

A TMB Publication

# Phc News

plumbing & hydronic contractor news



## Top 20 Under 20

**Frank & Lindy Plumbing  
& Heating Service Co.  
nabs top spot as  
Phc News features the  
Top 20 plumbing and  
hydronic companies  
under 20 employees.**



**Dan  
Holohan  
on boilers**



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gets  
hydronic  
facelift**

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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 it's 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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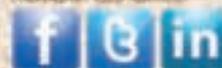


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## On the Cover

Mark Giardina is field supervisor for Frank & Lindy Plumbing & Heating Service Co., No. 1 on Phc News' 2010 Top 20 Under 20 listing. In this issue we extend kudos to those contractors employing fewer than 20; their efficiency and ingenuity are a hallmark of their business smarts. Section begins on page 40.

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We polled hundreds of contractors to determine their patterns of Internet activities. A surprise result is they have discovered how to use social networking media to enhance their businesses.

### 48 Focus on water conservation

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# Phc News

plumbing & hydronic contractor news

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www.phcnews.com

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## A. O. Smith enters into a tankless water heater joint venture with Takagi

MILWAUKEE — A. O. Smith Corporation and Takagi Industrial Co. Ltd. of Fuji-city, Shizuoka, Japan, announced that they are establishing a joint venture to market and manufacture tankless water heaters in



North America. As part of the joint venture, A. O. Smith will take over the management of Takagi's existing North American sales and distribution organization, maintaining Takagi's North American headquarters in Irvine, Calif. The companies expect the transaction to close in the third quarter.

"This venture is an important in-

vestment by A. O. Smith that will further expand our offering of high-efficiency water heating products," said Ajita G. Rajendra, president of A. O. Smith Water Products Company. "It represents a rare opportunity to combine Takagi's well-known brand and world-class tankless technology with the strong brands, customer relationships, and extensive distribution of A. O. Smith."

Through the joint venture, A. O. Smith will offer a full line of tankless gas water heaters under its own brands in association with the Takagi brand and will assume responsibility for the Takagi brand in the U.S. and Canada.

Takagi currently manufactures a full line of gas tankless water heater

models in Japan for residential and commercial applications including the recently released "second generation" 92 percent efficient T-H2 model designed for residential or light commercial applications.

For more information, visit [www.aosmith.com](http://www.aosmith.com).

### Sponsored player wins Nationwide event

Former A. O. Smith employee and current sponsored player, Tommy



"Two Gloves" Gainey, won the Melwood Prince George's County Open, his first career title on the Nationwide Tour.

Gainey secured the title with a 72nd hole birdie and final-round, 6-under 65 at the University of Maryland Golf Course in College Park.

## Bemis® Toilet Seats Joins Fourth of July Redneck Games

SHEBOYGAN FALLS, WIS. — Bemis Manufacturing Company, a leader in toilet seat engineering and design, is proud — and a little surprised — to find itself participating in the Redneck Games at the Independence Day festival of Cape Girardeau, Mo.

Looking for ways to stir up some fun and some funds at the festival, which ran July 2-4, U.S.A. Veterans Commander Rodger Brown approached Bemis Manufacturing with a request for donated seats for use in a newly created game — the toilet seat toss.

Bob Davis, Bemis director of marketing — Plumbing North America, responded by sending a dozen lidless open-front toilet seats to be used in the games. Bemis also donated some high-end showroom seats to be used as prizes.

"This event is tied to supporting our veterans, so it's a worthy cause," said Davis, who added that it was the first time he received a request for seats to be used in a toilet seat toss. "We got quite a kick out of the concept," he said.

## In brief

### Eemax, Inc. joins HomeSphere®

OXFORD, CONN. — Eemax, Inc., a leader in commercial and residential electric tankless water heaters, and HomeSphere, Inc., the premier provider of technology-leveraged supply chain services to the homebuilding and remodeling industry, announced that they have entered into a joint agreement to offer Eemax products to HomeSphere's network of builders, using HomeSphere's technology-leveraged services.

"Teaming up with HomeSphere provides a powerful way for our company to further extend our national manufacturing and distribution network," said Aaron Siegel, vice president of sales at Eemax. "This partnership grows market share among our potential customers, allows builders to leverage their purchases, and creates demand that is beneficial to us as a manufacturer."

For info, [www.eemax.com](http://www.eemax.com).

### Rinnai extends warranty

PEACHTREE CITY, GA. — Rinnai Corp. has extended the heat exchanger warranty on RC98HPE, RC98HPi, RC80HPE and RC80HPi condensing tankless water heaters used in recirculating applications from three years to 12 years. The new warranty pertains to recirculating systems that are controlled through an aquastat/ thermostat, a timer or an on-demand system. The change means that Rinnai® brand condensing tankless products used in qualified recirculating systems will now feature the same 12-year heat exchanger warranty as all residential installations.

For more info, [www.rinnai.us](http://www.rinnai.us).

### Viking announces national partnership with Toll Brothers

HASTINGS, MICH. — Viking Group, a global leader in fire protection and life safety systems, announced that Toll Brothers has selected Viking as its partner to provide fire suppression materials throughout the United States. The new agreement, which is effective immediately, includes Viking sprinklers, CPVC pipe, and related products for residential fire sprinkler systems. With this new partnership, Viking SupplyNet will supply Toll Brothers' network of preferred installers with fire protection products from the company's integrated distribution network, which includes more than 30 U.S. locations.

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## Lochinvar honors top VIP contractors

LEBANON, TENN. — Lochinvar Corp. celebrated the success of the 12 top-selling participants in its fifth annual VIP Contractor Program by awarding them an all-expenses paid trip to Tennessee for the 2010 Nashville Experience. To show the company's appreciation for the contractors' outstanding sales, each of the winners and a guest of their choice were invited to enjoy an action-packed, three-day getaway in Lochinvar's

hometown. These 12 winning VIPs were nationwide top sellers of the following product lines: KNIGHT®, Efficiency+®, and Solution™ residential boiler product lines, the KNIGHT XL® Commercial Boiler and the Squire® Indirect Water Heater.

The winners of the 2010 Nashville Experience included the following VIP Contractors:

- Jack DeWaal of Triple H Hydronics, Inc. in Calgary, Alberta;

- Mike Helmbrecht of Timberline Mechanical in Crested Butte, Colo.;

- Larry Gemma of GEM Plumbing in Lincoln, R.I.;

- Alex LaPierre of Plomberie Normand in Montreal, Quebec;

- Erik Lindow of Journeyman Plumbing and Heating in Kenai, Alaska;

- Andy Mickelson of 4G Plumbing and Heating in Missoula, Mont.;

- Tim Sandlin of Klebs Mechanical in Anchorage, Alaska;

- Joe Pomerleau of Pomerleau's Heating in Winslow, Maine;

- Mike Bernasconi of Central Cooling & Heating in Woburn, Mass.;

- John McCain of Jack McCain Plumbing and Heating in Bay Port, Mich.;

- Alan Eldridge of A & A Mechanical in Crested Butte, Colo.; and

- Zac Roth of Klebs Mechanical in Anchorage, Alaska.



### Nexstar® Super Meeting offers success strategies

PLUMBING, HVAC AND ELECTRICAL home service contractors across the continent have the opportunity to experience the rapid results of Nexstar® Network, as the trades' leading business development organization opens the doors of its Austin, Texas Super Meeting September 23-25.

Nexstar president and CEO, Greg Niemi said, "Attendees have the potential to return to their businesses and get rapