focus has been placed on manufacturing green, environmentally friendly products. At the forefront of ECR's improved green product line is the freewatt® mchp system, a heating system that while producing heat for the home also produces free eco-friendly electricity.

What's new: ECR invested \$14,000,000 on renovations in their Utica and Dunkirk facilities. Renovations consisted of building a new 25,000-sq.-ft. stamping plant in Dunkirk and upgrading the manufacturing equipment. At the Utica facility, a 30,000-square-foot expansion was added to its manufacturing facility. A world-class research and development lab for hydronic, warm air and cooling design will be completed by June of this year.

ECR on the economy: Sales of our high efficiency products have grown steadily. Moreover, we view our contractors as the face of our product in the consumer's home. We have great regard for contractors and regularly consult with dealers for new product development. We consider our wholesalers to be partners.



Homeowners can cut back on utility costs with the freewatt system; it is comprised of a Honda MCHP engine-generator and an energy-efficient furnace or boiler. When heat is needed the engine generates 1.2 kilowatts of electric power, as well as 12,000 Btu/h of heat. This heat is sent back to the home and used to create a constant comfortable temperature.

HTP (Heat Transfer Products)
120 Braley Road
East Freetown, MA 02717
www.htproducts.com

Company profile: Established in 1974, HTP is a full-fledged manufacturer on the cutting edge of energy-efficient space and water heating technology. HTP was the first U.S.-based manufacturer to release a condensing gas water heater domestically, unveiling the Voyager in 1994. In 1996, HTP delivered another breakthrough with the launch of the Munchkin boiler. This highly compact boiler coupled condensing technology with a modulating burner to further trim energy consumption. HTP's offerings include residential and commercial boilers, residential and commercial water heaters, indirect tanks, and a range of solar products. All offerings are high-efficiency products.

What's new: HTP is embarking on a new branding campaign; it will henceforward be using its legal name, "HTP," rather than "Heat Transfer Products." To support efforts to become recognized as an integrated company, rather than being known solely by various product names, HTP plans to emphasize the company name, HTP, as the primary brand. Additionally, HTP has expanded warehousing space to include a new 55,000-square-foot facility in Taunton, Mass. This facility will house finished goods and will streamline inventory and shipping functions. Finally, HTP will be introducing a new heating boiler set for release in the fall of 2010. This new boiler will redefine the hydronics market by offering a product that is both highly combustion efficient and highly thermal efficient, coupled with enough hydronic mass to stabilize any system and eliminate the need for primary/secondary piping.

HTP on the economy: High efficiency boilers have continued to gain as a percentage of overall boiler market share. With federal and state legislation, as well as utility companies, encouraging residential upgrades and new installations through rebates and stimulus programs, an anticipated increase in sales of residential high efficiency boilers is forecasted.



The Elite Heating Boiler Series features inputs ranging from 80,000 BTU per hour to 399,000 BTU per hour and an industry-leading turn-down ratio of six to one.



Energy Kinetics Inc.
51 Molasses Hill Rd.
Lebanon, NJ 08833
www.system2000.com

Company profile: Energy Kinetics was founded in 1979 and has grown to become the nation's leading manufacturer of innovative, high-efficiency heat and hot water systems. The company's core philosophy of practical application of energy efficiency has resulted in technology capable of reducing energy consumption up to 40%, with further gains from integration with solar and other renewable energy sources. The company's flagship product, System 2000, is manufactured in the U.S. with exacting, world-class standards and is sold direct to professional heating installation contractors.

What's new: Energy Kinetics' Smart Solar™ hot water systems are easy to install and look like superior quality rooftop skylights. Smart Solar comes with advanced features, including a unique wireless energy savings display and built-in over-temperature protection, so there is no dump zone required. Plus, Smart Solar connects with simple 3/8-inch linesets and push fittings so no soldering is needed. With top-rated performance, Smart Solar also qualifies for federal tax credits. All these benefits combine in a superior product offered at a surprisingly competitive price.

EK on the economy: We see moderate increases in boiler sales over 2009 levels, and anticipate that increases in the personal savings rate coupled with nominal improvements in job security that may provide an improved market for 2010.



Hydrotherm, a Mestek Co.
260 North Elm Street
Westfield, MA 01085
(413) 568-9613
www.hydrothermkn.com

Company profile: Hydrotherm revolutionized the heating industry by creating a small cast iron boiler suitable for New York apartments. Playing off that same concept, Hydrotherm entered the commercial market by banking these smaller boilers together, thus forming the modular boiler concept. In the 1970s, Hydrotherm produced the first successful condensing boiler. In an age where typical efficiencies were 65-70%, Hydrotherm's Pulse boiler provided efficiencies of 90%. Hydrotherm joined the Mestek family of heating products in 1990 and continued its strong innovative path. The KN Series, Hydrotherm's flagship product offering is the industries first cast iron condensing boiler available with outputs ranging from 200MBH - 3,000MBH. KN Series units feature HeatNet control technology. Heat Net is a proprietary control platform ensuring optimum combustion performance offering superior system efficiency control and communication. Hydrotherm continues to offer free training through the Mestek Institute www.mestekinstitute.com.

What's new: Offering efficiencies of up to 99% with inputs of 200 and 400 MBH, the new KN-2 and KN-4 Series boilers offer the ultimate combination — the small footprint of modern low mass boilers and the long life and reliability of cast iron.

KN-2 and KN4 boilers are ideal for light commercial or large residential applications with radiant heating systems, water source heat pumps and snow-melt systems. Additionally, the wide range of minimum and maximum flow rates of these boilers makes them well suited to variable volume systems.

KN-Series boilers feature HeatNet control technology, which eliminates the need for wall-mounted third-party control panels. Built into each KN-Series boiler, the plug-and-play HeatNet control maximizes operating efficiency and turndown rates to create substantial energy savings whether it is operating on a single unit, part of a Building Management System or as a member of a network of up to 16 boilers.

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(603) 335-6300 or (800) 900-9276
www.laars.com

Company profile: In 1948, Laars engineers invented a way to improve the transfer of heat between metals, which led to the design of a new commercial boiler. Their concept was based on the principle that water could be heated rapidly through a finned copper tube heat exchanger exposed to gas flames, a technique that virtually eliminated the scaling and electrolytic corrosion that shortened the life of the cast iron and steel tube boilers. In the 70s, the company expanded into residential hydronic systems. Laars Heating Systems Company (www.laars.com) was purchased by the Bradford White Corporation in 2005, greatly expanding Laars' scope and marketplace. Recently, Laars completed full consolidation of all manufacturing at its Rochester, N.H. plant, with facilities in Canada.

Laars condensing boilers and volume water heaters are today recognized for their leading technology, among those with the highest energy efficiency and lowest environmental emissions. The range of coverage is 50,000 to 5 million Btus.

What's new: Laars has just introduced three new commercial sizes of our NeoTherm mod-con line, the NTH 600, 750, and 850, each with a 5:1 turn-down ratio and standard controls that will modulate and stage up to 8 boilers with outdoor reset and lead/lag boiler rotation. Also, Laars has just released 5 sizes of a new condensing volume water heaters, the NeoTherm NTV 150, 199, 285, 399 & 500. Also, in the new product category, Laars will soon introduce the Laars System Commander, an automatic "gateway" device that allows the Laars Integrated Control used on NeoTherm boilers to communicate directly with building automation systems with BACNET and LON protocols. The Laars System Commander is a "plug 'n play" control that auto-detects the BAS protocol and communicates seamlessly without having to map data points, and also auto-detects and names all Laars boilers connected to the system, with up to 12 burners.

Laars on the economy: "The turnaround in the economy is starting to occur, but very slowly. New product launches have provided additional sales opportunities for Laars, and the residential market has been better than expected, so far in 2010. The commercial market has very long lead times. We believe that commercial quotations have started to increase, but turning quotes into orders can be a lengthy process, especially when construction funding is still very limited. The high efficiency market is still relatively strong, supported with tax incentives and utility rebates," said William Root, VP & general manager, Laars.



The NeoTherm® condensing boiler is a fully packaged, space-saving hydronic solution that offers 95% energy efficiency. Laars is now adding three additional commercial NeoTherm boiler sizes (600, 750, 850) to the full line-up of current residential sizes (80, 105, 150, 210) and commercial sizes (285, 399, 500), extending the NeoTherm range from 80 MBH all the way to 850 MBH.



Lochinvar Corporation
300 Maddox Simpson Pkwy
Lebanon, TN 37090
www.Lochinvar.com

Company profile: Lochinvar's history dates back to 1919 with its founder Walter Vallett, Sr.'s entry into the water heater business. A true industry pioneer, Vallett was instrumental in the development of the first automatic gas fired water heaters early in his career. He founded the Walter Vallett Company May 16, 1946, which eventually became Lochinvar Water Heaters, and is known today as Lochinvar Corporation. He remained committed to the industry, and active in the company, serving as Chairman of the Board until his death in 1982. Bill Vallett Sr. took over as the second-generation owner of the business and currently his three sons, Bill Vallett, Jr. (president), Tom Vallett (executive vice president) and Jeff Vallett (executive vice president) own and operate the company.

What's new: The latest addition to Lochinvar's family of commercial, stainless steel, condensing boilers is the CREST™ Heating Boiler, which will be available later this year. This innovative new line has been developed to offer engineers more system design flexibility, sizes and distinctive performance characteristics to meet today's building standards for new construction and energy retrofit applications. The CREST Heating Boiler will be offered in five models with capacities of 1.5, 2.0, 2.5, 3.0 and 3.5 million Btu/hr inputs. Each of these models will feature an advanced burner and combustion system designed to provide exceptional turndown capabilities and improve overall seasonal efficiencies.

Lochinvar also recently announced their Solar Thermal Heating initiative, which is the result of a new partnership with TiSUN® GmbH of Tyrol, Austria. The partnership between Lochinvar and TiSUN has resulted in a winning team with smart strategies that provide the exact product, training and support that mechanical and plumbing design engineers and contractors need to provide renewable energy solutions for their clients.

Lochinvar has expanded upon its highly successful Squire® Indirect Water Heater line to include a total of 12 stainless steel models with capacities between 30 and 119 gallons. Among the new models are six solar units, each of which features a hybrid system incorporating solar thermal panels along with a secondary boiler heating coil or electric back-up.

KNIGHT Service School, part of the annual Lochinvar University program, has been approved for North American Technician Excellence, Inc. (NATE) training. As the leading non-profit testing organization for HVACR professions, NATE offers candidates installation and service certification programs in a wide range of industry categories.

Peerless Boilers
131 S. Church Street
Bally, PA 19503
www.PeerlessBoilers.com



Company profile: The Peerless Boilers brand has existed for more than 100 years and continues to thrive as one of the leading, most trusted and recognizable boiler brands on the market still today. Peerless manufactures a complete line of residential and commercial, oil and gas-fired boilers — both cast iron and stainless steel — for any application. Worldwide, Peerless is the leading manufacturer of boilers with a 90% or greater AFUE.

What's new; products on the market: Peerless will be introducing two new high efficiency gas boilers this spring: the Peerless Combi 160, a wall-hung, 93% efficient stainless steel condensing boiler, which provides both heat and domestic hot water in one unit, as well as the Cast 92 condensing gas boiler with a 92.7% efficiency. Both products are eligible

The direct vent, sealed combustion boiler has an ultra-high efficiency of up to 97.3% (residential) while the commercial-sized PF-399 boiler offers a combustion efficiency of 95.5%.

for the federal tax credit.

Products: The PUREFIRE® gas-fired condensing boiler is a high-efficiency boiler for residential and commercial applications and is available for either natural or LP gas. The direct vent, sealed combustion boiler has an ultra-high efficiency of up to 97.3% (residential), while the commercial-sized PF-399 boiler offers a combustion efficiency of 95.5%. Residential models are ENERGY STAR® approved! All six PUREFIRE sizes have ASME and ETL certifications for both the U.S. and Canada and are the most thoroughly tested high efficiency boilers on the market. A unique condensate system with built-in neutralizer component and float switch protection is a top feature of the boiler. Other great features include a high grade stainless steel burner and heat exchanger, 120 volt convenience outlet and LoNOx operation for the good of the environment. The PUREFIRE's fully modulating burner assures dependable operation and maximum boiler efficiency.

Peerless on the economy: The boiler industry tends to be slightly ahead of most economic recoveries. There are good signs in the first quarter; however, it remains to be seen if the industry has yet bottomed out. The federal tax credit has helped boost Peerless' brand recognition as we are one of the only boiler companies to offer an oil-fired boiler (Pinnacle® Oil) that is over 90% AFUE and eligible for the federal tax credit. In addition we have two gas models eligible for the tax credit (PureFire® gas and Pinnacle® gas boilers) and are soon introducing two new gas products that also will be eligible for the tax credit.

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NEW Bradford White ICON System™ Accessory Packages – Up to 50% more hot water, up to 36% higher energy savings, leak protection and full programmability.

1 ACCESSORY MODULE

The module powers and monitors the Accessory Packages and features an audible alarm and a multi-color LED display to signal the status of the control valve, Leak Detection Sensor and Inlet Shut-Off Valve.



2 ELECTRONIC LEAK DETECTION SENSOR

The sensor will trigger the Accessory Module alarm in the event a leak is detected and confirmed. It will also send a signal to the Accessory Module to interrupt main burner operation. Once the leak is corrected the system automatically silences the alarm and resumes normal operation.*



3 INLET SHUT-OFF VALVE

The Inlet Shut-Off Valve closes the cold water inlet when a leak is detected and confirmed. The Accessory Module will automatically re-open the Shut-Off Valve once the leak is corrected.*



4 FULLY PROGRAMMABLE LCD DIGITAL CONTROL

The control offers full 7-day, 4 period/day control of the water heater. Now customers can program their water heater based on their usage patterns and save up to 36% on energy costs. This easily installed control can be attached directly to the water heater or mounted remotely.



5 INTEGRATED MIXING DEVICE**

The Integrated Mixing Device allows water in the tank to be stored at higher temperatures, but delivers a safe and comfortable outlet temperature by blending in cold water. This increases usable hot water by as much as 50% or more. Bradford White's unique design reduces installation time to as little as 15 minutes and incorporates contractor-friendly features such as a cold water outlet, an alternate hot water outlet and a recirculation port inlet.



RUBBER DAM

If there is no drain pan, Bradford White has provided a Rubber Dam to encircle the water heater. The dam will hold enough water to activate the sensor in the event of a leak.

*In the event that a water heater must be replaced, all components are re-usable and can be installed on a new water heater.
**The Integrated Mixing Device is ASSE and UPC (IAPMO) certified and complies with applicable CSA/NSF standards.

NOTE: Bradford White ICON System™ Accessory Packages are meant to complement the water heating system and do not replace existing National/State/Local code(s) and/or manufacturer's installation instructions.

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NOW MAKE A GREAT WATER HEATER EVEN BETTER AND BUILD YOUR BUSINESS!



All accessory packages are compatible with any Bradford White ICON System™ equipped water heater. The packages are also compatible with any Bradford White models using the Honeywell® WV4460 control valve.



ACCESSORY MODULE PACKAGE

The package includes the Accessory Module, wiring harnesses, and a transformer that plugs into a wall outlet. One Accessory Module is required to operate any or all of the Accessory Packages.

PROTECTION PACKAGE

The primary component in the Protection Package is the Electronic Leak Detection Sensor. The Protection Package also includes the Rubber Dam to encircle the water heater and a wiring harness that connects the sensor to the module.

INLET SHUT-OFF VALVE PACKAGE

The Inlet Shut-Off Valve Package is an added layer of leak protection for your customers. The package includes an automatic Inlet Shut-Off Valve, an integrated wiring harness for connection to the Accessory Module, and two $\frac{3}{4}$ " x 1" brass connection fittings.

PERFORMANCE PACKAGE

The Performance Package includes the Fully Programmable LCD Digital Control with junction box, wiring harnesses, and batteries for backup capabilities. Package also includes the Integrated Mixing Device with push-to-turn hand wheel, stainless steel flexible connectors, and Thermo-Strip.

Bradford White's new **Homeowner Accessory Package Brochure** is an easy-to-understand guide that explains each component and its benefits to your customers. See your wholesaler or contact your Bradford White representative to get a supply of these helpful and informative brochures. Remember to watch for more tools from Bradford White that will help you build your business.



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RBI, a Mestek Co.
260 North Elm Street
Westfield, MA 01085
(413) 568-9571
www.rbiwaterheaters.com

Company profile: RBI built its foundation as a contract builder of copper finned heat exchangers. In the mid 1990s, RBI became a Mestek company. With the leverage of Mestek's marketing and technology resources, RBI was able to quickly grow and establish itself as an industry leader in copper finned-tube hot water supply equipment. Today innovative products lead the way. The introduction of the near condensing XLF Series gives new meaning to "high output, small footprint" boilers with sizes up to 4000MBH. The condensing Fusion Series offers amazing full input efficiencies of up to 98%!

Select RBI units feature HeatNet control technology. Heat Net is a proprietary control platform insuring optimum combustion performance offering superior system efficiency control and communication.

RBI continues to offer free training through the Mestek Institute. www.MestekInstitute.com.

What's new: Infinite Energy high efficiency condensing gas boilers, the latest addition to the RBI family of high efficiency condensing boiler products operates with combustion efficiencies as high as 97.3% and can be vented through standard schedule 40 PVC piping.

It's fully modulating LoNOx commercial-grade stainless steel burner configuration insures optimal efficiencies and superior performance throughout all firing rates.

The Infinite Energy's stainless steel heat exchanger assembly incorporates an integral condensate neutralizer with float switch protection for safe and efficient operation.

Units feature an exclusive on-board control platform allowing application versatility and master/member boiler communication of up to 16 units using outdoor reset as standard.

The direct-vent, sealed combustion Infinite Energy uses a small footprint with zero clearance to combustibles making it the perfect choice for application flexibility. Features include:

- Up to 97.3% efficient
- Direct vent, sealed combustion
- Full modulation
- Pre-mix stainless steel burner
- Integrated boiler control platform (operate up to 16 boilers)
- ASME & ETL Certified
- Built-in condensate neutralizer and float switch protection
- Outdoor reset capable
- PVC venting approved
- Environmentally friendly — Low NOx.



Infinite Energy, high efficiency condensing boiler products, operates with combustion efficiencies as high as 97.3% and can be vented through standard schedule 40 PVC piping.

Triangle Tube
1 Triangle Lane
Blackwood, NJ 08012
(856) 228-8881
www.triangletube.com

Company profile: Triangle Tube is a leading provider of high efficiency gas condensing boilers, indirect fired tank-in-tank water heaters, system controls and heat exchangers for residential and commercial applications. Triangle Tube's products are the result of its 64 years of experience in the design and manufacture of highly efficient, environmentally sound, solutions to the heating and plumbing industries. From the stainless steel tank-in-tank SMART tank indirect hot water heaters to the quiet, reliable, and highly efficient Prestige boilers, Triangle Tube continues to lead in efficient, reliable comfort.

Triangle Tube sells exclusively through wholesale distribution and have made a huge investment in educating their customer base, the installing contractor. We have three active training centers in North America (Blackwood, NJ, Denver and Toronto, Ontario) and have certified more than 3,500 contractors, in proper installation practices, system design and service, in the past five years.

Triangle Tube has been an innovator and industry leader in the manufacturing of quality stainless steel hot water heating equipment. Triangle Tube has provided highly efficient, environmentally sound solutions to the heating and plumbing industries for more than 60 years.

What's new: Triangle Tube has developed the Optima Series Hydronic Controls to provide you with the ability to better control your hydronic systems. The Optima Series controls manage multiple heat sources and multiple heating zones to expand your design options. And because they are provided by Triangle Tube, they can be quickly integrated with the Prestige boilers, and provide functionality that the others can't match. All of this adds up to a more efficient, more cost effective solution.

Triangle Tube's newest training facility in Denver is now open and available to support our customers in the Western U.S. and Canada. Course content is a combination of classroom and hands-on training, led by experienced technicians. The Denver training center joins Toronto and Blackwood, N.J.

Triangle Tube's Cascade system joins up to five Prestige boilers providing up to 2 million BTUs of output. The Common Vent option for the Cascade eliminates the need for separate vent pipes for each boiler, thereby reducing costs and cutting installation time. And because they have been designed specifically for the Cascade system, you can rest assured that the venting is correct and will function properly out of the box.

Triangle Tube on the economy: High efficiency boiler sales will be up in 2010 and will continue to increase its share of the overall boiler market.



Triangle Tube has developed the Optima Series Hydronic Controls to provide you with the ability to better control your hydronic systems. The Optima Series controls manage multiple heat sources and multiple heating zones to expand your design options.

Slant/Fin Corp
100 Forest Dr.
Greenvale, NY 11548
www.slantfin.com

Company profile: Slant/Fin was founded in 1949 by Mel Dubin. He began manufacturing commercial fin tube in the back of a bakery in Brooklyn, New York. The company has since grown and is still a privately held company now manufacturing in Greenvale, N.Y. Slant/Fin manufactures a full line of residential and commercial fin tube radiators, as well as a full line of gas and oil boilers. Since 1949, heating contractors, engineers and builders have depended on Slant/Fin for products of the highest quality. Slant/Fin is dedicated to satisfying its customers through on-time delivery of quality prod-



The specially designed three-pass heat exchanger maximizes heat transfer and delivers 87% AFUE. Plenty of room for thermal expansion of the flue gasses to keep burner and flame noise to a minimum.

ucts — along with the best technical and customer support in the industry.

What's new: The EUTECTIC Series is the newest high efficiency, cast iron, oil-fired boilers by Slant/Fin. Made from proprietary cast iron, the heat exchanger is resistant to thermal shock and corrosion. Suitable for lower temperature operation and outdoor reset controls. The specially designed three pass heat exchanger maximizes heat transfer and delivers 87% AFUE. Runs quietly. There is plenty of room for thermal expansion of the flue gasses to keep burner and flame noise to a very minimum. It is easy to clean, the door is reversible, the baffles are removable and brushing the flueways is a snap. Cleans easily with a reversible swing-open door and removable baffles. Engineered to run clean under all ambient conditions. Available in sizes you need from 88,000 to 350,000 BTUH.

The cast iron is flexible and resilient which allows for lower temperature operation especially with outdoor reset controls. This yields significant energy savings. The EUTECTIC boiler, like other Slant/Fin oil boilers, will operate cleanly under all the different operating conditions. It has done the testing and has matched burners and components to this boiler to make sure the boiler will stay running clean after you leave the job. Check out the Slant/Fin videos on www.phenews.com.

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Burnham Hydronics
PO Box 3020
Lancaster, PA 17604-3020
www.usboiler.burnham.com

Company profile: The Burnham Brand made by U.S. Boiler Company has introduced more new, high efficiency products over the last several years than any other company at any time in the history of hydronic heating. From new ENERGY STAR® certified, gas-fired residential boilers — to high efficiency oil-fired boilers including advanced-design, three-pass, cast iron boilers — along with the industry's only 3-pass, oil-fired, steam boiler. Taken together, U.S. Boiler Company's expansive lineup of Burnham hydronic heating products boasts the highest average efficiency, exceeding 85%, with maximum efficiencies more than 95%.

U.S. Boiler Company now offers the broadest line of Burnham condensing boilers available from any manufacturer anywhere including both cast aluminum heat and stainless steel heat exchangers. Also, many Burnham products now boast exclusive leading-edge boiler control tech-



The Burnham brand has and continues to set the new standards for hydronic heating equipment in residential and commercial products for gas-fired and oil-fired applications — with water and steam boilers — and super high efficiency condensing boilers.

nology with both the Burnham IQ™ control system and the advanced Burnham Sage2™ boiler control system. Both systems have been specifically designed by U.S. Boiler engineers for unmatched control of Burnham boilers.

Truly, the Burnham brand has and continues to set the new standards for hydronic heating equipment in residential and commercial products — for gas-fired and oil-fired applications — with water and steam boilers — and super high efficiency condensing boilers. To provide this extensive and industry-leading product lineup, U.S. Boiler Company has invested in world class manufacturing facilities along with the Burnham Foundry, LLC in Zanesville, Ohio and new assembly operations in Lancaster, Pa. with state-of-the art computer numerical controlled machines providing exacting product tolerances. Along with the best engineering capabilities available anywhere, U.S. Boiler Company delivers world-class marketing, technical sales, and sales support unmatched in North America.

U.S. Boiler Company is continuing to develop new Burnham products, new capabilities, and innovations that will keep them and their customers at the forefront of the best heating available for years to come. Burnham — continuing to be the leading brand in hydronic heating — with the most complete and advanced product lineup, and the one that's made in America.

U.S. Boiler Co. on the economy: The economy appears flat, yet it may show "some" uptick, but it is too early to tell. However, people will always need heat and boilers — just a matter of "when." The housing market also does not appear to be on any significant rebound. That all aside, U.S. Boiler Company has continued to forge forward with new products, enhanced production capabilities and new, exciting, absolutely unmatched boiler control technologies with its new Burnham IQ Control System and Burnham Sage2 Control System.

Stop overpaying to overheat your boiler water!



SmartPlate Water Heaters are designed to work with condensing boilers in low-temp systems.

+5°F Approach Temperature

The plate heat exchanger design is so efficient that the boiler water only has to be 5°F warmer than the desired DHW temperature:

- Maximizes boiler efficiency
- Reduces radiation losses
- Reduces energy costs
- Reduces scale build-up

Precise Temperature Control

Precise temperature control in an instantaneous heater without relying on blending/mixing valves or storage tanks.

- $\pm 2^{\circ}\text{F}$ under steady state
- $\pm 4^{\circ}\text{F}$ under normal load changes
- $\pm 10^{\circ}\text{F}$ no load to full load

Fully-packaged Solutions

Each unit ships fully assembled.

This includes: control panel and sensors, potable water side circulator with clean out connections, DHW drain valve, as well as shut-off valves and inlet strainers on both the boiler water and DHW sides.

Weil-McLain
500 Blaine Street
Michigan City, IN
www.weil-mclain.com

Company profile: Weil-McLain is a leading designer, manufacturer and marketer of heating and cooling equipment in residential, commercial and institutional buildings. Whether working with distributors or contractors, Weil-McLain goes the extra step to ensure customer satisfaction. Building on a tradition of quality and innovation, our mission is simple: to design and build the best products on the market, to make them first and to make them last — for decades. In September of 2010, Weil-McLain will celebrate its 130th anniversary. With a corporate headquarters nestled alongside the beaches of Lake Michigan in Michigan City, Ind., and a state-of-the-art manufacturing facility, as well as a world-class customer training facility in Eden, North Carolina, Weil-McLain as a leader in the comfort heating industry. Weil-McLain is now taking its expertise beyond North America's borders, as well — with approximately 700 employees worldwide.

What's new: The Weil-McLain School of Better Heating is ringing its school



Available in two sizes (550 & 750 MBH), the Ultra Commercial offers an efficiency rating of 94%. The Ultra Commercial is CSD-1 compliant and is lightweight and require minimal clearance, making for a fast & easy out-of-the-box installation.

bell in 2010. Held at the Weil-McLain state-of-the-art assembly and training facility in Eden, N.C., the School of Better Heating offers the education and the hands-on training needed to increase industry professional's knowledge and skill set. The 2010 W-M 2010 School of Better Heating Sessions are being held: May 9-13 and September 12-16. For more information, please visit: www.weil-mclain.com.

New products: Weil-McLain unveils Ultra Commercial: Available in two sizes (550 & 750 MBH), the Ultra Commercial offers an efficiency rating of 94%. The Ultra Commercial is CSD-1 compliant and is lightweight and require minimal clearance, making for a fast & easy out-of-the-box installation.

Key features include:

- 93.9% thermal efficiency
- 94% combustion efficiency
- CSD-1 Compliant is standard
- Lightweight and requires minimal clearance
- Fast & easy out-of-the-box installation
- Low NOx Certified
- PVC venting for direct vent and direct exhaust
- Compact design packaged boiler
- 20% - 100% modulation
- U-Control flexibility

The reliability and energy efficiency of its products has helped to make Weil-McLain a leader in comfort heating and cooling systems. Weil-McLain also combines hydronic expertise with the responsiveness of our support operations to provide customers with added value and peace of mind.



Specifications:

- 5 sizes support up to 90 GPM water flow
- Brazed plate single-wall design
- Plate and frame double-wall design
- 2- or 3-way valve operation
- Compact footprint 29 1/2"W x 48"L
- Stainless steel heat exchanger
- Potable water side surfaces are stainless steel, copper or copper alloy
- Max. DHW side pressure drop is 5 PSIG
- Max. boiler water pressure drop is 10 PSIG
- Max. DHW pressure & temp is 150 PSIG @ 180°F
- Max. boiler water pressure & temp is 150 PSIG @ 220°F

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- Market Proven for 22 Years
- 1 Million BTU/hr.
- 20:1 Turndown
- 93%-99% Efficiency
- ±4°F Temperature Control
- 78"H x 22"W x 57"D
- Natural Gas or Propane
- Optional Low NOx Burner
- 6" Vent Size



WaterWizard Helitherm Heaters

- Self-Descaling Hx Design
- ±4°F Temperature Control
- 90-99% Thermal Efficiency
- Impervious to Thermal Shock
- No Traps or Tanks Required
- <4 ft² Footprint
- Pneumatic or Electronic Controls
- Family of Steam-to-Water & Water-to-Water Units
- 20-Year Pressure Vessel Warranty



U-Tube Double Wall Heaters

- UL Listed Steam-to-Water & Water-to-Water Heaters
- ±4°F Temperature Control
- <4 ft² Footprint
- Pneumatic or Electronic Controls
- 20-Year Pressure Vessel Warranty

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Northern exposure, resolved

Maine's Chewonki Foundation goes green

The ultimate display of sustainability is to educate the next generation. After all, it's the younger set who'll be more conscious of our finite resources than today's consumers.

Wiscasset, Maine-based, nonprofit educational institution, the Chewonki Foundation, is doing just that. Nature-based courses are the majority of the curriculum, which can range from hour-long sessions to entire semesters. The Foundation took learning to a new level for the 40,000 students enrolled in any one of seven different courses.

The Foundation's largest building, the Center for Environmental Education, received an interesting addition to its mechanical system last year. A portion of the building's heating system was converted from fuel oil to an open-loop, water-to-water geothermal heat pump system. The retrofit is integrated with a data-logging unit which measures and records performance data.

The data, presented in a user-friendly format online, is available to Chewonki's students and incorporated into many classes and demonstrations. The information, then, is transmitted to the Web by HOBOlink, a data-logging server. The geothermal retrofit is as much an ongoing experiment as it is a mechanical system upgrade.

The Maine Public Utilities Commission (MPUC) funded the project

and insisted on data logging, hoping to gather impartial data on the efficiency of geothermal systems. The commission seeks hard information because managers there are actively researching the possibility of incorporating geothermal systems into

(chewonki.org). The data, updated automatically every five minutes, is displayed in several forms, including a user-friendly line graph.

Building, naturally

The students at the Chewonki



The Genesis unit is connected to an open loop well with a depth of 325 feet, and a recharge rate of 25 GPM; water used for geo-exchange, then discharged into a drain that spills into a wetland nature area. During its first heating season, the system produced about 14.5 million BTUs at an approximate COP of 4.

public housing projects.

A link to the information can be found on the Foundation's website

The downstream dream

“Chewonki is an amazing place, open to innovative ways of doing things,” said Dr. John Logan, regional director for Water Energy Distributors, Inc. (WEDI), a company, based in Hampstead, NH. They are a distributor of geothermal heat pumps, serving New England and New York (WEDI refined the “standing column well” ground source coupled heat pump approach in the 1970s).

Logan explained that when oil prices rise again, it's going to make the buying market much more receptive to new and different ways of doing things. “We believe that within a few years Chewonki will renew their interest in an idea we proposed initially for the Center: the ‘half-sized’ geothermal system approach,” added Logan. ■

Logan explained that a half-sized system would meet the great majority of heating needs — potentially 90% of what the Center would require. And, when temperatures dip into the nether regions of winter's worst, that's when the oil-fired boilers could easily meet the need for supplemental heat.

“The Center would receive most of its annual heating from the half-sized geothermal system which, up front, would cost Chewonki only half as much as a full-service system would cost,” continued Logan. “The existing boilers are already in place and could easily supply the additional heat when called upon. It's an approach we're eager to see more, especially well suited for retrofit applications.” ■

Foundation are immersed in nature nearly every waking minute, something that the Foundation feels is the very core of deep-seated respect for the natural world. But, when weather doesn't permit outdoor learning, the two-story Center for Environmental Education is where the classes are held.

In addition to housing five large classrooms and staff offices, the building also has a 1,500-sq.-ft. meeting room, Chapin Hall, known affectionately as the “whale room,” stemming from the oddity of having a 30-foot finback whale skeleton suspended from the ceiling. It's this room, with high ceiling and plenty of glass in two exterior walls that posed the greatest challenge to maintaining indoor comfort. That is, until the idea of a geothermal solution was raised.

And so, while the rest of the building's heat is supplied by fuel oil (see sidebar), the whale room and its human occupants are heated by geothermal energy.

“Chapin Hall was chosen as the location of the experiment for two

reasons,” said Peter Arnold, sustainability coordinator at Chewonki.

Arnold explained that the space is an ideally-sized heat load for the system (cooling in Maine was not a concern). Also, downstairs, the existing radiant heat manifold for Chapin Hall is located close to the geothermal heat pump, a three-ton Genesis system manufactured by ClimateMaster. “This helps visitors without a mechanical background

see and understand the entire system,” added Arnold.

Mid Coast Energy Systems, based in Damariscotta, Maine completed the original, oil-fired mechanical system installation, as well as the geo retrofit. The 35-person company does installations and service in heating, plumbing, A/C, water treatment, geothermal, solar and IAQ.

According to John Blodgett, installation manager at Mid Coast, a staple-up, plated, PEX radiant heat system was installed on the ground floor of the entire building when it was completed in '98, including Chapin Hall. Heat comes from two oil fired boilers in the basement. The second floor is heated by convection baseboard.

On top of the Center building is a solar array, consisting of 42 PV modules, each producing 85 watts of power. What makes the array unique is its hybrid design. Under the panels is a Solarwall heat collector that pre-heats air going into the building's ventilation system in the winter, and also strips heat off of the PV modules, making them more efficient.



Au naturel with geo

The ClimateMaster Genesis geothermal system was brought in to serve as the new, primary source of heat Chapin Hall's radiant heat system, allowing MidCoast pros to deactivate the first connection between the well-insulated, under-floor PEX tubing network and the oil boiler. "We calculated and re-calculated the heat load for the Center and came up with a well-confirmed need for 36,000 BTUS on a design day of -10°F outdoor ambient," said Dr. John Logan, regional director for Water Energy Distributors, Inc (WEDI). "The three-ton geothermal system was a perfect fit, down to the last BTU."

According to Blodgett, they used several Taco components in the system, including the main and zone pumps. "We prefer Taco gear because of its proven reliability with us," added Blodgett. "Precise flow control to the extensive, low-temp radiant heat system is a given with the right gear in place."

The water-to-water geothermal heat pump provides mechanically-tempered heat to the meeting hall via eight, 300-foot, 1/2" PEX radiant heat loops with flow through eight-port supply and return manifolds. The Genesis unit is connected to an open loop well with a depth of 325 feet, and a recharge rate of 25 GPM; more than adequate. "We're very fortunate to be situated directly above a large aquifer, perfect for open-loop operation" said Arnold.

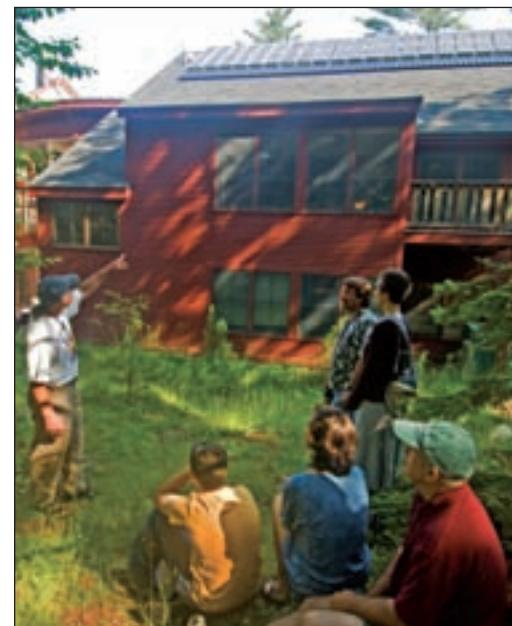


Peter Arnold, sustainability coordinator at Chewonki, points out aspects of the system, which is displayed comprehensively so even visitors without a mechanical background see and understand the entire system.

Water for the geo system's thermal exchange is pulled from the ample supply in the well, used for geo-exchange, then discharged into a drain that spills into a wetland nature area in the center of the campus.

The pilot geo system, which has just com-

pleted its first heating season, produced about 14.5 million BTUS at an approximate COP of 4. As expected there were lessons learned. When the season's data was collected the heat pump appeared to achieve a COP of 3 which was lower than expected. So the experts looked closely into the apparent disparity and found the answer: the BTU meter was installed ahead of,



A solar array of 42 PV modules produces 85 watts of power each, and the hybrid panels also heat air going into the ventilation system during winter.

rather than after, the heat pump. More recent, late-season calculations show the correct figure is a COP of 4, which will be verified next season with the meter in the correct location.

Refining the experiment

Two BTU meters record BTUS extracted from the well water and BTUS sent to the floor. A kilowatt sensor measures the draw of all of the system pumps and circulators. Temperature probes measure the air inside and outside the structure, as well as the temperature of water going into and coming out of the ClimateMaster system.

The entire project was funded through a grant from the Maine Public Utilities Commission. In return, the Chewonki Foundation collected all data from the geothermal heating system through the heating season and made it available to the public. A report on the last season's successful geothermal heating experience will be submitted to the MPUC shortly.

With so many smart people involved, it only makes sense that an intelligent system only gets smarter. ■

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■ Advanced Radiant Hydronics with ADS (3 Days)

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■ Climate Controls (2 Days)

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■ Climate Cöntrol Network System Webinar

May 28 & June 25

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■ Ecoflex® Pre-insulated Pipe Systems Webinar

July 16

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■ Geothermal Webinar

June 18 & July 26

Teaches contractors the principles and benefits of a sustainable, alternative-energy source for radiant heating and cooling systems, including application techniques for designing and installing a water-to-water, ground-source heat pump system.

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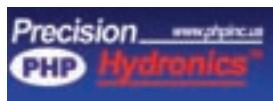


Table of Contents

| | |
|-----------------------------------|--------|
| A.O. Smith..... | 86 |
| Caroma..... | 70 |
| Chicago Faucets..... | 66 |
| Eternal Hybrid Water Heaters..... | 72 |
| G.O.N..... | 84 |
| Heat-Flo..... | 90 |
| HTP (Heat Transfer Products)..... | 68 |
| Navien..... | 64, 82 |
| Precision Hydronic Products..... | 76 |
| RIDGID..... | 74 |
| Smith Mfg. Co., Jay R..... | 88 |
| Stiebel Eltron..... | 78 |
| Symmons..... | 63 |
| Taco..... | 80 |



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* For this renewable energy initiative, System 2000/ Energy Kinetics was named "2008 New Jersey Clean Energy Small Business Leader of the Year."

As an ENERGY STAR® Partner, Energy Kinetics has determined that this product meets ENERGY STAR® guidelines for energy efficiency. System 2000 has an AFUE rating of up to 87.9%. †The color yellow for heating boilers is a registered trademark of Energy Kinetics. †United States Department of Energy Brookhaven National Laboratory (2007), by Dr. T. Butcher.

2010 SUPPLIER PROFILE



The bath upgrade that ups your sales

The Symmons Temptrol® valve has been a staple in the plumbing industry since 1939. The valve is known for its durability and remains behind the wall in many homes and commercial properties. Working with the Symmons valve now offers plumbing contractors the opportunity to provide their customers with additional services and products for a complete bath upgrade.

Solutions that drive sales

The brass, bronze and stainless steel construction of the Temptrol valve is the reason why it is extremely durable and why once installed, it rarely ever needs to be replaced. If maintenance is needed on the valve, it only requires the replacement of a few key parts, the spindle and the renewable seats. During valve upgrades the trim and handle must be removed, which provides the opportunity for the plumbing contractor to give their customer a new look for their bath.

The Symmons trim replacement kit makes it easy for the contractor to update the valve and upgrade the trim at the same time. The kit includes the TA-10 spindle, TA-4 renewable seats and a premium trim for the valve. These products are offered in one box clearly marked with the contents, making it a one-stop shopping experience for the contractor.

Adding value for the customer

Installing a new premium trim to any tub/shower enhances the bath décor for the end user. Additionally, Symmons premium bath collections offer coordinating

plumbing contractor as a problem solver and a useful resource to their customer. The Symmons trim replacement kit allows the contractor to show how easy and cost-effective it can be to upgrade the look of the bath. With this product, a service call for a valve repair can turn into an opportunity for an affordable bath facelift and additional plumbing services.

Also, during the upgrade, the contractor can suggest ways for the customer to save money and reduce water



TA-4 renewable seats (left), and TA-10 Spindle.

consumption with the installation of Symmons water-efficient lavatory faucets and showerheads.

While servicing the customer's valve the plumbing contractor can provide the end-user with valuable information about the products they have installed in their property. The Symmons Temptrol valve not only provides design options with the premium trim replacement program but Symmons products are also available in low flow, saving the end-user money.

Solutions that help the industry grow

Contractors are becoming more vocal about their product needs and manufacturers, like Symmons Industries, are willing to learn from those in the field so that together they can create products that will grow the industry.

The push for solution-based product development will enable a contractor to be more productive and to offer their customers more product options. The Symmons trim replacement kit has proven to be a solution-based product for the contractor and a tool for educating the end user on budget-friendly bath makeovers.

Symmons is proud to offer products that are relevant to the marketplace and offer the opportunity for additional sales. ■

For more information about the Symmons trim replacement program, please visit www.symmonstrim.com.



Symmons trim replacement kits give the contractor a marketing tool to show customers how easy and cost-effective it is to upgrade their baths' appearance.

lavatory faucets and showerheads which provide the opportunity for the plumbing contractor to offer a complete bath upgrade in one visit.

The Symmons trim replacement kit positions the

2010 SUPPLIER PROFILE 2010

Navien America Launches Innovative Condensing Combination Gas Boiler

Navien America Inc., the pioneer in high efficiency tankless water heaters, introduced its new Condensing Combination wall hung boiler in response to the rapidly growing demand for a tankless unit that fulfills a combination of heating applications.

Navien's Condensing Combination Boiler is versatile and ideal for domestic water heating and space-heating applications, including in-floor radiant heating, base-board heating, and fan assistance-air handler heating applications. It also features Navien's signature condensing technology and uses PVC venting which lowers the cost of installation and simplifies the process significantly. The Combi unit has all the traditional lifestyle benefits of Navien tankless technology and can offer substantial energy savings for end consumers.

The Combination Fin-type stainless-steel heat exchanger, stainless-steel condensing heat exchanger and premixed burner are components that make this product so unique. The Combi unit has an integrated primary and secondary heat exchanger that are made of stainless steel which prevents corrosion and ensures a longer lifespan over copper parts. The Stainless-steel components also maintain temperature consistency even during long periods of use. With the Combi model, Hydronic heating is made possible due to the stainless-steel's capacity to maintain low and consistent temperature levels and the unit captures as much condensation as possible making it highly efficient.

The "combi" unit is green-friendly and utilizes an "ECO" Pre-mixed Burner that generates at least 20% less CO₂ and about 75% less harmful air pollutants such as NO_x emission.

Also, an Outdoor Sensor can be connected to Navien's Condensing Combi water heater and the unit can automatically regulate the heating temperature according to changes in the temperature outdoors. Also, the Combi unit features a powerful "anti-freeze protection" device which serves as a safeguard against extremely cold temperatures.

The Combi unit also has a special Automatic Water Fill Valve and automatically fills water into space heating systems, in the event the unit senses low water.

"We are excited about the Condensing Combination model and we expect it to be very well accepted by contractors, wholesalers and consumers across North America" said Ted Kwak, President of Navien America. "Navien's Combination unit uses condensing technology and can fulfill many domestic water heating applications. It is easy to install with the use of PVC venting and cost effective and installers and contractors will appreciate the Combi unit for its versatility."

The Combi unit also has an ASA Control System that maintains a consistent, comfortable temperature throughout the home at all times which even takes into account the home's design as well as outside temperatures. The secret to this system involves a built-in thermostat which senses even the slightest temperature changes. The Combi's space-heating application calculates the amount of heat required based on the difference between the return-water temperature and the indoor temperature, then automatically adjusts and controls the temperature accordingly.

Professional contractors can purchase these innovative, Condensing Combination tankless gas water heaters, along with the rest of the Navien's product line at major plumbing wholesale houses across the United States and Canada. ■



Navien's Condensing Combination Boiler is ideal for domestic water heating and space-heating application and, features Navien's signature condensing technology that uses PVC venting for easier, more economical installation. Its stainless steel heat exchanger, condensing heat exchanger and premixed burner ensure long life, reliable operation and consistent temperature levels.

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- Eco friendly Navien technology
- Easy installation
- Best warranty

Remote controller
NR-10PU



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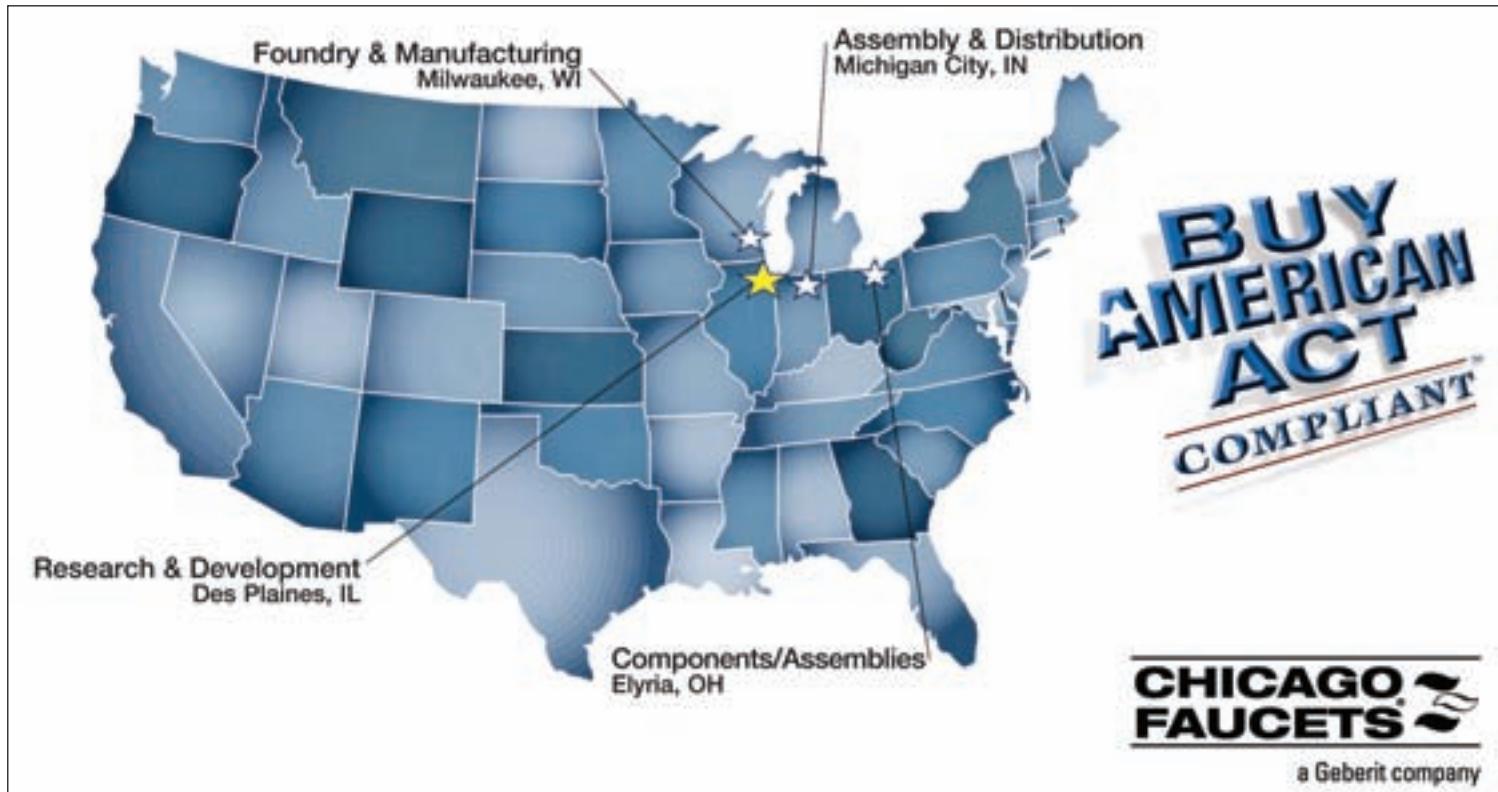
2010 SUPPLIER PROFILE 2010

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The American Recovery and Reinvestment Act that President Obama signed into law on February 17, 2009, includes a provision favoring domestic sources. The Buy American provision included in this new bill establishes a general preference for goods produced in the United States. The provision is designed to protect the American worker by saving and creating jobs with a requirement that projects receiving this new federal funding purchase American-made goods whenever possible.

Chicago Faucets has been America's leading manufacturer of commercial faucets for over 100 years and offers a complete range of products for colleges, universities, laboratories, food service and athletic facilities. Our extensive offering of components and fixtures includes products that are designed to assist in maximizing water conservation and sustainability. With manufac-



More than 1,700 Chicago Faucets products are Buy American Compliant, including the manual and electronic metering faucets shown here.

ing, research and development facilities located in the United States, you can count on products that are made with an unwavering commitment to quality, backed by know-how and determination that is uniquely American. For additional information, visit chicagofaucets.com or call 800/323-5060. ■



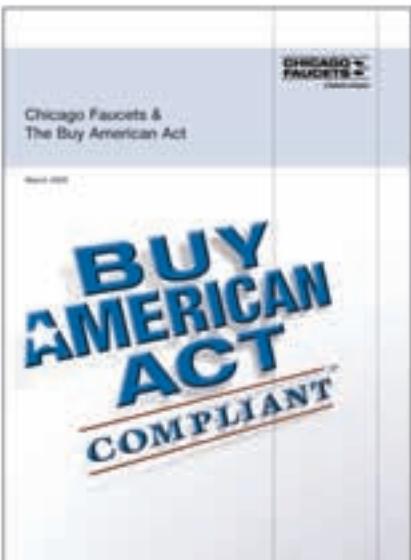
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Antimicrobial Handles from Chicago Faucets

When you install antimicrobial handles from Chicago Faucets, you benefit from Sureshield® Antimicrobial Technology, a process that provides a consistent release of antimicrobial compounds regardless of the amount of moisture present. An easy retrofit for existing products, and a versatile option for new installations, Chicago Faucets antimicrobial handles are designed for prevention and provide an easy way to add a new level of protection to a facility.

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Chicago Faucets & The Buy American Act

The American Recovery and Reinvestment Act recently signed into law includes a Buy American provision favoring domestic sources. Selecting products that meet the requirements of this Act can help support jobs across the USA and assist in our economic recovery. Over 95% of Chicago Faucets products, more than 1,700 items, meet these requirements. Chicago Faucets... unwavering commitment to quality, backed by know-how and determination that is uniquely American.

ECAST® Products from Chicago Faucets

ECAST, from Chicago Faucets, is the line of durable, high-quality brass faucets that are designed and manufactured with less than one quarter of one percent (0.25%) total lead content by weighted average. These products are intended for installation where state laws and local codes mandate lead content levels or where lead content is a concern. Visit ecast.chicagofaucets.com for more information.

ECAST



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The Most Reliable Electronic Faucet You Can Buy

The HyTronic® from Chicago Faucets has been built and tested with one goal in mind: to be the most reliable electronic faucet on the market. Water tight electronics and vandal resistant features, combined with a long-life lithium battery, ensure reliable performance for years to come. For a free HyTronic Product Kit with demonstration CD, call 800/323-5060 or circle the number below on the reader service card.

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value
redefined.



New products, new solutions and a whole new level of value.

Value is being redefined with two new options for your lavatory installation from the leading name in commercial faucets - Chicago Faucets. Our new electronic and single handle lavatory faucets provide a durable, dependable option to locations where commercial needs or specific codes must be met. They are an ideal choice for public restrooms in restaurants, gas stations, healthcare facilities, shopping centers, retail and more.

These new products are designed and manufactured to the high quality standards that have made Chicago Faucets the top choice at commercial and institutional locations throughout the world. Now, you can bring Chicago Faucets quality, style and performance to any restroom.

For a free catalog brochure, please call 800/323-5060 or circle the number below on the reader service card.



CHICAGO FAUCETS

a Geberit company
www.chicagofaucets.com
800/323-5060

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2010 SUPPLIER PROFILE 2010



The Phoenix Evolution Combines Space and Water Heating in One Appliance

HTP (Heat Transfer Products), a market leader in high-efficiency heating and hot water technology, has introduced The Phoenix Evolution, an innovative new product that is setting a new standard for environmental responsibility, energy conservation, and consumer convenience.

As specialists committed to providing high-efficiency equipment for residential and commercial needs, HTP has long been in the business of bringing new technologies to the U.S. market. The Phoenix Evolution is the first device available in the U.S. that integrates a high-efficiency gas water heater with a heating element, to provide both hot water and space heating with one compact, efficient device.

The Phoenix Evolution includes four distinct components, each of which contributes to its efficiency and lessens its environmental impact.

A modulating condensing (ModCon) gas water heater provides ample hot water for domestic needs while reducing energy waste. Hydronic mass stabilizes the system and minimizes short-cycling. The modulating burner enables the system to use only as much energy as it needs, unlike conventional appliances which fire at one constant rate, causing unnecessary fuel consumption when demand is less than supply. As a result, the Phoenix Evolution functions at 94% combustion efficiency, in addition to its 96% thermal efficiency. The hot water that is generated is stored right in the heating tank, eliminating the need for an additional storage tank.

An attached heating module draws heat directly from the hot water, using the energy that has already been produced to supply space heating, eliminating the need for a separate boiler. The heating module can be connected directly to an existing heating system, including radiant heat, air handlers, baseboards, etc.

The Phoenix Evolution also includes auxiliary ports that can be connected to air handlers or supplemental storage tanks, giving the system added flexibility.

Finally, the system includes an optional solar heat exchanger, which can be connected to solar collectors, thus increasing the unit's efficiency to over 100%, reducing carbon dioxide emissions, and significantly reducing fuel consumption.

The all-in-one design of the Phoenix Evolution not only contributes to the environment's well-being, but to the consumer's as well, offering significant space and cost savings over competing systems.

The Phoenix Evolution takes up about 1/3 as much space as a typical system, replacing a boiler, indirect water heater, and buffer tank with one compact appliance. The consumer will also eliminate the primary-secondary loop, near boiler piping,

boiler-indirect heating connections, and isolation valves, all of which are rendered unnecessary by the Phoenix Evolution's unique design. All components of the Phoenix Evolution face the front of the unit, making installing, wiring, and servicing the system easy and convenient. The control board, fuses, low-voltage connector, and control display unit even pull out for easy access.

Cost savings include considerable reductions in installation, maintenance, and operation costs. Contractors need install only one device as opposed to three, significantly reducing labor costs. The Phoenix Evolution requires virtually no maintenance, being designed and constructed to eliminate lime build-up and blockages. Over 3 years of operation, the Phoenix Evolution is likely to reduce the average user's energy bills by \$1,100. Additionally, consumers who replace inefficient appliances with new energy-saving devices can qualify for tax credits up to \$1,500.

www.hptproducts.com



The Phoenix Evolution includes four distinct components, each of which contributes to its efficiency: A modulating condensing gas water heater for DHW, an attached heating module that draws heat directly from the hot water to supply space heating, auxiliary ports for air handlers or additional storage, and an optional solar heat exchanger.



Elite

Heating Boiler



98%
AFUE

Modulation Matters

The Elite Boiler has an outstanding 6 to 1 turndown ratio. Greater turndown allows this appliance to modulate at lower firing rates which reduces short cycling, conserves energy and improves component reliability.

- High Efficiency - Up To 98% AFUE
- Floor or Wall Mount Option
- Excellent Range: Six Options From 80,000 to 399,000 btu's.
- Outstanding Venting - 200 Feet - PVC
- Fantastic 6 to 1 Turndown Ratio

HTP Solar Panels



PHOENIX Evolution

A COMBINED HYDRONIC APPLIANCE



- Boiler, Water Heater & Buffer Tank Combined Into One Unit.
- High Efficiency - 96%
- Save On Installation Costs!
- Save On Space and Clutter!
- Virtually Maintenance Free!
- Low Standby Loss - CFC Free Foam - No Center Flue
- 10 To 1 Turndown Ratio On The Space Heating Module.
- 3 To 1 Turndown Ratio On The Main Combustion System.



SOLAR



Heat Transfer
Advanced Heating and Hot Water Systems

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2010 SUPPLIER PROFILE

2010 caroma®

Water conservation with Caroma HETs

With Caroma's high efficiency (HET) dual flush toilets, you don't need to trade flushing performance for water savings. It's not simply a matter of taking an existing toilet and reducing the amount of water used. Caroma's toilets are designed to work together as a complete flushing system that takes into consideration waste removal as well as proper drainline carry out.

Using gravity forced "washdown" technology, this system delivers more energy from less water and pushes (rather than siphons) waste out of the bowl, quite simply making the water work harder and more efficiently.

All 47 Caroma floor-mount toilets are WaterSense labeled, meaning they use at least 20% less water than the current federal standard while still providing equal or superior performance. A family of four could save 10,000-30,000 gallons of water in one year alone by simply replacing an older, water-consuming toilet with an HET.

It's a simple two button flushing system. The reduced flush button releases 0.8 gallons per flush (gpf) for liquid and paper waste. The full flush button releases 1.28-1.6 gallons per flush (depending on model) for solid waste. This can save up to 44% more water than the standard 1.6 gpf single flush toilet and up to 74% more water than a 3.5 gpf single flush toilet.

Businesses and households worldwide enjoy other features of Caroma toilets. For example, the trap size is nearly double the North American standard, enabling the system to eliminate clogging, overflows, and double flushing. Additionally, Caroma 270 toilets come with an adjustable offset connector for 10" - 12" rough-ins that accommodate rough-in variations and make the toilet ideal for retrofits and renovations. The unique style and clean lines also provide for easy cleaning.

Customer experiences

Finding ways to conserve water in the drought conditions of San Antonio is critical, and the Hilton San Antonio Airport hotel has accepted the challenge, becoming an industry leader in water conservation. In 2007, they replaced 3.5 gallon toilets with 384 Caroma Sydney high efficiency dual flush toilets, and the water savings are impressive. They saved more than two million gallons of water during a six month period – year over year and guest room usage was reduced by more than 30 gallons.

The Tallman Pines single family affordable housing community in Deerfield Beach, FL, was built to achieve Leadership in Energy and Environmental Design (LEED) Silver certification. The Carlisle Development Group, one of the nation's leading providers of quality affordable housing, installed Caroma high efficiency toilets in 200 two and three bedroom/two bathroom units to reduce water consumption. They are expecting to save more than 925,000 gallons of water per year and haven't had any blockages or overflows.

The Pear Tree Inn Airport in San Antonio provides great amenities whether you're traveling for business or pleasure. They are also interested in protecting water resources. In 2009, stage 1 water restrictions were implemented in San Antonio, but Pear Tree Inn started their conservation efforts in 2007 by installing high efficiency bathroom fixtures including 124 Caroma high efficiency dual flush toilets. As a result of the water-saving fixtures, Pear Tree Inn is saving approximately 2.6 million gallons of water each year for San Antonio. ■

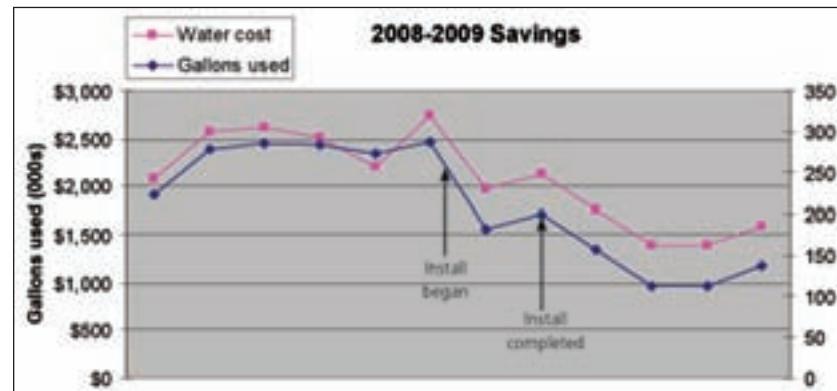
More case studies, product information, and technical details are available at www.caromausa.com or call us at 1 800 605 4218.

| | 5 gal (19 ltr) single flush toilet | 3.5 gal (13 ltr) single flush toilet | 2.5 gal (9.5 ltr) single flush toilet | 1.6 gal (6 ltr) single flush toilet | 1.6-0.8 gal (6/3 ltr) dual flush |
|---|---------------------------------------|---|--|--|-------------------------------------|
| Annual water used* | 36,162 g (137,418 l) | 25,314 g (94,022 l) | 18,081 g (68,709 l) | 11,572 g (43,395 l) | 6943 g (26,037 l) |
| Annual savings with Caroma Smart toilets | 29,682 gallons (113,117 liters) | 18,833 gallons (69,721 liters) | 11,601 gallons (44,407 liters) | 5092 gallons (19,094 liters) | 463 gallons (1739 liters) |

* Based on 1:4 solid/liquid usage for an average family of four and 5 flushes/person/day.



Caroma toilet installation at Tallman Pines.



Water savings using Caroma toilets at Pear Tree Inn.

Conservation with Style

High Efficiency



- 47 WaterSense labeled high efficiency toilets (HET)
- Average flush as low as 0.9 gallons per flush: full flush of 1.28-1.6 gallons for solid waste (depends on model) and half flush of 0.8 gallons for liquid and paper waste
 - * 40% savings using a 1.6/0.8 gpf HET compared to a 1.6 gallon single flush toilet
 - * 44% savings using a 1.28/0.8 gpf toilet
- Trap through way nearly double the industry average, virtually eliminating blockages and reducing maintenance costs
- Fast and easy installations, ideal for retrofits and new builds



Caroma: leaders in high efficiency toilets

Phone: +1 800 605 4218
Email: info@caromausa.com
Website: www.caromausa.com

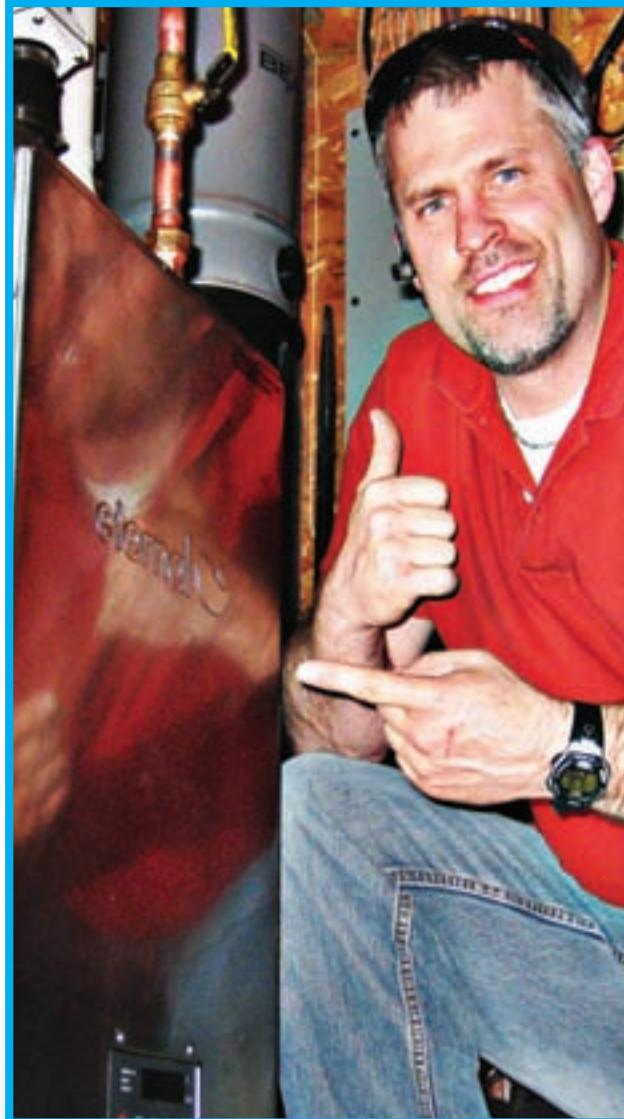
caroma

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Hot water problems?

eternal 
ADVANCED HYBRID WATER HEATING

Eternal Condensing Hybrid is the right solution.



I have been a heating & cooling contractor for 10 years & have installed several tankless water heaters over the years, all different names too! I recently had several issues with one that I installed, mainly water temperature spikes, cold water & low pressure. My customer suffered with this for over a year until I finally got fed up and started researching what was on the market & found Eternal Water Heater. I looked at their website and liked what I saw, but still was not convinced! I had been sold on other so called "tankless" water heaters that solved the cold water sandwich & pressure drop issues, so the rep from Eternal personally came out to my jobsite, sunk the hook and reeled me in! I will never install anything other than Eternal Water Heaters. My customer is finally getting what I promised him and the installation was simple!

Thanks Eternal Water Heater!

Sincerely,

Jared Matlock

www.matlockheatingandcooling.com
Matlock Heating & Cooling, Inc.
Denver, Colorado

Find out what the world's
only true condensing
hybrid water heater

can do for you!



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Clean Clever Confident

Eternal Condensing Hybrid combines tank and tank-less technologies to continuously heat water with consistent pressure and temperature for simultaneous taps. 75% smaller than tank but 300% more output is suitable for residential and commercial applications.

All stainless steel heat exchanger with built-in small storage eliminates startup lag to save water and maintains consistent pressure and temperature at 98% efficiency. Patented self-cleaning preserves efficiency over the 20 year residential/10 year commercial warranty.

2" or 3" PVC venting up to 100 ft., Power or Direct Vent, In or Outdoor, Floor or Wall Mount, LP or NG convertible on same unit makes easy and flexible installations.



**2009-2010
Stimulus Package
TAX CREDIT
Now Available**
For Qualifying Eternals.
Contact your Eternal
Rep for details.

US Patent No 6,945,197 and others pending

eternal 
ADVANCED HYBRID WATER HEATING

98%+
efficiency



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See more at www.eternalwaterheater.com

2010 SUPPLIER PROFILE 2010

RIDGID®

RIDGIDConnect™, Online Tool from RIDGID®, Provides Professionals the Ability to Share, Store and Simplify Digital Information

Technology has profoundly impacted the life of the plumbing, heating, and cooling contractor. From cell phones, to digital cameras, to remote inspection devices, and data logging meters, the contractor is always in touch and has access to information to help him be more productive. Utilizing new technology can be a great way to increase capabilities but it can also lead to headaches. Contractors who do not have a filing system for information collected on the job site are losing valuable insights and can be faced with the need to repeat work in the future. Worst of all, contractors who do not keep an organized account of such information are missing a valuable asset for their business.

The contractor's digital challenge is amplified by the ever-increasing mobile and online lifestyle of their customers. Today, consumers are more apt to check their email then go through snail mail. Decisions on estimates could require more than one person to consider, and with extended work schedules and active lifestyles, the delay in an estimate can mean lost production and revenue for the service contractor.

Today there is an option for contractors who use digital equipment and devices to store their insights and information as well as create meaningful reports and records of the work they do. RIDGID recently introduced RIDGIDConnect™ (www.RIDGIDConnect.com), an online subscription-based service that facilitates secure storage of digital content and records while facilitating communication of job site reports to customers and other interested parties. RIDGIDConnect is simple to use and allows the contractor to focus on what they get paid to do rather than worrying about how to sort and manage information.

Contractors who utilize RIDGIDConnect can quickly upload customer lists, media, and files from their personal computer or digital inspection devices. The service provides a backed up archive for media and allows the contractor to quickly associate it with a customer or job. To help customers understand the issues at hand, the site allows for bookmarks to be placed in videos to direct attention. Still frame images can be extracted from a video as well and marked up to call even greater focus to an area of interest. The media tools within RIDGIDConnect are not just for video and pictures. Any digital file can be supported on the system which makes it a great tool for sharing warranty forms, owner's manuals, or service reminders with customers as an added value of your professional service.

Longer term, the benefit to the company is an asset base of detailed information on every customer or job that they record. Think of this as an electronic medical record collection of your business that can further define the value of a company in the event of a sale, or enable users to offer additional services based upon their understanding of past work or service issues.

Subscriptions are based on monthly usage starting at \$49.00. A basic account allows for five users to access the system within a single company and create reports and access past job records. Services like RIDGIDConnect can allow users to get the full return on the investment made in digital tools and inspection devices. It can also give users the competitive advantage in their market.

www.RIDGID.com



RIDGIDConnect™ online subscription-based service facilitates secure storage of digital content and records; also, contractors can quickly upload customer lists, media, and files from their personal computer or digital inspection devices. RIDGIDConnect™ backs up archives for media so the contractor can quickly associate it with a customer or job.



100' REACH

Getting to the problem won't be a problem.

It's compact for easy storage...lightweight for easy transport...and versatile for easy use. The SeeSnake® microReel System from RIDGID® is the perfect solution for inspecting lines up to 4" in diameter and 100' in length. Getting to the problem has never been easier.

Learn more and schedule demonstrations: 800.769.7743
or www.RIDGIDUpgrade.com.



-  Modular Monitor Platform
-  Digital Recording
-  Optional Distance Counter
-  RIDGIDConnect™ Enabled

We Build
Reputations™ | **RIDGID**

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Sep-Can and Sep-Can Plus Specifications

JOB: _____

www.phpinc.us

ENGINEER: _____

| ITEM NUMBER | MODEL NUMBER |
|-------------|--------------|
| | 7.4-0807 |

CONTRACTOR: _____

REP: _____



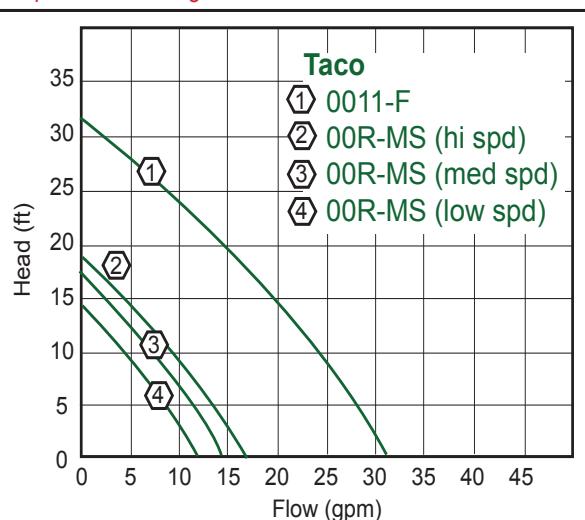
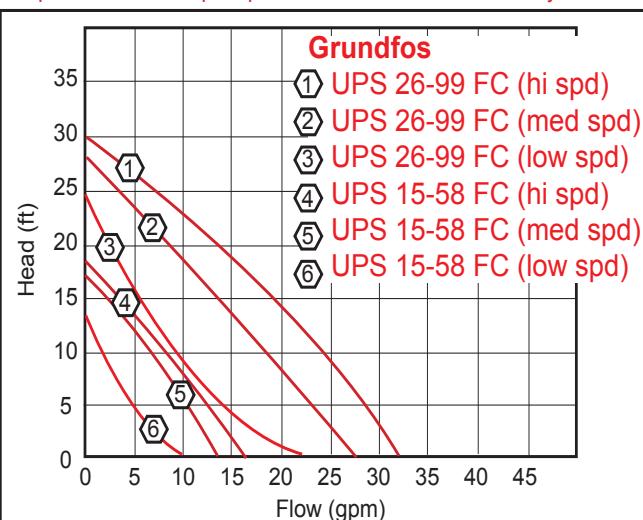
The Sep-Can™ is an economical small hydraulic separator with zone ports that allows a fast and easy primary/secondary piping arrangement for many different boilers. It is a basic separator that accepts "field-built" add-ons. It is recommended that the optional pump mounting bracket be used with the Sep-Can to provide additional support for field-mounted in-line zone pumps. May be installed vertically or horizontally. Includes basic mounting brackets and air vents.

The Sep-Can Plus™ is very compact and sold with space saving end-suction pumps (standard), or in-line pumps (optional), and a quality air eliminator. It is intended to go under bottom piped, wall mounted condensing boilers as a kit. Comes with external air separator, fill valve, expansion tank, secondary loop zone pumps and primary loop pump as specified, and with primary loop "T"s for an indirect water tank. Optional secondary loop mixing kits for multi-temperature systems are available.

Primary loop supply and return 'Tee' connections are for supply and return to an indirect water tank.
Primary and indirect water tank connections are 1-1/4 inch. Zone connections are 3/4 inch.

| Part Number | Description | Primary & Optional Indirect Pump | Secondary Pump |
|--|--|----------------------------------|--------------------------------|
| PHP-SEPC-2 PHP-SEPCPLUS-2G PHP-SEPCPLUS-2T | ---- 2-zone with Grundfos pumps 2-zone with Taco pumps | ---- UPS 26-99-FC 0011-F | ---- UPS 15-58-FC 00R-MS |
| PHP-SEPC-4 PHP-SEPCPLUS-4G PHP-SEPCPLUS-4T | ---- 4-zone with Grundfos pumps 4-zone with Taco pumps | ---- UPS 26-99-FC 0011-F | ---- UPS 15-58-FC 00R-MS |
| PHP-SEPC-6 PHP-SEPCPLUS-6G PHP-SEPCPLUS-6T | ---- 6-zone with Grundfos pumps 6-zone with Taco pumps | ---- UPS 26-99-FC 0011-F | ---- UPS 15-58-FC 00R-MS |

Note: The available head and flow in any manifolded pumping application is surprisingly dynamic. When more pumps come on, flow goes up, but not in a linear way since it is also influenced by the pressure drop and total flow rate of the manifold. Thus available flow at the same head loss will be reduced per pump when multiple pumps are on. Due to the dynamic difficulties of predicting all possible permutations of pressure and flow with multiple pumps and with multiple speeds it has become customary in the industry to use the single pump curves to design for each individual zone.





Innovative, compact piping solutions with PHP hydraulic separators

A complete line of products from the industry's most innovative manufacturer



Mini-Sep™
Patent Pending



Mini-Sep Plus™
Patent Pending



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Low-Loss
Header™
Patent Pending



Allcan™
Patent Pending



Low-Loss
Header Plus™
Patent Pending



Sep-Can Plus™
Patent Pending

Sep-Can™
PHP-SEPC-4



Patent Pending

From basic hydraulic separation to full primary/secondary zoning systems, PHP provides cost-effective, space-saving, innovative piping solutions with our new U.S. Patent Pending products.

Specify PHP Hydraulic Separators for use with modulating/condensing and traditional boiler/heating sources for assured quality, correct piping arrangements, installations that meet your expectations and limit your liability.

Available as basic or complete systems with Grundfos or Taco pump options.

For more information, visit www.phpinc.us and contact your PHP rep for a quote on your next project.

Specifiers are assured of:

- Correct pump and pipe size for heat source
- Correct primary/secondary piping
- Pre-made components limit installation errors
- Space-saving installations
- Specifications and drawing available
- Pressure tested and factory warranted

Featured Product:



Precision Hydronic Products - Division of JL Industries, Inc.
 6730 NE 79th Court - Portland, OR 97218
 Phone: 503-445-4188; Fax: 503-445-4187
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Rev 01/10

2010 SUPPLIER PROFILE 2010

STIEBEL ELTRON
Simply the Best

Introducing the latest in energy saving products from Stiebel Eltron

New Accelera® 300 Heat Pump Water Heaters

The new Accelera® 300 reduces hot water costs up to 80%. Heat pumps have been around for decades, but a heat pump water heater is a brand new concept. The Accelera® 300 works like an air conditioner but instead of dumping the heat outdoors, it puts it into the 80 gal tank of water. Additionally, it cools and dehumidifies the surrounding air and the tank insulation minimizes stand-by losses.

The beauty of heat pump water heating technology is that the amount of electrical energy needed to create hot water is greatly reduced compared to a conventional electric tank type water heater. The Accelera® 300 can extract up to 80% of its energy requirements from the energy in the air around it. The Accelera's compressor and fan consume only 1kWh of electricity to generate the heat equivalent of 3 – 5kWh.

The efficiency of the unit goes up with increasing ambient air temperatures. This groundbreaking efficiency redefines what a water heater is capable of, and what savings can really mean! In a warm climate, the unit can either be placed in the garage where it takes heat from the ambient air, or inside the house, where it helps with the air conditioning load. In a cooler climate, the unit is typically placed in the basement where it also acts as a dehumidifier. You get hot water at a discount and a dry basement as well.

The Accelera® 300 is Energy Star certified and eligible for a 30% federal tax credit through 2010 on materials and labor, as well as any state or local tax or rebate incentives.

Tempra® Series Tankless, On-Demand, Electric Water Heaters

The next generation Tempra® and new Tempra® Plus models are now available! Enhancements include: output to 140°, upgraded heavy-duty electronics, single flow sensor, easy access hinged cover, larger inlet filter screen. Tempra® Plus models have a digital display for °F or °C readout and Advanced Flow Control™ to automatically adjust flow rate to maintain set point temperature. Further, the Tempra® series is now an ideal backup for solar thermal systems.

Stiebel Eltron Tempra® tankless, on-demand, electric water heaters are designed for whole house and various commercial applications. The Tempra® features the latest advanced microprocessor control that allows the exact water temperature to be set via a dial on the front cover. The advanced technology ensures that the water temperature will not deviate from the set point.

The compact, energy efficient Tempra® provides an unlimited supply of hot water, heated as it flows through the unit. Stand-by heat losses, so common in conventional tank-type systems, are completely eliminated thereby reducing water heating bills by 15-20%. Designed and manufactured in Germany to North American standards, the rugged, space saving Tempra® (17" x 15" x 5") contains all copper piping and heating elements and ensures many years of reliable service.

There is an industry leading 3-year warranty on all Stiebel Eltron tankless, on-demand, electric water heaters, 10 years on all Accelera® 300 heat pump water heaters. For more information please visit our website at www.stiebel-eltron-USA.com or call us at (800) 582-8423.

A new concept in water heating, the Accelera® 300 heat pump water heater works like an air conditioner but instead of moving the heat outdoors, it puts it into an 80 gal. water tank. As an added bonus, it cools and dehumidifies the surrounding air.



Stiebel Eltron's Tempra® tankless, on-demand, electric water heaters for whole house and commercial applications feature an advanced microprocessor control that allows the exact water temperature to be set using a dial on the front cover.

INTRODUCING THE ACCELERA® 300 HEAT PUMP WATER HEATER: ACCELERATE YOUR SAVINGS!

New!



TOLL FREE 800.582.8423

www.stiebel-eltron-usa.com

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Energy from nature.

The new Accelera® 300 can extract up to 80% of its energy requirements from the air around it. Heat pumps have been around for decades, but a heat pump water heater is a brand new concept. The Accelera® 300 works like an air conditioner - but instead of dumping the heat outdoors, it puts it into the water.

The Accelera's compressor and fan consume only 1 kWh of electricity to generate the heat equivalent of 3 – 5 kWh. The efficiency of the unit goes up with increasing ambient air temperatures. This ground breaking efficiency redefines what a water heater is capable of, and what savings can really mean !

**FEDERAL TAX CREDIT:
SAVE 30% UP TO \$1,500
OF THE TOTAL SYSTEM COST!**

- 10 YEAR WARRANTY
- 2.5 ENERGY FACTOR
- 80 GALLON STORAGE CAPACITY
- REDUCES HOT WATER COSTS BY UP TO 80 %
- COOLS AND DEHUMIDIFIES THE AIR AROUND IT
- LOW STAND-BY LOSSES THROUGH GOOD INSULATION



STIEBEL ELTRON
Simply the Best

2010 SUPPLIER PROFILE 2010



Obama's Job Summit Focuses on Taco

Here in America, we're all concerned about the economy. Fuel for growth comes from the availability of jobs, so the key question at President Obama's winter job summit was, "Where will they come from?"

The Obama administration, in concert with top economists, CEOs, small business owners and labor leaders, recently concentrated their best efforts on the troublesome topic of how to create more jobs for an impatient American workforce. Their gaze fell quickly on a successful jobs program at one of the leading, all-American manufacturers in the HVAC industry — Taco, Inc., based in Cranston, RI.

Two Associated Press writers scooped the story. AP submitted a lengthy feature published in media outlets around the world, spawning major network broadcasts and countless blogs.

The article informed readers that, of the many plausible job-generating ideas offered, the Obama job summit narrowed its focus on four key concepts — job sharing, tax holidays, a new job corps, and direct aid to states and cities — the first of which was exemplified by a program at Taco.

Job Sharing

When home-building and remodeling fell sharply, orders coming in to Gary Melillo's department at Taco suffered. Yet, workers there continued to manufacture circulators, valves, air separators and other HVAC system components to fill the plant's inventory. Senior managers knew that if sales didn't pick up, there wouldn't be enough work to go around.

"It would be very scary to be laid off," said Melillo in the AP article. A 25-year veteran of the plant whose wife also works for Taco, Melillo added that "It could be a double hit."

Taco wanted to avoid layoffs. John White, the owner of Taco made this very clear to the work force through his regular business update "town hall" style meetings. So Taco implemented a program called "workshare" to spread the pain while preserving jobs.

Workers in some departments at Taco were cut back to three- or four-day weeks. Fortunately, unemployment insurance covered more than half their lost wages and they kept benefits, including health insurance.

This year, all of Taco's 292 production workers in Rhode Island and Massachusetts participated in

the work sharing program, though managers there activate the job sharing program only when necessary. "The big value is," said John White with a gentle smile, "that we've been able to ride-out the storm without losing a single employee."

At Taco: "Your job is our job"

It's a win-win. Every Taco product that makes its way into your inventory and onto your shelves is profitably outward bound into American homes and jobsites. Each product was built by someone with a family to feed and a future to hope for. Your sale, and your customer's job, helps Taco employees keep theirs.

For Gary Melillo and his entire department it means that long term, highly qualified people continue to build the best possible product for you right here in the USA. According to Gary, "that makes me feel good," as indeed it should. ■



John White, the owner of Taco (front), knew that eliminating workers — averaging about 18 years on the job — could lose that experience to other industries. Taco's "workshare" program spread the pain while preserving jobs; some departments at Taco cut workers back to three- or four-day weeks, but unemployment insurance covered more than half their lost wages and they kept benefits, including health insurance. "The big value is," says White, "that we've been able to ride-out the storm without losing a single employee."

Your job is our job.



Every Taco product that makes its way to you was built by people with families to feed and futures to hope for. Your job helps us keep ours. That's why we invest millions in innovative products, system design software, and our new FloPro Team training programs. Our thinking is that the more you know about hydronics, the more you'll pick Taco. The more you pick Taco, the happier your customers will

be. Happy customers are good for your business, and **your** business is good for **ours**. So think of buying Taco as a win-win in a time that's so-so.



John Hazen White

John Hazen White, Jr., Owner



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2010 SUPPLIER PROFILE 2010

Navien America Expands Tankless Water Heater Line with achieving the Industry's Highest Efficiency Ratings

Navien America Inc., the pioneer in high efficiency tankless water heaters, complements its state-of-the-art tankless water heater line with an ultra-condensing efficiency model that offers the highest thermal efficiency ratings in the industry.

Driven by Navien's unique design and signature "ECO" Technology, Navien now offers condensing water heaters for residential, and commercial applications which qualify for ENERGY STAR ratings. Equipped with all the traditional lifestyle benefits of tankless technology, Navien Condensing 98% models can offer substantial energy savings for residential and commercial customers.

Navien's economic venting system makes them highly efficient and Navien's condensing technology results in lower annual operating costs. Navien Condensing 98% also use 3" PVC venting which offers significant cost savings in the installation process and allows for a safer and easier installation process for installers and contractors.

"We are very pleased with the Condensing 98% tankless models and to our contributions to the tankless industry and we will continue to strive for releasing green-friendly products," said Ted Kwak, President of Navien America. "With Navien Condensing 98% heaters, consumers and contractors will get the best of both worlds, the benefits of tankless and ultra condensing efficiency, which offers substantial energy savings for the end user and an easier installation process for contractors who can utilize PVC venting."

Navien Condensing 98% heaters utilize dual stainless steel heat exchangers, providing 3.8 to 4.5 times longer life-expectancy and erosion resistance over the copper heat exchangers. Navien's unique condensing heat exchanger (secondary heat exchanger) traps condensation and uses it, making the whole process incredibly efficient and economical. Navien's ECO Premixed Burner not only dramatically reduces NO_x emissions but also offer the industry's lowest level of emissions. These units also use less gas, resulting in less CO₂ emissions making them green-friendly.

Some of the Condensing 98% water heater models feature an optional circulation pump and mini buffer tank (model A) that eliminate cold-water stacking and offer further safety measures and hot water on demand when using external re-circulation.

With Navien's 98 Ready Link Cascade System, contractors and installers can link up to 98 compact-sized Navien water heaters as one system, equating to the largest volume of hot water in the industry.

Professional contractors can purchase these innovative, Condensing 98% tankless gas water heaters, along with the rest of the Navien's product line at major plumbing wholesale houses across the United States and Canada.

Navien America, Inc. is a global leader and technology innovator of the 98% energy efficient tankless water heater. Navien America was established to open new markets in the United States and Canada for KD Navien's technologically advanced products. Navien America is eager to continuously provide high quality and innovative products that are environmentally friendly, energy efficient, and that offer hi-tech comfort and convenience to all customers. Navien America is an official ENERGY STAR® partner of the Residential Water Heater Program. Navien offers "The Ultimate in Energy Efficiency with Hi-tech comfort." ■



Navien's green-friendly Condensing Combination 98% tankless water heaters offer the benefits of tankless and ultra condensing efficiency for substantial energy savings, substantially lower emissions and easier installation. Their dual stainless steel heat exchangers provide 3.8 to 4.5 times longer life expectancy and erosion resistance than copper heat exchangers.

Log on to www.navienamerica.com.

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Condensing 98%

Tankless Gas Water Heaters



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2010 SUPPLIER PROFILE 2010



Glue-On-Nozzle provides faster, cheaper, more secure installation

With PVC and ABS pipe becoming the easier, more cost effective alternative to cast-iron pipe in DWV applications; it was only logical that the Glue-On-Nozzle would come to be. After all, roughing-in the pipe to the finished wall, transitioning with an adaptor, and screwing the nozzle on in the correct orientation are time-consuming and arduous tasks.

The Glue-On-Nozzle solves all three issues

First, the rough-in is now a thing of the past. The plumber can simply stub-out the pipe and let the masonry workers or stucco crew finish the wall. Once completed the plumber then trims the pipe to size, and glues the nozzle onto the pipe.

Second, the additional cost and space required for an adaptor is negated since it is no longer needed. Most walls require a tight 90-degree bend and the use of an adaptor negates a lot of that space. The adaptor is also an additional cost.

Third, the time spent by the plumber installing the nozzle has been reduced to a matter of minutes. Simply apply some PVC glue, slide the nozzle onto the pipe, and he is finished.

In addition, we have the industry's first and only secure-escutcheon that installs prior to the nozzle going onto the wall meaning no more calls to an old jobsite to replace a lost or stolen escutcheon.

Using ABS pipe instead? The Glue-On-Nozzle also works with ABS by using ABS/PVC transition cement

Projects that we have been featured on include Residence Inn, Walgreen's, Target, Buffalo Wild Wings, Dunkin Donuts, Jack-In-The-Box, and hundreds of other commercial and residential establishments nationwide.

With the Glue-On-Nozzle being cheaper, faster to install and more secure the question isn't "Why would I use the G-O-N?" rather "Why would I use anything else?"

The Glue-On-Nozzle is available in sizes ranging from 2" to 12" and is sold exclusively through plumbing wholesale distribution. ■



With the Glue-On-Nozzle the plumber simply stubs-out the pipe, then trims the stub to length after the wall is finished and attaches the nozzle with cement.



An industry-exclusive secure-escutcheon installs prior to the nozzle going onto the wall — no more callbacks to replace lost or stolen escutcheons.



Glues on outside of the finished wall in minutes



U. S. PATENT NO. 7,618,067

Anti Theft Escutcheon



THE NEW INDUSTRY STANDARD

You will find the Glue-On-Nozzle on Marriot, Hilton, Residence Inn, Walgreen's, Target, Buffalo Wild Wings, Dunkin Donuts, Jack-In-The-Box, and hundreds of other establishments Nationwide.

- PVC Hub is left-hand threaded and secured for a durable and theft resistant design.
- Reduces Liability - No Sharp PVC/ABS Edges
- Bird Screens Now Available

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2010 SUPPLIER PROFILE 2010

The High Efficiency Revolution Has Arrived

A. O. Smith is taking energy efficiency to new heights with four new families of residential water heaters. The high efficiency line is designed to provide contractors with the exact solution they need for every home. These new products represent the latest advances in gas, gas hybrid, electric hybrid and solar thermal technology.

First up, the Effex™ high-efficiency gas water heater is now the most advanced and efficient conventional vent product on the market today. The patented air intake system turbo-charges the combustion process to reduce energy costs up to 25 percent. It works by creating a pressurized environment that allows hot gas to travel more slowly through the water heater. As a result, a higher percentage of the energy is transferred to the water and less energy is wasted.

Operating at .70 EF, Effex is the first standard vent product to exceed the stringent second phase of ENERGY STAR® requirements. Utilizing the same water, gas and venting connections as a conventional gas model, the Effex is ideal for replacement applications.

Up next, the NEXT Hybrid represents a new generation in water heating, bringing together a tankless engine with a small buffer tank in order to maximize the benefits of both technologies. A. O. Smith's patented heat transfer process takes the exhaust gas from the tankless engine and routes it back into the buffer tank in order to extract additional heat for high efficiency performance.

Operating at 90 percent thermal efficiency, the NEXT Hybrid is eligible for a federal tax credit up to \$1,500 or 30 percent of its total installed cost. Plus, the installation is similar to conventional models, making it much simpler and less expensive in replacement applications than a purely tankless system.

Third, the Voltex™ hybrid electric water heater integrates a new heat pump technology that makes it more than twice as efficient as a standard electric water heater. Voltex operates like an air conditioner in reverse, pulling heat from the surrounding air and transferring it to the tank. The result is a significant reduction in energy costs: \$203 annually for a Voltex vs. up to \$575 for an ordinary electric model. Depending upon the application, this water heater can pay for itself in less than three years.

Voltex operates at 2.3 EF, making it the only type of electric water heater that is ENERGY STAR® rated. It is also eligible for a federal tax credit up to \$1,500, or 30 percent of its total installed cost, as well as many other state and local rebates. Voltex installs similarly to conventional electric models with the addition of a condensate drain.

Finally, the Cirrex™ Solar Thermal Water Heating System may be the "greenest" solution available to homeowners today. It's an all-in-one solution that makes specification and installation simple. Up to 70 percent of its energy comes from the sun, and its solar thermal collectors are only a fraction of the cost of photovoltaic solar panels.

Available in 80- and 120-gallon models, Cirrex offers a Solar Energy Factor (SEF) of 2.5. Best of all, the Cirrex system is ENERGY STAR® qualified and eligible for a federal tax credit of 30 percent of the total installation cost—no maximum!



Chromagen

A.O. Smith's high efficiency line provide contractors with the proper solution for every home and represent the latest advances in gas, gas hybrid, electric hybrid and solar thermal technology.

To learn more, log on to www.hotwater.com

JOIN THE HIGH EFFICIENCY REVOLUTION



Want to give your customers something to get excited about? Here it is: the innovative minds at A. O. Smith are taking high efficiency water heaters to new heights! From hybrid gas water heaters to solar panel systems, A. O. Smith has a high efficiency water heater to fit the needs of any lifestyle. This is the beginning of an exciting new era in water heating.

Welcome to the high efficiency revolution.

Go to www.hotwater.com for more information on our new products.

The water heaters featured above: the Effex™ High Efficiency Gas, the Cirrex™ Solar, the NEXT Hybrid™ Gas and the Voltex™ Hybrid Electric Heat Pump.



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Innovation has a name.

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2010 SUPPLIER PROFILE 20/20



Lincoln Center Performing Arts Project, New York City - Smith Stainless Steel Trench Drain Fabrication

The Lincoln Center Development Project is a massive upgrade to New York's most popular cultural and performing arts district. Lincoln Center is considered by many to be the world's leading performing arts center. Located on 16.3 acres in New York City, the Lincoln Center complex is comprised of 12 Resident Organizations. Lincoln Center serves as a dynamic economic catalyst for the region, hosting five million visitors annually and transforming the Upper West Side into a neighborhood that is now one of New York's most desirable places in which to live and work.

Problem: During the design phase of the Lincoln Center renovation project Gainesfort Architects contacted Woods & Jaye Sales, Inc. the Jay R. Smith Mfg. Co. representative for New York. Some of the drainage products that were discussed prior to this were too expensive to make the project feasible. Most of the project called for irregular or custom designed trench drains that made the drainage systems complicated for standard products. Because it was a renovation, all of the existing load bearing structures had to remain intact, which caused most of the construction to be precisely designed. The challenge was to develop drainage products and designs that would provide proper drainage performance, handle high load capacities, and retain the integrity of the Lincoln center.

Solution: Woods and Jaye Sales and Gainesfort Architects worked with FX Fowle architects and Arup Engineering to design stainless steel trench drain systems that could provide job site solutions. Pace Josey, CPD senior sales engineer with Jay R. Smith Mfg. Co. worked tirelessly with FX Fowle in order to not only design the trench drain configurations, but to maintain the installation schedule of the general contractor. In order to adhere to the schedule most of the stainless steel trench drains were fabricated and shipped in complete systems instead of individual channel sections. David Glick of FX Fowle Architects states "This was the first project that we used pre-assembled, fabricated trench drains and we were pleasantly surprised that it saved us time on the job."

The systems consist of four different custom fabricated stainless steel trench drains that are designed to specifically adapt and install around existing building structures. Trench drains without bottoms and trenches in various depths were designed for applications with existing load bearing structures. Transition pieces were designed to connect these to different size slot-type trench drains. Because of the custom fabrication work that was involved proper measurements had to be maintained and relayed from the architectural drawings in New York to the fabrication shop drawings at Jay R. Smith Mfg. Co.

In many cases stainless steel is the most cost efficient solution because enhanced life cycle costs. Stainless steel has a significantly longer service life and requires less maintenance than other materials. The inherent durability of stainless steel makes it an ideal material for trench drains, floor drains, floor sinks, and floor cleanouts regardless of the application. Stainless steel with its intrinsic gratifying appearance is perfect for facilities where visibility and hygienies are important.

Other industries and applications for stainless steel include: nuclear power plants, bottling plants, breweries, chemical plants, commercial kitchens, dairies, food handling areas, health care facilities, laboratories, and pharmaceutical facilities.

This phase of the Lincoln Center project has progressed nicely and the next phase will have even more custom fabrication trench drain work. Stainless steel trench drains add an appeal to an otherwise unnoticeable application. David Glick stated "making sure all of the stainless steel trench drain designs gave us functionality and visual appeal was important."

For more information on Smith Stainless Steel Trench Drain Products or to contact your local representative, visit www.jrsmith.com.



Lincoln Center, considered by many to be the world's leading performing arts center, had a problem in that most of a renovation project required irregular or custom-designed trench drains to provide proper drainage performance, handle high load capacities, and retain the integrity of the Center.



Jay R. Smith Mfg. Co., working from the architectural drawings, created four different custom fabricated stainless steel trench drains, designed to specifically adapt and install around existing building structures. The drains add an appeal to an otherwise unnoticeable application: "All of the stainless steel trench drain designs gave us functionality and visual appeal," says David Glick of FX Fowle Architects.

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2010 SUPPLIER PROFILE 2010

Heat-Flo
HEATING PRODUCTS

Indirect Water Heaters

Easy Installation: The Heat-Flo indirect is designed with the installer in mind. All connections are on top for a neat, clean installation. The smooth wall stainless coil will collect less lime and sediment and deliver full output for years. The brass drain and relief valves are factory installed, and a Honeywell L4080B is included.

Quality Design and Construction: An all 316L stainless tank and coil, a flexible thermoplastic jacket, and R-12 insulation add up to quality second to none.

Hot Water Storage Tanks

Considering an instantaneous water heater or a plate heat exchanger for your hot water application, but you have some dump loads?

Solution: Pipe the high efficiency heat source to a well insulated all stainless storage tank. Our storage tanks have 4 - 1" connections on top. Two for cold and hot, and two for heat source in and out. Heat source in and out can be hydraulically isolated from cold and hot water draws. Units can be applied to any heat source whether it is a tankless coil, a desuperheat coil on a heat pump, or a plate heat exchanger on a high efficiency boiler. The units are easy to install and are available in 30, 40, 50, 60, 80, and 115 gallons.



Primary/Secondary Hydronic Subsystem

The Heat-Flo Hydronic Sub-system is a pre-piped, pre-wired, 4 zone hydronic control and distribution system. The system can be used with almost any type of heat emitters including radiant floor heating, conventional finned tube baseboard, or hydronic fan-coils.

- Dimensions: 21" wide x 45.5" high x 7" deep
- Weight: 95 lbs.
- Electrical Requirement: 115 volt, 60 Hz. 6.0 Amps

The system includes the following features and components:

- Taco ZVC406-3 Zone Controller, pre-wired.
- Built in Primary/Secondary Valve; use as a pre-piped secondary system, or as a pre-piped primary system by



- changing the valve position.
- Full 1 1/4" supply and return manifolds
- Taco 008 circulator pump
- Air purge vent
- 4 zones pre-piped and pre-wired

Supply side — includes a full port ball valve to shutoff a zone, and a motorized zone valve with an end switch on each of the 4 supplies. Zone valves are low pressure drop. Cv = 5.0. The zone valves are pre-wired to the system control. On a call for heat,

Residential and Commercial

- Available in 30, 40, 50, 60, 80, and 115 gallons.
- 40 and 60 gallon units are available in Low Boy models.
- 80 and 115 gallon units are available with High output coils
- 60, 80, and 115 gallon units are available with double coils for solar and other applications.
- Bank together 80 and 115 Gallon units with high water heating demands

Hydronic Buffer Tanks

Application: Geo thermal Heat Pumps / Chillers / Low Mass Boilers

Heat-Flo manufactures hydronic buffer tanks designed to reduce heat pump, chiller or boiler short cycling. Hydronic buffer tanks are used in systems operating below the design load condition, which is most of the time, or in systems having several low BTU cooling or heating loads calling at different times. This can cause the the heat pump, the chiller or the boiler to short cycle, resulting in reduced operating efficiency and shorter equipment life.

The hydronic buffer tanks are built with 4 connections. Two connections can be piped to the heat pump or boiler, and two connections can be piped to the distribution system. If piped correctly, the tank can serve as both a thermal buffer and a hydraulic separator.

The heat pump or boiler can be hydraulically decoupled from the distribution system. The tanks are all 316L stainless steel construction with R-12 insulation, and an ABS jacket. Buffer tanks are available in 40, 60, 80, and 115 gallon capacities, and are available with 1 1/4", 1 1/2", or 2" connections.



Solar Hot Water Tank with Dual Coils

Our dual-coil domestic hot water storage tanks are made in 60, 80 and 115 gallon units. The lower heat exchanger coil can be connected to solar collectors, and the upper heat exchanger coil can be connected to a boiler for backup. The units are provided with two 3/8" ID thermal wells to control each coil independently. A 1/2" recirc. return port is provide on all dual coil units. All stainless tanks and coils, a flexible thermoplastic jacket, and R-12 insulation add up to a quality product that is easy to install. Multiple units can be backed together for commercial applications.



the control energizes the zone valve. Any of the 6 end switches will start the circulator pump and pump water out to the zone(s).

Return side — includes a full port low pressure drop purge/shutoff valve on each return. The valves can be positioned to run full port, shutoff, or purge.

All piping connections are easily assessable to the installer. All supply connections are on the left side of

the unit, and all return connections are on the right side of the unit. The plumbing connections to the zones are all 3/4". Boiler connections are 1 1/4".

- A "fast-fill" water supply connection includes a standard swivel female hose connection to quickly purge air out of the system at startup.
- Includes an 8 ft., 110 volt supply cord.

Heat-Flo Does the Job For You!

Heat-Flo designs, develops, and manufactures a wide range of high quality products for HVAC, Hydronic and Radiant heating applications.

Our engineers strive to incorporate product features targeting ease of installation. Less time at the job site translates into labor savings and superior value for our customers.

Indirect Water Heaters

The Heat-Flo indirect is designed with the installer in mind. All connections are on top for a neat, clean installation. The smooth wall stainless coil will collect less lime and sediment, and deliver full output for years. The brass drain and relief valves are factory installed, and a Honeywell Control is included. All 316L stainless tank and coil, a flexible thermoplastic jacket, and R-12 insulation add up to quality second to none. Available in 30, 40, 50, 60, 80, and 115 gallons.

Dual Coil Indirect Water Heater

Our dual-coil domestic hot water storage tanks are made in 60, 80 and 115 gallon units. The lower heat exchanger coil can be connected to solar collectors, and the upper heat exchanger coil can be connected to a hot water boiler for backup. The units are provided with the two heating coils and two 3/8" ID thermal wells to control each coil independently.

Hot Water Storage / Booster Tanks

Heat-Flo Hot Water Storage / Booster Tanks are fully insulated, all stainless steel construction, and supplied with thermostat, drain and T+P valves factory installed. Units are supplied with hot and cold connections, and two dip tubes to circulate water through the heat source, and in and out of the tank.



Indirect Water Heaters

Hot Water Storage/
Booster Tanks



Dual Coil Indirect
Water Heater

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Heat-Flo
HEATING PRODUCTS

Heat tracing for freeze protection of fire sprinkler systems

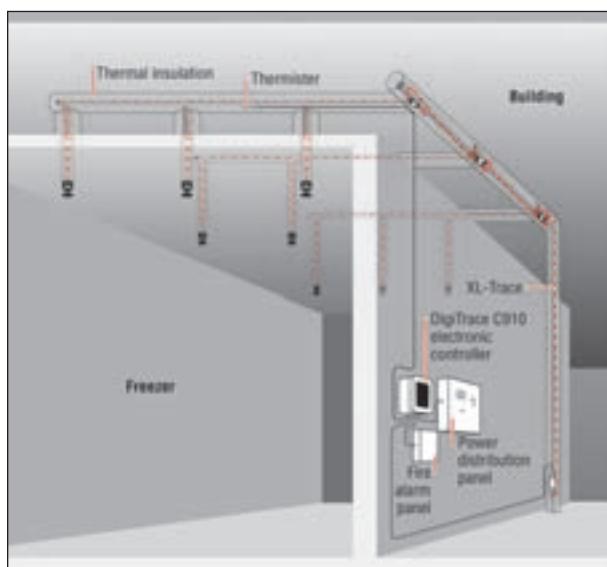
BY BRIAN LARKIN

For years, plumbing engineers faced challenges when designing fire sprinkler systems in areas subject to freezing. Wet sprinklers are ideal for indoor areas or warm climates; however, when sprinkler systems were installed in areas subject to freezing, design options were limited to dry, glycol and dry pendant systems.

As the trend of integrating nature into our living spaces becomes more popular, complications arise when the installations include both indoor and freezing locations; such as walkways, enclosed and open patios, glassed entries and balconies. Parking garages are another area of fire sprinkler design that present challenges to engineers. Tight spaces and potential exposed areas



Self-regulating heating cables are a good solution in areas such as unheated garages since each point in the cable automatically adjusts its power output in response to its local environmental temperature.



Dry pendant sprinklers, as used in freezers, can develop condensation and freeze; heat-tracing the pendants prevents this.

to the elements require complex sprinkler systems, thus more and more, plumbing engineers have to design sprinkler systems that are suited both for indoor and freezing locations.

In addition to new construction, building modifications such as additions and retrofits, may require extensive reengineering of the sprinkler systems. Accounting for changes in water supply volume and dry system water delivery time can become an engineering nightmare for conventional sprinkler systems.

The issue of sprinkler system design is further complicated with Building Management System (BMS) integration. As the ability to monitor the performance of all aspects of building systems is increasing in popularity, BMS integration is becoming a requirement. A design engineer must ask, "How does the sprinkler system integrate into my BMS?" "Are the pipes frozen?" "How do I know the sprinkler system is working?"

Wet fire suppression systems are significantly simpler to design and test than dry or glycol systems. Buildings with combined wet and dry systems are vastly more complex. A single wet system for the entire installation provides a less complex engineering challenge and more reliable end result. In order to have one single wet system in a dual environment, with both indoor and freezing locations, electric self-regulating heat-tracing is the key.

The 2007 edition of the National Fire Protection Association (NFPA) standard NFPA-13

Standard for the Installation of Sprinkler Systems recognizes heating cables as a solution for freeze protection of sprinkler systems. Using heating cables enables designers to utilize a single wet fire suppression system for the entire installation.

These systems must be specifically listed for sprinkler applications which include sprinkler heads.



Integrating fire-suppression systems into building management systems presents its own challenges, but electronic controllers that allow the BMS to react to the fire-suppression system make the task much easier.

Also these systems are required to be "supervised."

In the United States, the heating cable system is listed according to the requirements of IEEE 515.1-2005 (IEEE Standard for the Testing, Design, Installation, and Maintenance of Electrical Resistance Heat Tracing for Commercial Applications). This standard includes requirements for heating cables on fire sprinkler branch lines, including sprinkler heads. This standard defines tests to confirm that the heat-tracing system will provide protection in freezing conditions, while not over-heating the sprinklers in the highest expected ambient temperature. In Canada the standard used for certifying these systems is CSA 22.2 130-03.

Self-regulating heating cables can be the ideal solution since each point in the cable automatically adjusts its power output in response to

its local environmental temperature. Thus, each point of the cable increases or decreases its temperature as needed to keep the pipe within the designed temperature range. Additionally, this temperature-limiting feature makes self-regulating heating cables compatible with both metal and plastic sprinkler piping.

NFPA 13 also requires that the heating cable system is "supervised." The recommended solution is to use electronic controllers that measure the ambient air temperature surrounding the pipes subject to freezing. When the air temperature drops below 40°F (4°C) the heat-tracing system is powered, providing the heat needed to keep the sprinklers from freezing. Additional sensors may be applied to the sprinkler piping to monitor its temperature.

To satisfy the NFPA 13 supervision requirements the controllers should
(Turn to Freeze... page 92.)



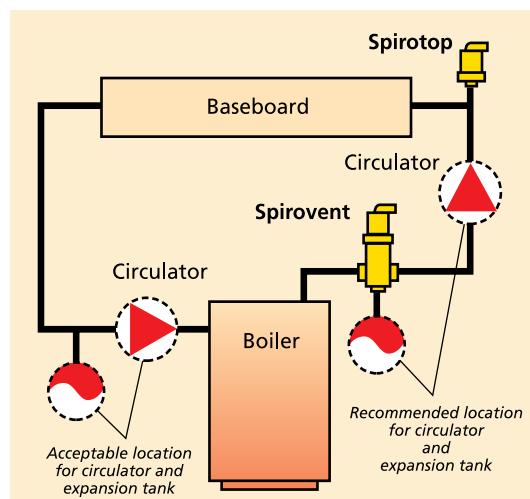
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...and, many times overlooked in smaller systems, are the dirt, scale and sediment circulating and

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Freeze protection in sprinkler systems

(Continued from page 90.)

include alarm contacts that are connected to the fire control panel. This ensures that if an alarm condition is detected, the controllers will send a signal to the fire control panel. The events that trigger the alarm contacts include:

- Low pipe temperature
- High pipe temperature
- Temperature sensor failure
- Loss of power
- Ground-fault condition
- Ground-fault trip
- Power relay failure
- Communication failure

The controllers may also be connected to the BMS through RS-485 connections via BACnet MS/TP, BACnet-IP, Metasys N2 or LonWorks host protocols.

Beyond typical building sprinkler system freeze protection, self-regulating heat-tracing is also an ideal so-

lution for preventing frozen condensate in dry pendant sprinklers. Dry pendant sprinklers, that are part of an overall wet system, are located in areas where the piping is in a temperature controlled area but the sprinklers extend into areas subject to freezing, such as inside freezers.

The base of the pendant attached to the branch sprinkler piping contains the sprinkler seal with the actuator in the sprinkler head. Due to the temperature differential, condensation may form in the "dry" section of the pendant. This condensate can freeze, causing an ice plug at the sprinkler head. Heat-tracing the pendant sprinkler prevents this ice plug from forming.

The changes to NFPA 13 provide an exciting new opportunity in sprinkler system design with performance

Beyond typical building sprinkler system freeze protection, self-regulating heat-tracing is also an ideal solution for preventing frozen condensate in dry pendant sprinklers.

enhancements over the previous design options.

Heat-tracing systems with control supervision provide:

- Simpler design without the need for dry actuator control or glycol filled systems for freezing areas;
- Simpler retrofit or building expansion designs without worries about water delivery times;
- Faster water delivery time compared to dry systems. Water is present at each sprinkler head so no time is spent waiting for the air to be purged from the air-filled piping;
- Longer sprinkler pipe life compared to dry systems. Dry systems have moisture trapped in the pipes after testing, leading to increased internal pipe corrosion, shortening the life of the pipe;
- Lower cost piping compared to galvanized pipe recommended for dry systems;
- Better compatibility with metal and plastic sprinkler piping;
- No ground water pollution or disposal issues from testing or operation of glycol systems;
- Prevention of frozen condensate in pendant sprinklers;
- Complete sprinkler pipe monitoring in case of system power loss or malfunction; and
- BMS integration allowing the system to be monitored remotely or as part of the BMS.



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you work with **JO Speedfit®**, you will wonder where we've been all your life. And you might ask what you'll do with all the time you just saved.



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Brian Larkin is product marketing manager of Tyco Thermal Controls.

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Roll up your sleeves. Get down to business.

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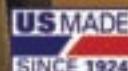


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Efficient air-to-water heat pumps arriving in America

BY HOYT CORBETT

For the first time ever hydronic contractors are positioned to catapult to the forefront of green building with the arrival in North America of new factory packaged, integrated heating and cooling devices that have high efficiencies and great solar-thermal tie-ins. This exciting new generation of air-to-water heat pumps, based on variable speed inverter technology, offers hydronics a huge new opportunity.

Until now, radiant floor heating

"Combining these multi-purpose heat pumps with PV is particularly appealing to energy conscious clients..."

and other forms of hydronic heating have required the additional expense and technical complexity of incorporating a second distinct HVAC system to do cooling. With these new appliances, dual heating and cooling will require only a handful of adjustments to hydronic practice: adding air handlers with condensate

North America of this sophisticated new generation of air-to-water heat pumps based on variable speed inverter technology.

The recently introduced Daikin Altherma, as well as introductions by Mitsubishi, Toshiba, Aermec and others, will offer HVAC and hydronic contractors great new possibilities for heating/cooling and tie-ins with solar thermal. This spells tremendous opportunity in both commercial and residential applications for hydronic contractors — if they take advantage of it.

How it works: Hot

Sophisticated controls, with inverter technology to run a variable speed compressor, reduces cycle losses, and the big turn down ratio adds comfort by load matching, saves electricity and extends the life of the compressor. Heated water is made by means of a refrigerant-to-water heat exchanger. Most of these units come packaged to do both heating and cooling, with a strategy to make — or at



drains, changeover valves and some insulated piping.

While air-to-air heat pumps have been well established in North America, these highly efficient and packaged air-to-water heat pumps are just what the hydronic industry needs to make a next growth surge. Previous air-to-water reverse cycle chillers and heat pumps did not feature variable speeds, nor were they packaged as well integrated units for heating, cooling and domestic hot water with solar thermal options. The older models were less efficient and often noisy. That's changing now with the introduction into

least to preheat —domestic water, and tie-ins to solar thermal systems.

How it works: Cold

Run in reverse, cooling may be taken off the refrigerant side with a direct expansion (DX) coil, or chilled water may be generated with the refrigerant-to-water heat exchanger. Different manufacturers are making different choices in their initial offering in terms of which way to do cooling. For the residential market most companies are offering cooling with chilled water. For hydronic contractors, cooling with chilled water opens up a huge new aspect of our

trade — one that uses familiar piping and pumping methods.

High performance and green appeal

These units can offer high coefficients of performance (COP) that, particularly in milder climates, are competitive with geothermal heat pumps, while at the same time offer much simpler, less environmentally intrusive and less costly installations. Manufacturers claim heating COPs in the range of 3.0 to as high as 5 in milder climates. At these efficiencies, these units offer a significantly lower carbon footprint than fossil fuel choices, even after allowing for all the distribution losses and fossil fuel contribution for the North



The sophisticated new generation of air-to-water heat pumps based on variable speed inverter technology are effectively packaged as well-integrated units for heating, cooling and domestic hot water with solar thermal options. European in origin, they do the job very well when contractors install the systems with American usage in mind.

American electric grid, making it an obvious choice for green building. Since the units reduce the overall energy consumption of a project, it becomes even more cost feasible to offset the overall energy use of a project with PV.

David Knight of the Monterey Energy Group in Monterey, California has now specified close to 100 Daikin Altherma's — all with solar inter-tie, and most also with PV — to get to net zero. He notes the declining cost of PV will make this even more attractive.

"Combining these multi-purpose

heat pumps with PV is particularly appealing to energy conscious clients and a good fit in states like Oregon, California and others that have good PV rebates," Knight said. "It insulates them from future increases in energy costs. And economically, it is particularly attractive in areas with low electric rates or areas without natural gas."

Design advantage: Hydronics

To take advantage of this new opportunity, hydronic contractors will need to master and correctly apply the design constraints of the units. Good hydronic contractors are skilled at the calculations required for effective design. On the heating side, these heat pumps produce modest water temperatures (120°F-130°F). With radiant floor heating this will require the use of high output radiant floor assemblies, will place limitations on the R-Value of floor coverings, and requires careful design. And while forced air fan coils may be used, they must be units with extra rows of coils specifically designed for lower water temperatures.

Cooling with chilled water will mean that hydronic contractors will have to learn about selecting fan convectors with condensate drains, and must also insulate pipes against condensation. As outdoor temperature decreases, the output of the unit also decreases, so each unit must be sized at the design temperature. However, since the variable speed inverter technology has such high turn down ratios (such as 5:1) this is not much of a problem. Another design issue is that the units may efficiently make domestic hot water, but will only recover according to the sizing of the unit.

As this technology arrives here from abroad, we need to understand some distinctions. Today's small, tighter, more efficient homes often mean these units can be small in output for heating and cooling. Even so, most Americans demand more hot water than their European or Asian counterparts. Many American contractors are realizing this means installing bigger domestic water tanks than has been normal in Europe or Asia.

To optimize the efficiencies and for lowest operating costs, contractors and operators will have to become knowledgeable about how to schedule and control these sophisticated units so that the use of back up heat is kept to a minimum. Selecting the best air-to-water heat pumps with regard to domestic hot water production may require some care-

(Turn to Air-to-Water, page 98.)

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Circle 67 on Reader Reply Card

Air-to-water heat pumps a new opportunity

(Continued from page 96.)

ful probing, since the units will likely be rated in heating and cooling, rather than for their domestic hot water capability. However, units that are not integrated in the production of heating and domestic hot water are likely to be compromising do-

mestic hot water production, efficiency or both.

These newer air-to-water heat pumps are crossover products, with several constituencies vying for control. There is considerable debate over who should distribute, support, sell and install these products. The

heat pump end is more traditionally an HVAC product with refrigerant, and the other end is a hydronic product that requires knowledge of hydronic design and installation. This is a perfect opportunity for specialty hydronic contractors, as they have a much bigger incentive to de-

velop the market for these products than air side competitors, since, unlike many HVAC contractors, hydronic contractors are not already selling air-to-air heat pumps.

The next few years will determine whether smart, strategic hydronic contractors succeed in taking the lead in this business, or whether it languishes with the more traditional air side businesses as just an option to air-to-air. This is a perfect time for hydronic contractors to learn about cooling with chilled water and about the refrigeration technology in the heat pumps.

Because these air-to-water heat pumps are so new to the North American market, they have yet to garner the political support to qualify them for federal tax credits. Sim-

This is a perfect opportunity for specialty hydronic contractors, as they have a much bigger incentive to develop the market for these products.

ilarly, North American testing standards have not yet been established. The best test data on these units is from Europe and Asia; there is no current standard in the US for testing inverter technology air-to-water heat pumps.

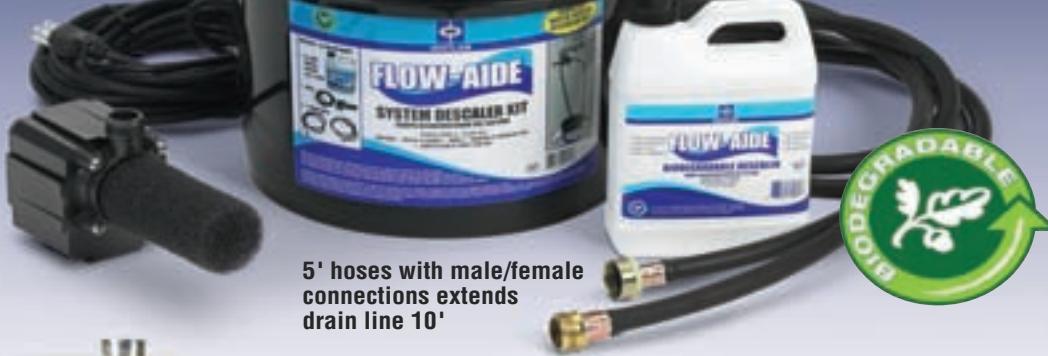
The only choice now is to test them according to air-to-air procedures, but these do not reflect the efficiencies of air-to-water and variable speed inverter technology — these tests call only for a low and a high speed test, and do not account for the fact that with variable speed technology a unit will almost always be running somewhere in between.

Again, this is a great opportunity for hydronic industry leadership. While these political and test data issues may slow North American adoption of this air-to-water technology, the benefits of these new units are so obvious that they are already gaining market acceptance. Already, electric utilities are testing them for inclusion in rebate programs. The combination of efficiency, a low carbon footprint, and the triple-threat ability to provide heating, cooling and domestic hot water, all with a solar thermal option, means these new air-to-water heat pumps should generate a big growth in hydronics. It's largely up the hydronic industry to embrace it.

Hoyt Corbett is a patented inventor and develops products for Precision Hydronic Products. His products may be found at www.hydronicworkshop.com and www.ecowarm.us. Reach him at inventivedevelopment@yahoo.com.

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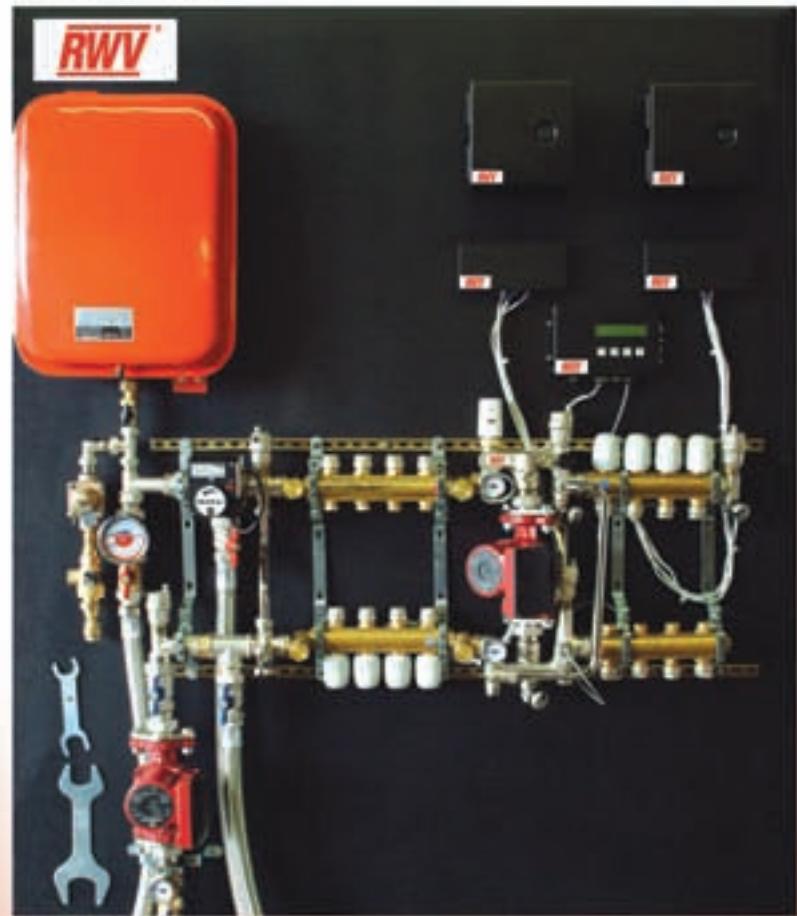
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Circle 70 on Reader Reply Card

Trenchless process brings peace of mind to Greenville homeowners

The drought here in upstate South Carolina may be over, but this year home and business owners will begin seeing more effects from it — primarily clogged sewer pipes. Tree roots that didn't get enough rain over the last couple of years went anywhere they could to find moisture. And oftentimes, that meant breaking into the nearest sewer line.

I'm a member of Nexstar®, a best practices organization in the plumb-

ing industry and my colleagues across our region agree that roots are causing major trouble in our sewer lines. Because so many homes in this area were built decades ago, their aging, deteriorating sewer pipes have fallen victim to thirsty tree roots.

One recent example is Pete Byford's home in the North Main area of Greenville. He and his family knew they had a problem because whenever they turned on their

faucets, their basement toilets started bubbling. "We didn't need an exorcist," Byford said, "but we knew we needed a really good plumber."

Through the use of our underground cameras, we found tree roots were clogging Byford's sewer pipes, but that wasn't the biggest problem. Root damage had collapsed his old Terra Cotta sewer pipe 225 feet away and it was leaking raw sewage into his neighbor's yard. Byford started to cringe and

BY CHRIS CORLEY



the job took on new urgency.

Pete Byford thought replacing hundreds of feet of pipe meant tearing up his yard, his neighbor's yard, plus their landscaping and driveways. But after we carefully re-



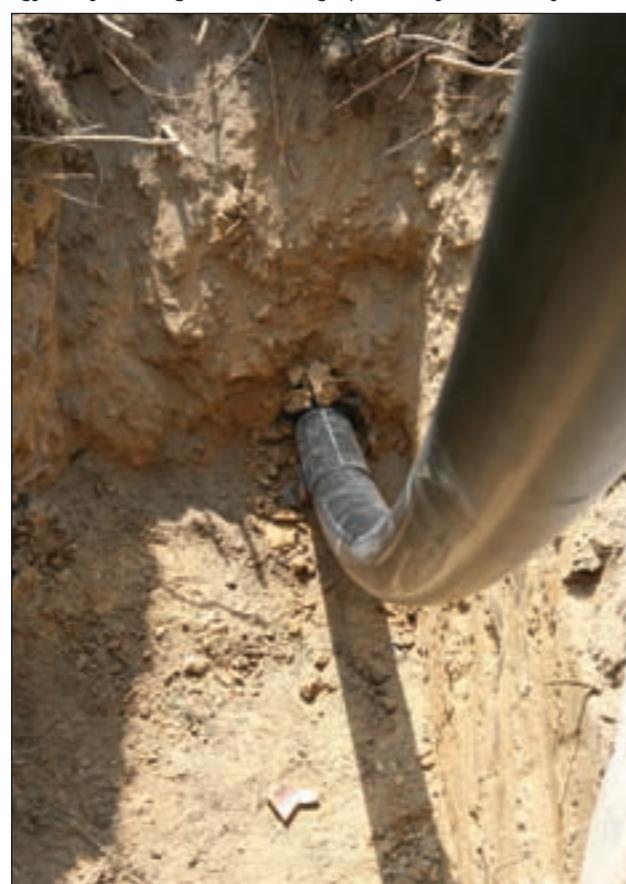
Step 1: Corley's team of experts uses underground cameras to look into the sewer line to find the problem. The homeowner can also view the shots and confirm the damage.



Step 2: Once techs locate the trouble spots, they dig small access points so they can reach the sewer line. With this advanced "trenchless" technology, they no longer have to dig up entire yards, costly landscaping or pavement.



Step 3: A cable is inserted into the faulty pipeline; and Step 4: The cable is pulled through the path of the existing line. It bursts the old pipe, simultaneously pulling the replacement line into position.



viewed all his options, Pete chose "trenchless," a new pipe-bursting technology that lets us replace multiple feet of sewer lines by just digging a couple small access holes. It's faster and cheaper and much less destructive.

Traditional trenching used to be the only solution for replacing sewer pipe and that's why people avoided it. After all, who wants to lose thousands of dollars of landscaping and majestic trees? But that doesn't have to happen anymore — thanks to trenchless bursting technology.

We dug one or two access holes and run a wire rope lead through the old pipe. We attached a splitter head or bullet to one end then the new plastic pipe attaches to the splitter head. We pulled the new pipe through on the other end and split the old one. This process maintains the same or one size larger diameter as the old pipe. The new polyurethane pipe is guaranteed to last as long as you own the home.

In Byford's case, once we went (Turn to *Don't dig ... page 104.*)

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Circle 71 on Reader Reply Card

Don't dig up an entire yard: Trenchless procedure saves landscaping, time

(Continued from page 102.)

down under, the situation changed and required more work than our original bid allowed. But that shouldn't be the owner's responsibility. Any reputable plumbing company should

stand by their upfront pricing and that's exactly what we did, at no additional cost to him. Byford also appreciated not having to deal with all the necessary city permits. The plumbing company should take care

of that, too.

Did your mother ever tell you to leave things the way you found them?" Mine did. So, each evening we left the plumbing in a state where they still could flush the toilets and

run the water. Byford said, "That's important when you have to cook dinner and bathe the kids."

Carol Campbell also lives in Greenville's North Main area. She's single and admits she doesn't know a lot about home maintenance. Here's a case where I recommend that the homeowner sign up for a service plan. In addition to discounts on repair and getting priority service for routine and emergency calls, this type of plan usually includes annual safety inspections of your plumbing and electrical services. I believe in preventative measures to safeguard your home, so you catch small problems before they become big ones.



Step 5. The old pipe disintegrates. The new polyurethane pipe lasts as long as 50 years.

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During one of our yearly inspections, we found that Ms. Campbell, too, had root growth in her main sewer line. It came from a huge 80-year-old oak tree in her front yard. Ms. Campbell didn't want to lose the tree or the \$10,000 of new landscaping she'd recently put in, so when we reviewed all her options, she knew trenchless pipe bursting was the way to go. Carol is happy to report, "My new pipes are in place and so is my tree."

As a home service provider, our greatest compliment comes from satisfied customers who trust our skill and our reputation for good customer service and ethical behavior. When selecting a plumber, homeowners should accept nothing less. ■

Chris Corley is owner of Corley Plumbing and Electric in Greenville, South Carolina, home comfort specialists offering the latest technology and courteous, reliable service. For more information go to www.corleypro.com or call 864/517-1251.

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Circle 72 on Reader Reply Card

Smart, efficient near-boiler piping

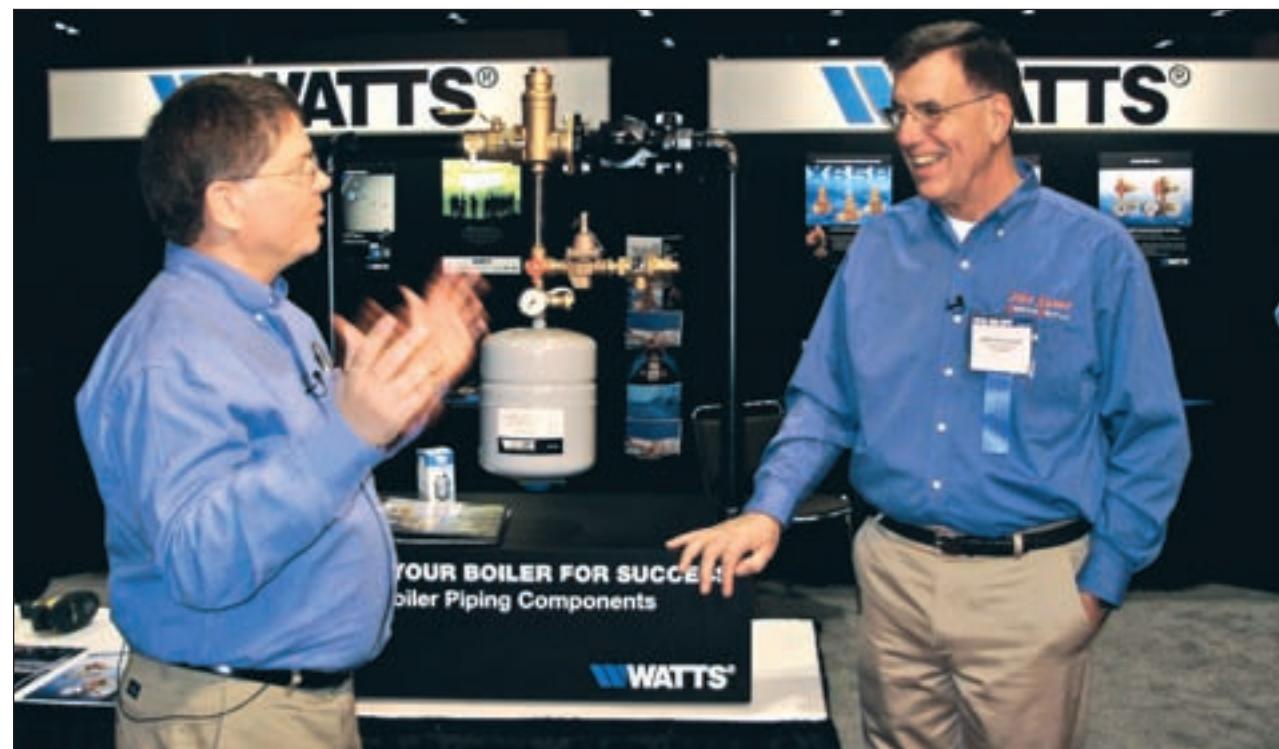
BY JIM ERHARDT

Modern hydronic heating systems have evolved in complexity over the last few decades, and — no doubt — we'll continue to refine and improve them. With this evolution, the need for proper piping design and technique has become more important. While simple systems, say a boiler and one or two baseboard zones, are pretty forgiving to piping error, systems that include radiant heat or fan coils aren't so tolerant.

A single piping error in a radiant system, for example, can lead to a system that refuses to deliver the expected comfort and efficiency, or simply just won't work at all.

It's little surprise to learn that most contractors who successfully install radiant heating systems have: a.) learned from a lot of expensive, time-consuming trial and error, or b.) have received the training to make sure the system goes in right and delivers the comfort and efficiency the customer expects. I know from personal experience: there's usually some of each in all of us.

As boiler technology has pushed operating efficiencies to new heights, the need for correct near-boiler pip-



The author (left) and hydronics guru Dan Holohan discuss the Watts pre-assembled, pre-engineered Boiler Header Module package in relation to their shared passion for hydronic heating.

ing has become more critical. "Near-boiler piping" generally refers to the piping and system components that are installed directly to the boiler and connect it to the distribution piping. These components typically include the system expansion tank,

fill (pressure reducing) valve, air separator and in some cases depending on system design, a circulator and system purge.

The arrangement of these components in the near-boiler piping turns out to be a critical point of consider-

ation when installing the system. Not only must these components be sized properly, but they must be installed in specific relation to one another to ensure proper system function and performance.

Working well is only one part of the picture, however. Future servicing of the system should be considered, too. A well-designed and installed hot water heating system will not only provide efficiency and comfort, but will also be highly serviceable.

Fortunately, most boiler manufacturers now offer their preference for specific near-boiler piping in boiler installation manuals. These piping and component details are adopted from the Hydronics Institute; the recommended piping schematics help installers avoid myriad problems.

Most boiler manufacturers have adopted this piping arrangement, and it's no coincidence. The piping detail covers all of the concerns in a very efficient manner. Some of the key issues addressed are these:

Placement of the circulating pump with its suction port immediately downstream of the expansion tank. This ensures that the pump's developed head pressure is added to system fill pressure. This helps to control air problems.

The fill valve is piped to the system with the expansion tank. This safeguards the valve from fluctuating (Turn to There really... page 108.)

It's modular

While at this year's AHR Expo, an editorial team from *Phc News* and *Plumbing Engineer*, along with a TV crew and Dan Holohan, visited with Jim Erhardt on the show floor. Holohan and Erhardt have known each other for years, so they jumped right into an easy conversation about a topic they both know a thing or two about: near-boiler piping.

As the big camera moved beyond the two of them, it includes a display at the very front of the Watts booth. The display shows a new near-boiler piping module that was the topic of Dan's and Jim's conversation and is sure to be of interest to hydronic heating professionals.

The preassembled, pre-engineered Boiler Header Module package consists of three Watts products; the PIPF flanged purge valve, the RBFF residential boiler fill fitting and the new AS-MB micro-bubble air separator in flanged configuration. These three products not only create technically perfect near-boiler piping, but also save the installation contractor considerable time doing this critical piping work by avoiding a bucket full of fittings to accomplish the same task.

The flanged micro-bubble air separator (AS-MB FL) features flanged connections — fixed on one side, swiveled on the other — that can accept the purge valve, a circulator or circulator flange. It uses a removable corrosion-proof coalescing media that resists temperatures to over 300°F. It also features the Watts

DuoVent air vent assembly that can be easily removed for inspection or replacement. The micro-bubble air separator is also available in 3/4", 1" and 1 1/4" FPT connections.

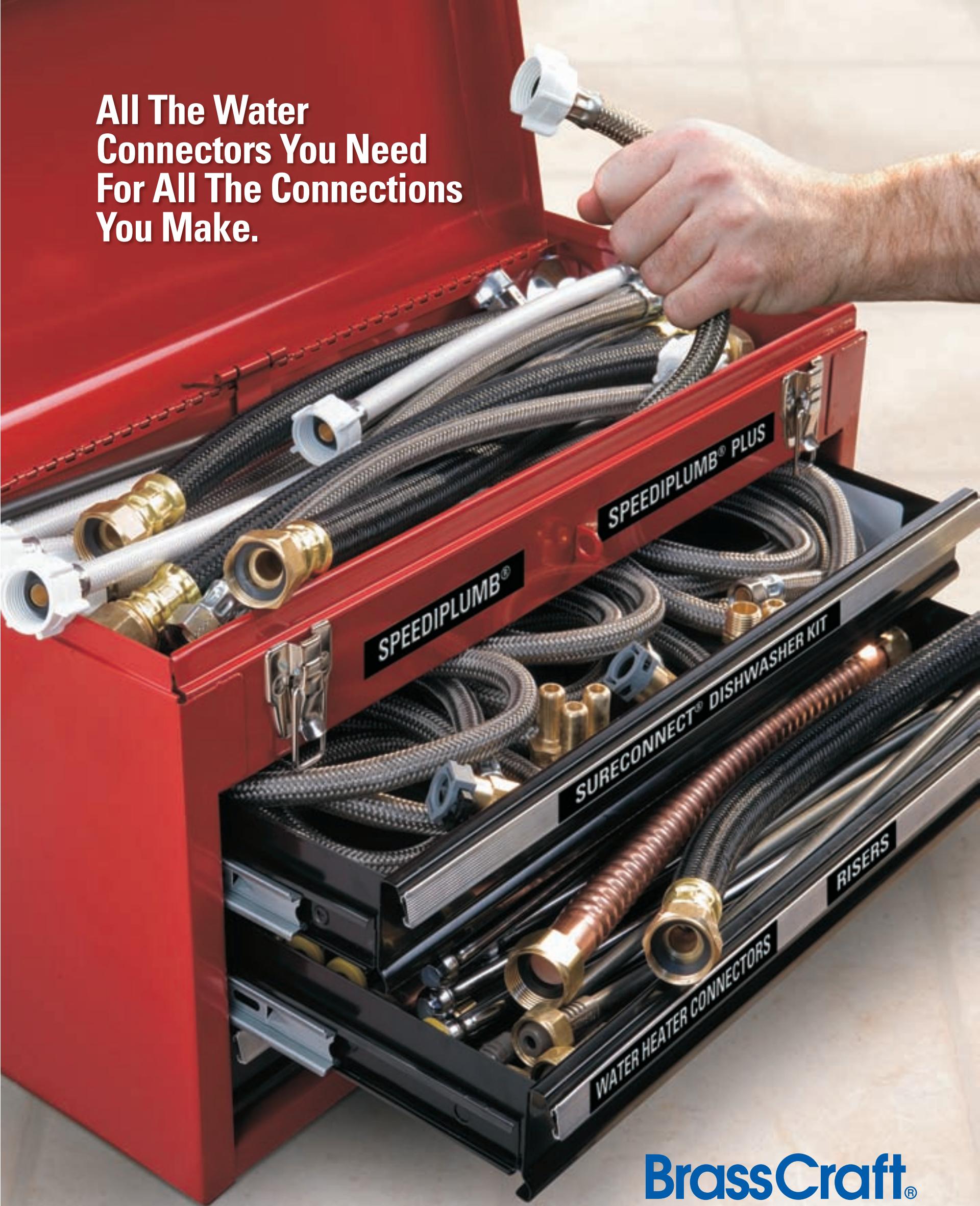
The residential boiler fill fitting features a one-piece forged body and a three-way ball valve design that facilitates easy servicing of the system fill valve and expansion tank. It also includes a pressure gauge for convenient reference to system pressure when making adjustments to the fill valve, a component that, alone, replaces up to 18 individual fittings.

The flanged purge valve features a full port ball valve design, and integral purge port with tethered cap and a swivel flange connection. It is available in 3/4", 1" and 1 1/4" FPT sizes.

With this combination of products, boiler installations are faster, neater and more compact. The Watts module takes up far less room in the near-boiler piping than it would if the pieces and fittings were assembled individually on site. The customer will no doubt appreciate the professional-looking installation as well as the improved efficiency and serviceability the Watts module offers.

All of the Watts components are available individually, collectively as the Boiler Header Module, or as components of other Watts hydronic packages. Learn more about them at www.watts.com.

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GAS CONNECTORS

GAS BALL VALVES

There really is a better way to do near-boiler piping

(Continued from page 106.) pressure caused by the pump. Without this step, unwanted fill water and excessive system pressure are sure to happen.

Optimal placement of the system air separator. There's no better place for this component than at the point of highest temperature and lowest pressure. This is where dissolved gasses are most likely to come out of solution and are most easily arrested and cast out of the system.

Inclusion of a system purge. After all, if a need arises, we want quick and efficient purging of an entire multi-zone system, including the boiler.

Taking this a bit further, some boiler manufacturers show an isolation valve between the system and the expansion tank. In a modern system with the pressure relief valve installed directly on the boiler, the

100-year-old engineering directive to not place a valve there – from the days when the relief valve was installed on the expansion tank – can now be ignored.

The benefit of this valve is to enable the easy servicing of a diaphragm-type expansion tank. A little-known fact about these tanks is that the air pre-charge must be checked annually. The only way to accurately do this is to isolate the tank from system fill pressure, meaning that the air charge can be accurately measured only when there's no system pressure on the wet side of the diaphragm.

Just like a tire on that car or truck you drive each day, a diaphragm tank, over time, can (and most likely will) lose some of its pre-charge. Just like riding on a soft tire, under-inflation can lead to premature tank failure. With inclusion of an isolation

valve, the critical service point of matching the air pre-charge to the system fill pressure becomes much easier to do.

In my years of attending and conducting contractor training seminars on hydronic design and installation, I've noticed that the old excuse of "this is the way I've always piped a boiler" is slowing giving way to the realization that there is indeed a "better way" to do this. After all, the near-boiler piping – like the arteries and valves nearest the heart – play an important role in seeing to it that the rest of the system gets what it needs. And, if not, you'll hear from your customers, all too often when it's late. And cold.

Dan Holohan's written some really good, really funny articles on this topic. And, hey, if our Yoda of the Hydronics Industry points to the wisdom of proper piping in the me-

chanical room, there's gotta' be something to it, Right?

A quick scan of boiler manufacturer piping diagrams reveals that a specific, smart, well-thought-out arrangement of components in the near-boiler piping will ensure highest operating efficiency and greatest ease of commissioning and service.

It's is our collective hope here at Watts that installation contractors will take these recommendations to heart. After all, you want your installed systems to perform as expected, and so your customers. If they're happy, you'll be happy, too. They sleep better. You do too.

And meanwhile, down in the mechanical room, that new mod-con is humming along beautifully, pumps, valves and other components are working in concert and warmth flows like hydronic heaven. ■

Jim Erhardt is the national market manager, Watts Water Technologies.

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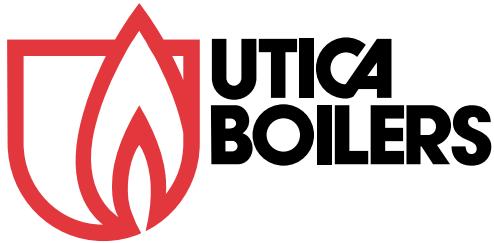
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Circle 74 on Reader Reply Card



School's ice age comes to an end

Winter temps aren't to be ignored in Silverton, Colo. Occasionally, the mercury drops to -20°F while Old Man Winter belts out hardball wind chills. And if the heating system isn't working, it gets cold in them thar hills.

Tell that to the teachers and students at the 99-year-old, three-story brick Silverton School who weathered two winters with no central heating system. It was in November 2008 that the school's coal-fired boiler coughed, wheezed, and spit out its last BTU.

That winter, a deep freeze bore down on the village of Silverton, high atop the San Juan Mountain range. In 1874, the town came to rest around subterranean silver and gold ore deposits at an elevation of 9,318 feet, now making it the nation's second-highest community.

There was little protection that year under the blanket of roof-high

"It was an ideal site for the first installation of Laars' newest mod-con boiler, designed to operate optimally in high altitude locations."

snow. The hardy students and their teachers all responded the only way they could at a time when there were no funds to fix the problem: they bundled up and went back to school.

And until recently — for the school's 64 students, K-12 — that's



Silverton, Colo. sees plenty of sub-zero temperatures during the winter, and when the community's school lost its boiler in 2008, students and faculty had to tough out those cold days because there was no money for a new boiler and upgrades.

the way it's been. Things began to change when the Denver Post finally got wind of the school's plight and published a story about it.

It was about that time when Pat Noonan, VP and part owner of Par Mechanical, based in Montrose, Colo., was at a job two streets down from the school. A friend at the job site that day said, "Hey, Pat, you won't believe this. Let's take a walk to the Silverton School."

When Noonan entered the gym he recalls seeing his breath, and yet students and teachers appeared to be oblivious to the cold. It was then that Noonan learned about the school's need.

"The very next day, I got a call from out of the blue, and it set everything in motion," said Noonan. The call he received was made by Rick Meek, co-owner of the manufac-

turer's rep firm for, TM Sales in Denver. Meek called to ask if Noonan knew of a site where they could place a new Laars boiler, ideally-suited for hotels and motels, apartments, volume water heating, snowmelting and schools. Oh, and they preferred a high altitude location.

They talked about the school; it wasn't long before Meek called Bill Root at Laars Heating Systems Company. Root liked the idea of donating the boiler: this was an uncommon need. "It was an ideal site for the first installation of Laars' newest mod-con boiler, designed to operate optimally in high altitude locations," said Meek. "The boiler's introductory size range is 750, 1,000 and 1,500 MBH; in Silverton, they needed up to a million BTUs in a bad way."

So the stars aligned for the school, and also for Laars' new MagnaTherm, a 95% thermal efficiency, direct-vent, sealed-combustion boiler with a 5:1 turndown. The plan would be to get it in place quickly so that students wouldn't have to endure another winter without heat. Noonan agreed to donate about half of their installation work to get the job going.

But just when good cheer was on its way, Old Man Winter interfered. On Dec. 6, 2009, a winter squall swept in with two to three feet of new snow, road-closing avalanches, high winds and temps in the balmy, 20° range. Conditions sent the boiler-bearing truck skidding down the highway. And there it stayed for three days at the base of Red Mountain Pass.

The snow stopped for a day. "It was just enough time to dig out the truck and get it back on its way to Silverton," said Noonan. The school's new heating system finally appeared like a giant box from Santa: a new Laars boiler with all the piped and pumped trimmings, complete with Christmas wreath.

Worth the wait

For years, Silverton's 524 residents were faced with the possibility of having to dig deep so that students at the nearly century-old school wouldn't need to bundle up for classes. Funding the necessary improvements was the key challenge.

In August of '09, the school received a construction grant by the State Board of Education approved an 11.9 million rehabilitation proj-



A crew installed the 1 million BTU MagnaTherm a few days before Christmas 2009, also running copper lines to several fan coil units in the 10,000-sq.-ft. gymnasium.



The school's new Laars MagnaTherm mod-con boiler, donated by Laars Heating Systems, arrived "like a box from Santa," but only after the truck carrying it skidded off the highway and was dug out three days later to continue its trip to Silverton.

ect, which included substantial energy improvements and a switch to geothermal as the main source of heating and cooling for most parts of the school.

The Department of Local Affairs and the Colorado Historical Society committed grants that total \$1.2 million, and Silverton voters approved (Turn to Mountain... page 128.)

Introducing the Residential Boiler Fill Fitting from Watts



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Save time by eliminating up to 11 threaded joints with our new RBFF service valve. The RBFF features a 3-port ball valve design to make servicing system expansion tanks and fill valves a snap. A conveniently positioned pressure gauge is also included for easy fill valve adjustment. The integral drain port is used for relieving pressure from the expansion tank for accurate pre-charge measurement and can also be used for a variety of system draining and filling functions.

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Circle 75 on Reader Reply Card

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Even in a down economy, this firm is the Smylie one

BY DAN VASTYAN

For Smylie One Heating, Cooling, & Plumbing Co., Inc. going green has nudged the company into growth, even during these less-than-friendly economic times.

Smylie One is a full service mechanical contracting firm involved with all types of plumbing, HVAC, hot water and steam hydronics, radiant heat, geothermal and hybrid systems installation and service work. Based in Chesterland, Ohio, their work is evenly split between



residential and commercial work. Started in '03, Smylie One prides itself on a foundation of integrity and trust.

Today, the company is headed by Bill Smylie, Steven Smylie, Gary Rosen and Rick Coates. The four have been successfully working together for more than 30 years. With the highest quality service and a whatever-it-takes mindset, Smylie One is committed to maintaining long-term customer relationships, even if it means shipping needed parts via next-day air.

Customers always receive — you guessed it — "Service with a Smylie." The company was built on customer referrals, and that continues to make up the bulk of their work today.

Smylie One has a three-stage guarantee offered to all residential customers who're having central HVAC systems installed:

First is their Delivery Guarantee. When a date for work to begin is scheduled, their crews will show up during that week and will remain on that job until the work is completed. If that's not the case, \$100 comes off the purchase price.

The No-Frown Guarantee is next. If a properly-maintained compressor or heat exchanger fails due to normal operation within five years, the furnace or condensing unit will be replaced at no cost to the customer.

Last in line is the Final Price Guarantee which promises that the proposal price is the final price. There are no hidden charges, even if something was overlooked, incurring additional work.

Unexpected growth

Smylie One managers believed that revenue in 2009 would be flat (compared to '08). But that's not what happened when the final tally was made. For last year, they saw 7% growth. Last years' expansion included two new technicians and a plumber, bringing the company total to 25 employees. And, keeping the growth curve moving in the right direction, this year is budgeted for 10% growth.

According to partner Rick Coates, (Turn to 'Service... page 116.)

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GREENING STEAM

How to Bring 19th-Century Heating Systems into the 21st Century (and save lots of green!)

By Dan Holohan

NEW

GREENING STEAM

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Dan Holohan

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Dan Holohan

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Since its' introduction, the 3-pass Burnham MPO has earned the reputation of being a highly reliable and efficient oil-fired, water boiler. So, how can anything top the original MPO? If you're the industry leader in high efficiency home heating, you make it better....the MPO-IQ! Equipped with the revolutionary Burnham IQ Control System, and featuring a modern, attractive design, the MPO-IQ is ushering in a new age of oil boilers from the industry leader in high efficiency home heating.

The Burnham IQ Control System monitors boiler operations, and the built-in IQ option panel accepts Burnham IQ Option Cards for **simple "plug & play" installation** of outdoor reset, low water cutoff, and aquastat. The IQ Control System integrates aquastat, relay, and ignition functions into a single module. It features an LED readout which displays boiler status and diagnostic information. A **touchscreen interface**, using clear, simple statements and instructions is also available!

Come see the new MPO-IQ at NAOHSM, in booth 423.

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Circle 76 on Reader Reply Card

Tankless water heater smart solution at California hotel

On December 2nd, 2009, Kintetsu Corporation opened its second "Miyako Hybrid Hotel" in Torrance, Calif., which is a neighboring city of Los Angeles. The first Miyako Hotel is located in central Los Angeles.

Takenori Kakutani, president of Kintetsu Enterprises Co. of America, explained that the hotel's concept is based on creating an eco-friendly space for the many business executives and tourists who travel to Torrance. "The hybrid idea is conserving energy and mixing eastern and western culture," Kakutani said.

The seven-story Miyako Hybrid will include amenities like a full-service shiatsu spa and a Japanese restaurant. On its rooftop there are solar panels installed and other energy-efficient features to be considerate of environment and energy saving. All 208 guest rooms are equipped with Japanese-style soak tubs, which called for a high-demand hot water system. Their choice was the energy-efficient Noritz commercial water heater, since the first Miyako Hotel has been extremely satisfied with the same Noritz system.

The new Miyako Hybrid Hotel has a total of 14 Noritz units. Eight Noritz N-1321M-ASME commercial water heaters are installed on the roof top supplying endless hot water to 208 guest rooms. The other six units are on the ground level providing hot water to the spa and restaurant. The Noritz system helped contribute to the hotel's Silver LEED certification due to its higher efficiency over traditional water heating system.

Quick Hits

Property profile

Location: Miyako Hybrid Hotel

City: Torrance

Max. occupancy: 208 guest rooms

Installer: DK Mechanical

Noritz installation

Location: Outdoor installation, ground level and roof top.

Applications: 208 showers, tubs, sinks, seven mop rooms, spa and restaurant.

Vent set-up: Outdoor vent cap (VC-132).

Noritz heater profile

Noritz units:

System #1: Eight N-1321M-ASME

System #2: Six N-1321M-ASME

Noritz accessories: Isolator valves (IK-WV-9-TH) and system controllers (SC-201-12M)

Fuel type: Natural gas

Gas consumption:

System #1: Max. 3,040,000 BTUH – Min, 22,500 BTUH

System #2: Max. 2,280,000 BTUH – Min, 22,500 BTUH

Flow rate performance:

System #1: 0.7 – 105.6 GPM

System #2: 0.7 – 79.2 GPM

Temperature settings: 100-180 degree F

Warranty: 5 years on heat exchanger and parts (non-prorated)



The Miyako Hybrid Hotel features Japanese-style soak tubs, a spa and restaurant, which use a lot of hot water, but 14 Noritz tankless water heaters easily meet the demand.



Eight Noritz N-1321M-ASME commercial water heaters on the rooftop supply hot water for the soak tubs in the hotel's 208 guest rooms.



Six units on the ground level provide ample hot water for the spa and restaurant.

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G U A R A N T E E D F O R L I F E

Circle 77 on Reader Reply Card

'Service with a Smylie' more than a tagline

(Continued from page 112)

the firm specializes in challenging work of greater-than-average complication. "We love a good challenge," he said. "Some of our technicians are skilled at hot water or steam system hydronic work and others are good at wrangling mini-split HVAC delivery into tight spaces."

Smylie One's residential work consists almost entirely of add-on and replacement jobs. But in the

commercial realm, their work entails some new construction. Smylie One serves about 5,000 customers, mostly in the greater Cleveland area and its surrounding suburbs.

"A lot of the work we did last year involved the installation of new high efficiency systems," said Coates. "The majority of homeowners — about 75% — are taking advantage of Federal tax credits," he added.

Big jobs for mini-splits

Smylie One currently has bids out on two server room cooling jobs. These are interesting applications because, in order to keep the computer equipment cool, cooling systems of unusually high tonnage are required to cool relatively small areas.

The company has done several of these jobs in the past. To remedy the need for additional cooling, often for

interior spaces already served by central HVAC (though with inadequate temperature and humidity control) they routinely use Fujitsu mini-split systems.

"We like Fujitsu, and install a lot of their gear," said Coates, "Four of us have gone through their training programs and are now manufacturer-certified. This has been an advantage because Smylie One is now promoted on Fujitsu's website, and we get sales leads that way."

Smylie One recently finished a residential job that entailed cooling for a 500-sq.-ft. sunroom addition. The house is hydraulically heated and has central air.

"The homeowner is a big entertainer, sometimes packing up to 40 people into that room," explained Coates. The customer wanted air conditioning in the room because in the middle of the summer it was simply too hot to enjoy. A 2-ton Fujitsu mini-split system solved the need for

cooling and dehumidification.

Another job where the Smylie crews used Fujitsu equipment was a 2,500-sq.-ft. Cape Cod that that was strapped with an undersized and inefficient central heat pump. A Smylie One crew installed an 18,000 BTU dual-zone heat pump. The evaporator units were placed at opposite ends of the home, delivering additional comfort control to the master bedroom and also to a room near the entry where the homeowners especially enjoyed reading.

"On the first day, we were very skeptical. We could hardly believe that the small indoor air units could provide the comfort we needed," explained the woman of the house (see photo). "But we're believers now and only wish we'd made the change sooner."

'Wet Heads', too

Smylie One offers free home plumbing inspections to customers who have a residential service agreement with them. The company also takes pride in their hydronic work, specializing in challenging installations. For water heaters, they rely chiefly on Bradford White.

A recent job in Shaker Heights consisted of a family room edition. The 450-sq.-ft. area is heated by a radiant staple-up system attached to a direct-vent Bradford White water heater.

"The Bradford White guys were here two weeks ago," said Coates, "They showed us the new Icon control and safety shut-off system they developed and now manufacture as part of all residential water heaters. It looks very promising. We'll have lots of applications for it."

Service with a Smylie

The day after Smylie One technicians completed the ductless mini-split installation at the home with the old central heat pump, the homeowners called to say thanks.

"We convinced and converted 'em, that's for sure," said Coates, smiling. And then, as if on cue, Coates added: "Service with a Smylie," just as promised.

"It's nice when that happens," concluded Coates. "It really is a source of satisfaction to get calls (sometimes, letters) like that because they support the reason why we're in the business after all."

Dan Vastyan is a trade journalist who works for Manheim, PA-based Common Ground, a trade communications firm specializing in work for the hydronic, plumbing, HVAC and renewable energy industries.



Homeowners can scarcely believe a mini-split unit that occupies so little space can do such a big job.

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The WATER RAM clears sinks, tubs, toilets and drains fast. Compressed air creates a shock wave that breaks up stoppage. Effective around elbows and bends; bypasses vents.

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Circle 78 on Reader Reply Card

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Learn more about water systems and the benefit of constant pressure at www.constantpressure.com.

 **Franklin Electric**



Circle 79 on Reader Reply Card

Heat pump water heater

Expanded line of hybrid heat pump water heaters features a new 40-gallon model designed for smaller households with a lower hot-water demand. The new HP-40 hybrid meets ENERGY STAR® requirements; certification is pending. The unit will be available in early June. The new HP-40 hybrid offers an Energy Factor (EF) of 2.0, or more than twice the energy efficiency of a standard electric storage water heater. **Rheem**.

Circle 101 on Reader Reply Card

2400 Series circulators

New 2400 Series pumps are designed for quiet, efficient operation in a wide range of medium to high



flow/head applications, including hydronic heating, chilled water cooling and hot water recirculation. The space-saving, close-coupled, maintenance free motor with permanently-lubricated bearings and carbon/silicon-carbide mechanical seal provide superb reliability for a wide variety of uses. **Taco**.

Circle 102 on Reader Reply Card

Wood & concrete anchors

The Sammys Swivel Head® product line is for fire protection contractors. The latest model, the SH-GST/CST, allows $\frac{3}{8}$ " or $\frac{1}{2}$ " threaded rod to be anchored to wood and concrete structures. The innovative swivel-head feature in-

stalls vertically and swivels up to 89° offering design flexibility for end-users to hang plumb in extreme roof pitches. The anchor's specially designed x-point removes material and cuts into wood for ease of installation. When installing into concrete, this product requires a $\frac{1}{4}$ " pre-drilled pilot hole; no pre-drilling required in wood. **ITW Buildex**.

Circle 103 on Reader Reply Card

★ **Phc News product of the month** ★

**Stainless Steel Full-Flow Fittings**

Fittings are comprised of Type 304 or 316 stainless steel and are solution annealed for enhanced corrosion resistance. Stainless Steel Full-Flow Fittings have UL, ULC, IAPMO, NSF-61 and NSF-61 Annex G approvals, allowing installation in any type of application, such as industrial, mining, HVAC and plumbing. These fittings are a proven solution for rooms or facilities that require non-corrosive conditions, including pulp and paper plants, chemical food lines, wastewater treatment plants, and pharmaceutical laboratories. **GRINNELL Mechanical Products**.

Circle 100 on Reader Reply Card

The Metal Head transition fitting

Surrounds and protects the PVC insert for a quality connection with no restriction to flow vs. other PVC transitions. PVC transition fittings are

ideal for water service lines, irrigation/sprinkler systems and other transactions. Metal Head features a unique design that provides full flow with no restriction through the fittings. The copper surrounds and protects the PVC insert, for a more durable connection.

All transition fittings conform to ASTM F 1970 and are designed for use with PVC Sch. 40 pipe and fittings conforming to ASTM D 2466. Every fitting is 100% production tested for a leak-proof connection. Standard and no lead models are available. **Sioux Chief**.

Circle 104 on Reader Reply Card

FloWise water-conserving showerheads

Company has dramatically enhanced its top-rated FloWise® col-



lection of water-conserving bath showerheads, including, for the first time, hand showers, along with an increased assortment of styles in up to five finishes. By replacing an older showerhead with a FloWise showerhead, a family of four can save approximately 11,000 gallons of water annually. The expanded FloWise line is designed to meet the growing demand for choice in product type and style when it comes to water saving showerheads. **American Standard**.

Circle 105 on Reader Reply Card

Water filter station

The HydrationStation dispenses filtered water through a touch-free, hygienic unit whereby encouraging users to reduce bottled water use. Each HydrationStation saves over 37,000 16.9 oz. bottles per year, with average use. Over the past year, the HydrationStation has been installed at numerous buildings across the nation. **Haws Corp.**

Circle 106 on Reader Reply Card

Tranquility (TAC) Cased Air Coil Series

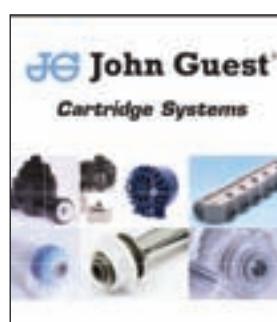
Tranquility® indoor coils come in sizes 026, 038, 049 and 064 and are specifically designed and matched for use with Tranquility® indoor and outdoor geothermal split units. Using EarthPure® HFC-410A refrigerant, the TAC exceeds federal requirements for the 30% tax credit on installation costs when it is paired with a Tranquility® split unit. Also, when paired with a split, the TAC exceeds ASHRAE 90.1 and Energy Star 3.0 efficiencies. **ClimateMaster Inc.**



Circle 107 on Reader Reply Card

Plastic and metal half cartridges

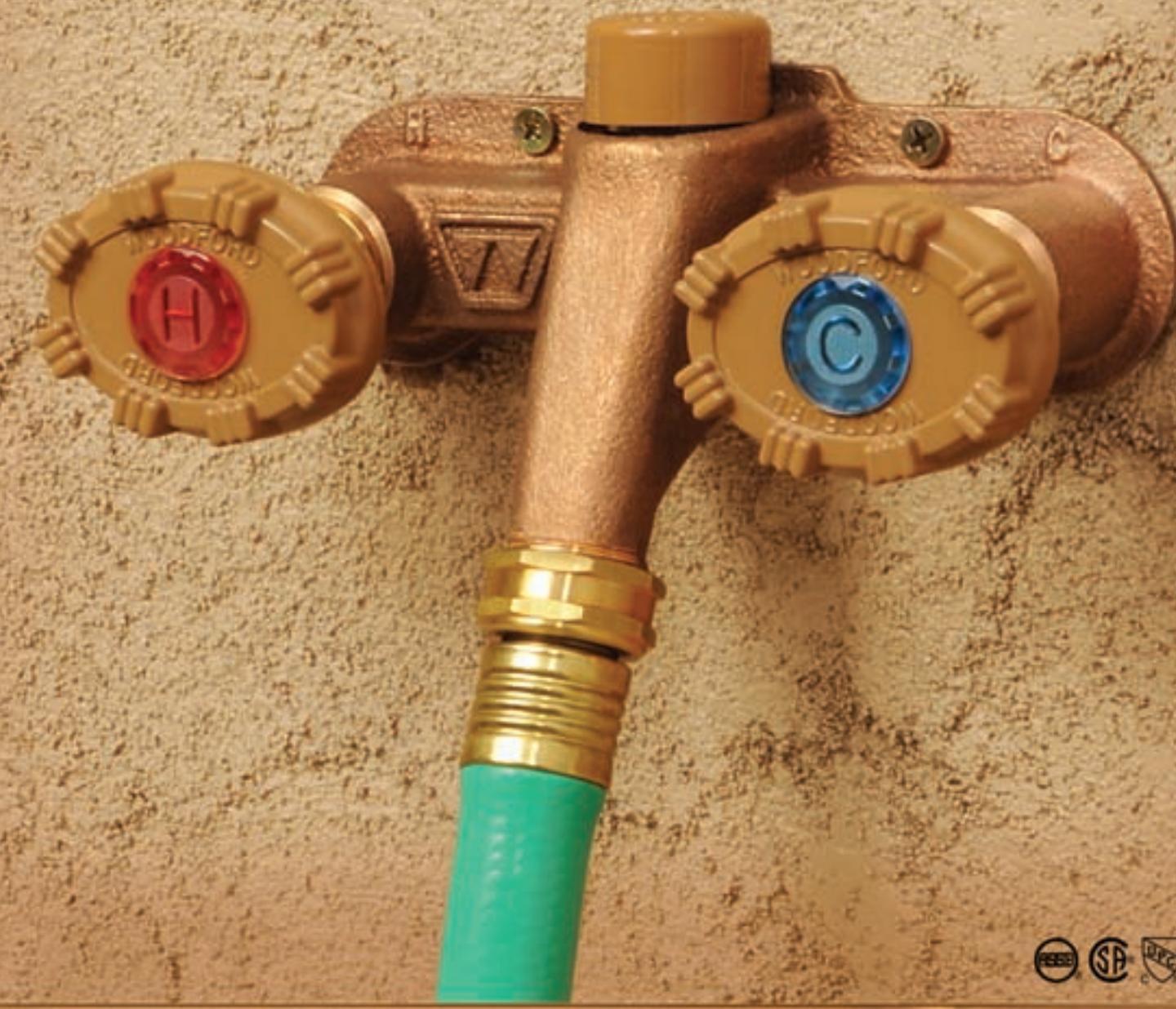
Catalog features Cartridge Systems. Half Cartridges have been designed to provide a simple, cost-effective method of integrating Super Speed-fit® technology into a wide variety of original equipment. Half cartridges are used for quick connections (no threads, flush mounting) to pumps, valves and manifolds in water filtration and beverage systems and in pneumatic applications. **John Guest USA**.



Circle 108 on Reader Reply Card

Hot₂Outdoors

Hot water when and where you need it.



Relax, it's a Woodford. The Woodford Model 22 delivers year-round hot and cold water outside, out of the tap, perfect for washing the car, filling the kiddy-pool or bathing the dog. And Woodford's patented anti-rupture, anti-siphon and anti-worry technology allows for expansion when temperatures drop below freezing, so homeowners are protected if they forget to disconnect the hose, even during freezing weather.

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Potable water recirculator pumps

Featuring ECM (Electronically Commutated Motor) technology and a patented spherical motor design, the ecocirc® eliminates the need for a conventional shaft, seal and bearing assembly. The rotor/impeller is the only moving part in the entire pump and it is magnetically balanced on a stationary ceramic bearing inside the pump housing to provide silent, long-lasting operation. Bell & Gossett.

Circle 110 on Reader Reply

2400 control unit

Comes with the PHCC Pro Series 2400 Battery Backup Sump Pump

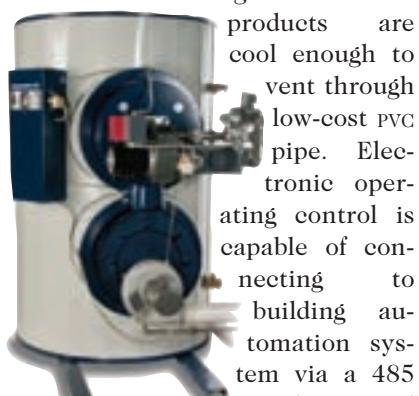


System. This new control unit adds a slide switch on the front panel that allows the user to select either a "maintenance-free" or "non maintenance-free" battery. Glentronics, Inc.

Circle 111 on Reader Reply Card

99% Efficient Condensing water heater

TURBOPOWER 99 gas water heater features 99% thermal efficiency at full fire with a 100 degree temperature rise. The heater employs a four-pass, submerged, fire tube heat exchanger. The flue products are cool enough to vent through low-cost PVC pipe. Electronic operating control is capable of connecting to building automation system via a 485 serial port and



ModBus RTU protocol. PVI Industries, LLC.

Circle 112 on Reader Reply Card



Circulator pump installation kits

Extensive Isolator® line includes kits featuring valves for installation on both the intake and discharge sides of a circulator pump. Each kit includes an original Isolator and Patented Isolator with Drain — in your choice of stationary or rotating flanges, two full-faced flange gaskets, mounting hardware, and bonus wing style "T" handles. Company's designs focus on time and space saving concepts that simplify future maintenance and upkeep of all piping systems. Some of Webstone's trademarked and patented items include; The Isolator, Isolator EXP and Pro-Connect™ and Pro-Pal step saving valves. Webstone.

Circle 109 on Reader Reply Card

Upflush plumbing systems

The new SANITOP — part of the recently unveiled "Quiet Range" lineup of upflush plumbing systems



— is the smallest and quietest macerator on the market with a noise level nearly 10 decibels less than the older upflush toilet systems. Measuring only 13 inches wide, SANITOP can be used to create an additional half bathroom in residential spaces that lack below-floor drainage. Saniflo U.S.A.

Circle 113 on Reader Reply Card



TA Balancing Valve

Comes in 14- and 16-inch (350 and 400 mm) sizes for use in large-diameter applications with high flow requirements — the first-of-its-kind calibrated balancing valve in this size range. TA valves offer precise flow measurement, precision flow balancing, optimized energy efficiency, more stable temperatures and reduced energy costs. Victaulic.

Circle 115 on Reader Reply Card

Mechanical Cleanout Test Plug

New, patent-pending Test-Tite® Mechanical Cleanout Test Plug is designed to enable quick testing of plumbing drain, waste and vent (DWV) systems without tools, compressors, pumps, hoses or gauges. It can be tightened by hand in sec-



onds. Plug is used to test pressure or temporarily block DWV systems for up to 40 vertical feet of pipe. It can be used in place of current standard pneumatic cleanout test plugs, and holds the test longer without the risk of leakage during testing. IPS Corp.

Circle 116 on Reader Reply Card

Pressure control valves

Pressure-Regulated Flow Control Valves for commercial hydronic applications. The valves represent an important tool for contractors seeking to provide superior energy efficiency, comfort and ease of use in schools, hotels, hospitals, office buildings and other settings.



technology provides for constant level monitoring of tank applications. The compact design works well in tight spaces. Another time saving feature includes the ability to make adjustments at the control panel, not in the tank. Installer Friendly Series® (IFS) state-of-the-art control panels offer simple operation, digital display of settings, reliability and even data-logging with the IFS In-Site® control panels. SJE Rhombus.

Circle 114 on Reader Reply Card

Circle 117 on Reader Reply Card

Tired of giving away **Green?**

Then **“Go Green”** by replacing your old inefficient boiler with a new Weil-McLain high-efficiency Ultra Series 3

For more information on the entire line of Weil-McLain high-efficiency products visit www.weil-mclain.com



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Circle 6 on Reader Reply Card



Rigid coupling

The Style 107H QuickVic® rigid coupling for HVAC, utility and process piping features enhanced pressure ratings and expedites project construction by only requiring standard hand tools for installation. Has no loose parts and does not require any disassembly before installation. Allows installation to be faster, easier and safer. Enhanced pressure rating up to 750psi; available in sizes 2"-8". Designed for joining standard roll grooved and cut grooved steel pipe. **Vietaulic.**

Circle 119 on Reader Reply Card

Ball valves

Full Port 757 Series ball valves are available in lead free and standard



versions with sweat or threaded ends. Both versions are 600 WOG-150SWP and come with a blow out-proof copper alloy stem and Teflon seats. Conform to NSF, CSA and MSS-SP-110 specifications. Available in sizes ranging from 1/4" up to 4". Threaded ends comply with ANSI B2.1 and are UL/FM approved 1/4" - 2". **Mateo-Norca.**

Circle 120 on Reader Reply Card

Expansion valve

EcoFlow™ achieves balanced distribution of refrigerant in A/C systems and avoids maldistribution in evapo-



rator circuits. Install it on the evaporator and it automatically monitors the flow of refrigerant into the evaporator, adjusting the flow to each circuit independently. Corrects uneven refrigerant distribution and reduces superheat temperature. **Danfoss.**

Circle 121 on Reader Reply Card



Vessel sink faucets

Automatic hands-free faucets for vessel sink applications. Made of lead free brass tube with extra wall thickness. Vandal-resistant aerator built into tube. Tube is seamlessly welded to sensor base for clean minimalist look. Available in 18 models of varying heights, and in 20 industrial grade finishes. All faucets are powered by the time-tested MAC 400 system, with robust electronics and solid brass solenoid valve. **MAC Faucets.**

Circle 118 on Reader Reply Card

Service sink

The FS-WM Spec-Line wall-mounted service sink has been added to this supplier's already-comprehensive product line. Offered in two model sizes, a 23" x 19" x 10" and a 27" x 21" x 12", these sinks are constructed of 14-gauge, 304 stainless steel. Stainless steel tubular wall brackets secure the sink to the wall for added support. Sink bowl corners



iBox Universal Plus rough-in valve

Accommodates two mixing technologies: thermostatic and pressure balance, enabling many installation possibilities, including: Thermostatic with Volume Control for one function; Thermostatic with Volume Control and Diverter for two functions; Thermostatic plus Quattro Diverter for three functions; Pressure Balance for one function; Pressure Balance plus Trio Diverter for two functions; Distributors and contractors need to stock only one rough for all situations. **Hansgrohe.**

Circle 123 on Reader Reply Card



Steam system

The Total Sense Collection is comprised of a menu of residential steam-bathing products, each of which is designed to deliver a complete, customized experience. From user-friendly digital control technology to an enhanced line of generators, a superior steamhead design and new AromaSense™, ChromaSense™ and AudioSense™ options rouse the senses of smell, sight and sound. **Steamist.**

Circle 125 on Reader Reply Card

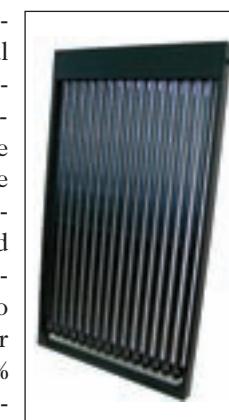
Lead free tankless valve kit

A "no-lead" version of the Cimkit™ tankless water heater valve kit has



Solar thermal collectors

The Smart 10, 15 and 20 Solar Thermal Collectors received formal SRCC industry certification. They are tested at the factory, light-weight and come fully assembled to reduce labor



up to 75% during installation. Engineered to withstand hailstones up to 1" diameter and wind gusts up to 155 mph. Provide excellent performance in both warm and cold climates and produce heat in both sunny and cloudy conditions due to superior tube and collector insulation. Feature a lightweight aluminum frame and stainless steel manifold that will not scale or rust. **Solar-Smart.**

Circle 124 on Reader Reply Card



Stealth toilet

The patented hydraulic and water-saving technology behind Stealth involves a remarkable combination of air and water working in unison, which helps to deliver a cleaner and more reliable flush. Also, because Stealth technology maintains pressure in the toilet's trapway instead of the tank, it produces a remarkably quiet flush without residual noise. **Niagara Conservation.**

Circle 127 on Reader Reply Card



Basco-Rolaire

With its industrial flair and functionality, Rolaire is the perfect combination of aesthetics and usability, evoking a sense of urban sophistication. Rolaire's rolling door mechanism provides a distinct, simple design that results in a contemporary, edgy look. Its fixed panel options fit well in spaces with limited accessibility or obstructions. Rolaire features $\frac{3}{8}$ " thick glass in a variety of options. The door includes a raised, roller-style header and 8" pull-through ladder handle. Basco.

Circle 129 on Reader Reply Card

WaterSense designation

Company has earned the WaterSense label on the majority of its lavatory faucets. The company re-



cently converted those faucets to water saving (1.5 gallons per minute), saving users 20-30% water over other faucet options. Product line includes beautifully styled Powder Room Collections that feature toilets, bidets, pedestal sinks, premium vanities, vessel sinks and matching mirrors. Danze.

Circle 130 on Reader Reply Card

Accessory water faucet features

Series LVH 1200 accessory water faucet features futuristic lines with a modern look; while making a design statement

in modern kitchens or a stunning accent to eclectic ones. Instead of knobs, the LVH 1200 uses twin levers that flank the base of its barrel-tipped spout. The spout features a generous 6" reach and stands over 7" above the countertop; allowing for the easy filling of cups, pots, and pitchers. The lead free faucet boasts a built-in aerator and ceramic disc valves to ensure long-term operation. Water, Inc.

Circle 131 on Reader Reply Card



Flushmate pressure-assisted technology

FLUSHMATE® pressure assisted technology is the leading flushing system for high performance and low consumption. The pressure assisted system harnesses the pressure from the water supply line to provide the energy needed to complete the flush. The ULF model offers less than 1.6 gpf flushing and the HET model offers less than 1.0 gpf flushing. For the best in one flush performance and 25 years of proven reliability, look for the original; look for Flushmate, which includes a 10-year warranty. Sloan Valve Co.

Circle 128 on Reader Reply Card

Aromatherapy towel warmer

Mr.Steam has revolutionized the bathroom industry with the introduction of the first Aromatherapy towel



warmer offering the release of aromatherapy oils that may help with relaxation, reduce anxiety and invigorate the body. Easy to install, affordable and stylish, all Mr.Steam 200 models of towel warmers contain the aromatherapy oil well, which effortlessly releases aromatherapy essences upon each use. The use of aromatherapy has become increasingly popular due to the potential healing benefits attributed to this alternative medicine including stress reduction and mood improvements. Mr. Steam.

Circle 132 on Reader Reply Card



Tropic Collection

Chic, smaller fixture shapes and contemporary furniture with playful, casual details come together in the Tropic Collection form. Rattan pattern details in the richly finished wood cabinets and clean contemporary lines in the round and oval sinks combine to create a versatile new bath collection that stimulates the imagination. American Standard.

Circle 134 on Reader Reply Card

Yume tub

Company offers a variety of products that can meet the physical needs of all family members. Shown is the low-profile



shower base with a teak shower tray and coordinating teak shower seat, which folds up out of the way when not in use. Complementing MTI's extensive assortment of shower bases is the Teutonic Enclosure, which features sliding glass door that glides with rollers along an overhead stainless steel rail, making entrance and exit in the shower easier. MTI Whirlpools.

Circle 135 on Reader Reply Card

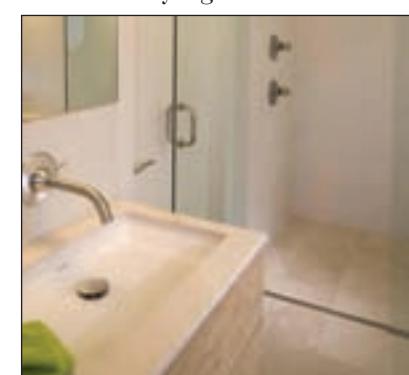
Sydney smart back outlet

The Sydney Smart back outlet high efficiency toilet is one of the first back outlet dual flush toilets to be WaterSense labeled. The Sydney Smart back outlet features Caroma Smart™ technology, delivering the ultimate



combination of design, water savings, and performance. Back outlet is dual flush, using 1.28 gallons of water per flush (gpf) for solid waste and 0.8 gpf for liquid waste and toilet paper. This averages less than 0.9 gpf, which can save the average family of four more than 5,000 gallons annually when replacing a 1.6-gallon toilet and nearly 19,000 gallons per year compared to a 3.5-gallon toilet. Caroma.

Circle 133 on Reader Reply Card



installation keeps this shower drain in demand by homebuilders and contractors, as well as by discerning homeowners. Quick Drain USA.

Circle 136 on Reader Reply Card



Root cutting machines

Metro-Rooter™ is the Mini-Rooter™ of root cutting machines. With a capacity of 75 feet of $\frac{5}{8}$ " Flexicore® wire rope center cable, the Metro-Rooter™ handles roots and other tough stoppages in 3" through 6" lines. Or switch to 100 ft. of $\frac{1}{2}$ " cable for smaller jobs. Metro-Rooter™ features a fold-down handle, truck loading wheel, and tough, lightweight frame on 10" heavy duty wheels for easy transport. General Pipe Cleaners.

Circle 138 on Reader Reply Card

6.5" 412 V-Jaw tongue and groove plier

Tool offers professionals and DIYers the same quality design and right-



angle, maximum-bite grip as the other V-Jaw pliers — only in a more compact frame, making it easier to work with smaller piping and tubing. Undercut tongue-and-groove design of the 6.5" V-Jaw plier assures no slip jaw action. CHANNELLOCK Inc.

Circle 139 on Reader Reply Card

Auto cable feed

Four models feature auto cable feed that advances and retrieves cable with the push of a lever. Cable guide hoses help keep work area clean while the guides keep hands off rotating cable for added safety. Model D-5 cleans 3" – 10" diameter lines up to 100 ft.



Model Z5-P-AF cleans 1 $\frac{1}{4}$ " – 3" lines up to 100 ft. Runs $\frac{1}{2}$ " galvanized aircraft wire inner core cable. Model E-P-AF cleans 1 $\frac{1}{4}$ " – 3" lines up to 100 ft. Inner drum eliminates cable buckling. Model CT cleans 1" – 2 $\frac{1}{2}$ " lines up to 50 ft. Electric Eel Mfg. Co. Inc.

Circle 140 on Reader Reply Card

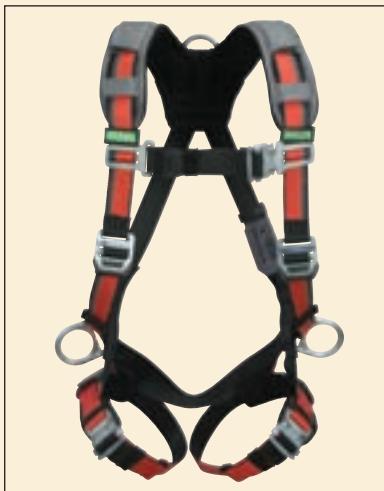
★ Phc News tool of the month ★



PEX expander tool

Fueled by the common passion of delivering increased productivity to plumbing and heating professionals, the companies have aligned to develop a comprehensive solution for installing Uponor's PROPEX® fitting system. The M12™ and M18™ PROPEX® Expansion Tools will launch later this year, offering features such as an auto-rotating head for accurate, one-handed expansion. The new tools will not only accelerate the speed in which users can install PROPEX® connections, they are also compatible with more than 20 tools on their respective battery platforms. Uponor & Milwaukee Tools.

Circle 137 on Reader Reply Card



Full-body harness

EVOTECH harness offers advanced design features that improve user comfort, ease of use, durability, and user safety. The EVOTECH Harness is RFID enabled, offering the Field ID Safety Network with Field ID access to provide a reliable, on-line inspection and safety compliance (ISCM) management system. Meets OSHA, ANSI Z359.1/ANSI A10.32, and CSA approvals. MSA.

Circle 141 on Reader Reply Card

HCB-200 Hole Master®

Light-weight and easily portable, HCB-200 Hole Master® guide provides a means of clamping onto pipe and using a drill and hole saw to cut a hole in pipe. The HCB-200 is strong enough for supporting cuts on carbon steel or stainless steel pipe yet light-weight enough



to clamp onto PVC and other plastic pipe. Use the Hole Master on depressurized piping systems only. An electric or cordless drill is needed. The versatile HCB-200 accommodates any hole saws that fit the operator's drill and the chosen bushing. There is a thumb screw on the guide that holds the bushing in place. Reed Mfg. Co.

Circle 142 on Reader Reply Card



Meter transmits readings to IR cameras

METERLINK™ wirelessly connects FLIR infrared cameras to Extech meters via Bluetooth™ to accelerate and simplify inspections. During infrared inspections of electrical components, users can transmit key electrical readings such as current or voltage from an Extech EX845 clamp meter directly to a FLIR infrared camera. METERLINK™ instantly imprints the electrical readings onto a related infrared image, ensuring accurate documentation. Extech Instruments, A Flir Company.

Circle 143 on Reader Reply Card

Auto-Clean™ drain cleaning machine

Works in pipes from $\frac{3}{4}$ to 1 $\frac{1}{2}$ inches in diameter. It is designed to clean



sinks, tubs and shower drains. The Auto-Clean drain cleaning machine features dual-direction AUTOFEED technology, which conveniently advances and retrieves the drain-cleaning cable. The strong, durable MAXCORE® 50 cable plows through tough blockages using the $\frac{1}{4}$ -inch by 30-foot inner core cable. RIDGID.

Circle 144 on Reader Reply Card

Compact excavator

The 324 excavator is a conventional tail swing unit in the 1.5-ton operating



class. Its boom cylinder is attached to the top of the boom instead of the bottom, giving it more protection from damage while digging. Lighter weight, yet durable boom fabrication with cast pivot joints. Bobcat.

Circle 145 on Reader Reply Card

J-3080 Jet-Set

Get higher flow without a trailer.

Clear stubborn grease stoppages, sand, sludge and ice. A 12 gallon buffer tank gives the safety margin needed to use the J-3080 on larger more difficult lines.

- 20 hp Honda® engine with electric start drives 3000 psi, 8 gpm pump.
- Vibra-pulse® on demand, helps the hose on long runs and around tight bends.



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or visit www.drainbrain.com.

Circle 156 on Reader Reply Card

J-1450 Electric Jet

Compact!
Portable!
Powerful!



This compact easy-to-use jet generates 1500 psi at 1.7 gallons per minute, yet 1-1/2 hp motor pulls only 13 amps.

- Clears grease, sand and ice from 1-1/2" to 4" lines up to 150 ft.
- Removable hose reel reduces height from 32" to just 14-1/2".
- Telescoping handle and wheels make it easy to roll to and from the job.

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Circle 159 on Reader Reply Card

J-CSN Chain Saw Nozzle

New root cutting nozzle



Rip through roots with General's new Chain Saw Nozzle. Lengths of chain can quickly and easily be switched for different diameter pipes. Spins at up to 10,000 RPM.

- 1/2" nozzle works well in combination with the 12 gpm Typhoon trailer jet to clear 4", 6", 8", and 10" lines.
- 3/8" nozzle is available in 4, 5.5 and 8 gpm models to clear 2", 4", 6", and 8" lines.

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Circle 160 on Reader Reply Card

Other models available

See complete Jet-Set catalog for details.

J-3055 Jet-Set The most power you can get without a holding tank.

The powerful J-3055 has the thrust to pull the hose down long runs, the pressure to cut through tough stoppages, and the flow to flush them away.

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- Removable 300 ft. hose reel mounted on a heavy-duty frame with four pneumatic tires.



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J-2900 Gas Jet

Big machine features at a bargain price.

An economical alternative to the larger gas jets, the J-2900 is lighter and more maneuverable yet maintains the same pressure and flow rate as other jets in its class.

- 13 hp Honda® engine connected directly to a 3000 psi, 4 gpm triplex pump with Vibra-pulse® on demand.
- 300 ft. capacity hose reel with reel brake mounted on a heavy-duty frame with two pneumatic tires.



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Circle 158 on Reader Reply Card

Take Clogged Drains by Storm



J-2512
TYPHOON

General's water jetters give you the power, flow, and toughness you need.

The J-2512 Typhoon trailer jet blows away blockages in big lines and long runs. 12 gallons a minute storm down the line at a powerful 2500 psi to blast lines clear of grease, sediment and debris. A 200-gallon holding tank carries enough water to handle remote applications where access to water is limited.

The Typhoon features a 24 hp Honda engine, 400 ft. jet hose reel and 150 ft. supply hose reel mounted at the rear of the unit, and a lockable tool box with engine controls mounted inside. Standard equipment includes electric brakes, safety strobe light, rear fold-down stabilizer jacks, retractable hose guide arm, and antifreeze system.



With its 3000 psi, 5.5 gpm pump, the J-3055 has the thrust to pull the hose down long runs, the pressure to cut through tough grease deposits and the flow to flush them away. In fact, the J-3055 has the highest flow rate available without requiring a holding tank.



The J-2900 is light, maneuverable, and delivers a strong performance at a very reasonable price. This compact, rugged unit delivers 3000 psi at 4 gpm. All General's jets have Vibra-pulse® on-demand to help slide the nozzle around tight bends and propel the hose down longer lines.

J-2900



For more information on all of our water jets, visit www.drainbrain.com or call us at 800-245-6200 or 412-771-6300.

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Circle 82 on Reader Reply Card

ProPress technology helps restore Idaho Capitol

The Idaho State Capitol has kept watch over the citizens of Boise for more than 85 years, a symbol of justice and democracy rising 208 feet into the sky. Completed in the 1920s, 70 years passed before this beautiful facility began to experience the effects of time. Governor Phil Batt appointed the Idaho Capitol Com-

mission in 1998 "to restore and preserve the Capitol to its original splendor." The commission selected RM Mechanical to renovate the HVAC and plumbing portions of the Capitol.

Desiring to maintain the reputation of quality and integrity they had established among the citizens of Idaho, RM Mechanical chose to in-

stall ½" to 4" Viega ProPress® fittings exclusively to replace all the heating and cooling components inside the Capitol. With flameless installation, ProPress allowed RM Mechanical to work in tight spaces without jeopardizing the historic structure in any way. Bill Harrison, senior project manager for RM Mechanical, was hesitant to use the ProPress system. "I am old school," he said. "I always had the belief that sweat and soldered connections were the most reliable. Using Viega's ProPress System on the Capitol project changed my mind."

RM Mechanical chose to use ProPress not only to safeguard the long history of the Idaho State Capitol but also because of their strong relationship with their purchasing agent, Consolidated Supply. Harrison knew he and his team needed a quality product with reliable functionality that they could install while safe-

guarding the historical value of the Capitol; Consolidated Supply had the answer for RM Mechanical's needs. "They highly recommended Viega's ProPress System," Harrison said, "and we knew there wouldn't be stocking problems. ProPress is a quality product and a time-and-labor saver. We have had good success with it."

One major philosophy drives the employees of RM Mechanical: Missing a client's schedule is not an option. Construction on the Idaho State Capitol finished ahead of schedule and under budget. The House and Senate of Idaho met in the new statehouse on January 1, 2010, and work on the Capitol concluded officially with a grand rededication ceremony that was open to the public on January 9, 2010. Viega is pleased to have been a part of preserving this historic landmark for future generations. ■

Driving sales through engineer guide specifications

BY ROBERT HALL

A specification is essentially a detailed guideline, statement or enumeration of particulars for a product dimension, type of material or the specifics of a building. A building design generally begins with an architect who has either been tasked with providing a concept or who has been given a building concept by a property owner. Once the basic architectural design is complete, the other systems, such as electrical, plumbing and mechanical, are designed to fit within the confines of the architectural design. If the architectural firm does not have multi-disciplined engineers on staff who can design the building systems, the work is subcontracted to electrical, mechanical or plumbing engineering firms to design the particular systems within the building.

Specifying architects and engineers provide contractors with a guide specification which serves as a guideline for how the building should be built and what products should be installed. Engineering firms either purchase a set of guide specifications from a specification writing company or develop their own. The product selection process is based on conformance to industry-recognized performance and material standards, as well as local and state code approvals. Material and performance standard references, as well as local and state codes, substantiate industry product approvals for use in designated applications.

Most manufacturers try to design their products with unique qualities to distinguish them from their competition. When a manufacturer achieves this distinction, their product is considered proprietary. Unfortunately, the proprietary distinction does not always mean the designing company will be the only product listed in a specification. Many engineers are required to list at least three products in their guide specifications for a particular application to ensure availability and competitive pricing.

In a specification-driven industry, salespeople should recognize that an engineer is not looking to buy anything but he or she can be the single largest factor in our success.

Robert Hall is a national technical consultant for Viega.



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Mountain school gets 'hydronic rescue' via Laars boiler donation

(Continued from page 110.)
a \$1.2 million bond issue later that year.

The project — which began with the hydronic heating system overhaul for the gymnasium, and later this year for the entire school — addresses more than just the need for heat. There were 110 deficiencies, ranging from asbestos insulation to a front entrance that can't be monitored visually by school personnel. The electrical system is overloaded, the windows need to be replaced, and there's no elevator for handicapped teachers and students.

The upgrades also will allow the school to become a community cen-

ter of sorts. Though the school's gym is already the community's main recreation space, a new lunchroom/kitchen will be used for commercial purposes after school hours. The art room could be the site for adult pottery or painting classes.

Resilience and moon boots

"These are tough mountain kids," said Silverton parent Elyse Salazar whose two children attend the school. Her solution for the past couple of years was a simple one. After breakfast, it's time to bundle-up her brood: extra layers of clothes, down jackets, snow pants and "moon boots."

"I've never seen anything like it," said Noonan. "We live in Montrose, Colo., about 50 miles away. And I can say from experience that these families have endured real winter hardships."

Warms the heart: Hydronics & geo to the rescue

According to Noonan, the 1 million BTU MagnaTherm was installed a few days before Christmas, with additional work needed to run copper lines to several fan coil units in the 10,000 sq.ft. gymnasium with a 30-foot ceiling height. "The first

order of business was to heat the gym," said Noonan.

By early January 2010, students, teachers and visitors still wore additional clothes to the gym out of habit, even though temps inside were easily held at 66°. "It was really hard to get used to at first," said teacher Sue Morris. "For the first time in years, a twist of the thermostat was all it took to have more heat."

By mid-January, Noonan's crews were finished, save only for the installation of special diagnostic and monitoring gear that Laars engineers installed to more closely watch high altitude operation.

To get the job done, Marty Franz, jobsite foreman; Pete Cassidy, lead technician; and Noonan were on the job on and off for a few weeks with apprentices Matt Smith, Wes Grubbs, and Jeremy Wheatcroft.

"Even at the coldest ambient temperatures, the boiler was operating at about 200,000 BTUs," said Noonan. "The plan will be for the boiler to stay its course as the main source of heat for the gym, but for it to provide high-temp back-up heat for the breezeway and school when the school district hopes for geothermal systems to be installed as the primary source of heat later this year." ■



Pat Noonan, VP and part owner of Par Mechanical, Montrose, Colo., installs diagnostic instrumentation specified by Laars to monitor the boiler's high altitude operation.

Ellen

(Continued from page 30.)
better off, no one worse off. Nice. Assume the mantle of a servant leader.

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Xo\$, Ellen

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Holohan

(Continued from page 22.)

point of no pressure change with lots of pumps in series. The combined pump differential pressure is greater than the system's static fill pressure. That's why the vent is sucking. The air is probably eating this boiler. The air separator is trying its best to get rid of the air that the vent is sucking in," I said. "Sucking and blowing."

"I hate that thing," Smokey said.

"Under the circumstances," I said, "I think you should be thanking it."

"I hate it. You're not going to help me get even by writing about this, are you?" Smokey snarled.

"I will when it's time," I said.

"When's that?"

"When you graduate," I said. And now it's time. ■

Lochinvar® University course approved for NATE training

LEBANON, TENN. — Lochinvar Corporation has announced that its KNIGHT Service School, part of the annual Lochinvar University program, has been approved for North American Technician Excellence, Inc. (NATE) training.

As the leading non-profit testing organization for HVACR professions, NATE offers candidates installation and service certification programs in a wide range of industry categories. Lochinvar's KNIGHT Service School, which instructs technicians on the installation, operation and service of KNIGHT Wall Mount and Floor Standing Heating Boilers, is now included among the NATE-recognized continuing education programs.

Industry professionals who attend the KNIGHT Service School, which is offered multiple times throughout the year at Lochinvar's state-of-the-art training facility in Lebanon, Tenn., receive in-depth information about the design and construction of the

KNIGHT Heating Boilers, installation requirements, sequence of operation and troubleshooting procedures, as well as hands-on training focused on the firing and assembly/disassembly of boil-



ers. Participants also have the opportunity to tour Lochinvar's Manufacturing and Engineering Facilities. Completion of the KNIGHT Service School counts towards continuing education hours for NATE-certified technicians, many of whom use their certification to showcase their expertise to benefit their business and their company's bottom line.

Copper air lines handle the pressure

NEW YORK — Since 1996, certified rebuild shop S&G Motor Repair in Blackfoot, Idaho, has seen plastic come and go in their shop. Owner Paul Yancey installed Schedule 80 PVC pipe for his compressed air system that operates all of their major equipment in the plant.

The original plastic system failed after four years in service. "It would literally explode," Yancey explained. Another plastic pipe system that was rated for compressed air systems failed after five years because it wasn't compatible with certain oils. Yancey decided it was time to move

on to something else.

After looking at carbon steel pipe and an extruded aluminum system, Yancey chose Mueller Industries' StreamTECH copper system, which uses a solderless or "flameless" connection system based on a high-tech structural adhesive and can be installed by personnel in-house. S&G employees completed the system in a week and a half.

"We look forward to having the copper system last a long, long time," Yancey said. "Aside from the fast installation and reliable performance, it also looks great."

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Take care of customers and they'll take care of you

BY JOHN MEENBRINK,
editor

While watching the movie, "Up in the Air," starring George Clooney, I couldn't help but feel bombarded with product placements throughout the picture. It was hard not to notice companies such as American Airlines and Hilton Hotels place brand everywhere. But beyond the logos, the vans, the signs, the bathrobes, the billboards, etc., the idea of how these companies treat their customers for loyalty rang true to me. Ahh, the perks of frequent flying — front-of-the line & lounge access, free weekend getaways and vacations. And to reach a hotel's premier status, with reduced rates, extended stays, upgraded rooms and suites are all part of a customer loyalty program.

Remaining true to a company can have its rewards. And likewise, those companies should treat their loyal customers like gold. Perks and upgrades are always nice, that is until another competitor comes and offers something a little more tempting. In addition to upgrades, if companies reach out to clients on a personal level and create an unbreakable bond — now you've got something!

You see, recently I was invited to the 2010 Up-

onor Convention and Radiant Cooling Engineering Summit in Las Vegas — at the Bellagio Hotel, no less! No expense was spared as the convention hosted nearly 700 of Uponor's loyal suppliers, contractors and designers. Those in attendance were treated to interesting keynotes, informative seminars on their products, great entertainment, and, best of all, the chance to network with peers, all under the Uponor Convention umbrella. Again, this made me think about the importance of customer loyalty and giving back. Upon my return, Uponor followed up with emails and calls thanking me for my visit. "In spite of it being our largest convention with 688 attending, we heard that you appreciated the opportunity to talk with Uponor team members personally. We want to continue to strengthen our relationships and communications with each other. Thank you for joining us in Las Vegas and for your continued loyalty to Uponor. We wish you much success in 2010 and in the future."

I think all in attendance were extremely pleased with the convention and surrounding fare. And, in my book, that's how you take care of a customer.



Anders Tollsten (l), executive vice president, Uponor North America, and Steven Richman, president of Milwaukee Electric Tool Corp., join forces at the 2010 Uponor convention in Las Vegas. At the show, Uponor and Milwaukee Tools announced that they have aligned to develop M12™ and M18™ ProPEX® Tubing Expansion Tools.

NEXT ISSUE...

- Piping Report
- Roof drainage
- ADA-compliant products

ADVERTISERS' INDEX

1-800 Plumber.....46-47
www.1800plumber.com
AERCO.....56-57, 97
www.aerco.com
A.O. Smith/State.....87
www.aosmith.com
American Hometec.....14-15
www.americanhometec.com
Bare Bones Biz.....108
www.barebonesbiz.com
Bell & Gossett.....7, 99
www.bellgossett.com
Bradford White.....52-53
www.bradfordwhite.com
BrassCraft.....45, 107
www.brasscraft.com
Burnham Hydronics.....IFC, 113
www.burnham.com
Caroma.....71
www.caromausa.com
Charlotte Pipe.....49, Back Cover
www.charlottepipe.com
Chicago Faucets.....67
www.chicagofaucets.com
Dunkirk.....23, 109
www.dunkirk.com

Energy Kinetics.....62
www.energykinetics.com
Eternal Hybrid Water Heater.....72-73
www.ternalwaterheater.com
G.O.N., LLC.....85
g-o-n-.net
General Pipe Cleaners,
a div. of General
Wire Spring.....33, 116, 125
www.drainbrain.com
Hansgrohe.....11, 17
www.hansgrohe-usa.com
Heat-Flo Products.....91
www.heat-flo.com
Heat Transfer Products.....69
www.htproducts.com
Heatinghelp.com.....112
www.heatinghelp.com
InSinkErator.....18, 19
www.insinkerator.com
John Guest USA.....94
www.johnguest.com
Kissler.....31, 105
www.kissler.com
Liberty Pumps.....55, 127
www.libertypumps.com

Link-tech.....10
www.linktechj.com
Little Giant Pumps.....25, 117
www.lgpc.com
Lochinvar.....42
www.lochinvar.com
NAOHSMS.....104
www.NAOHSM.org
Navien America.....65, 83
www.navienamerica.com
Nexus Valve.....39
www.nexusvalve.com
Precision Plumbing Products.....77
www.pppinc.net
Red White Valve.....100-101
www.redwhitevalveusa.com
RIDGID.....75
www.ridgid.com
Rovanco.....37
www.rovanco.com
Slant/Fin.....28-29
www.slantfin.com
Smith, Mfg Co.Jay R.....3
www.jrsmith.com
Spirotherm.....21, 93
www.spirotherm.com
Stiebel Eltron.....79
www.stiebel-eltron-usa.com
Symmons.....13, 63
www.symmons.com
Taco.....81
www.taco-hvac.com
The Noble Company.....26
www.noblecompany.com
Triangle Tube.....103, IBC
www.triangletube.com
Uponor.....58-59, 61
www.uponor-usa.com
Viega.....34-35
www.viega.com
Ward Manufacturing.....27, 95
www.wardmfg.com
Watts.....51, 111
www.watts.com
Webstone.....4, 5, 115
www.webstonevalves.com
Weil-McLain.....9, 121
www.weil-mcclain.com
Weldbend.....40-41
www.weldbend.com
Whitlam, JC Mfg.....98
www.jcwhitlam.com
Woodford.....43, 119
www.woodfordmfg.com

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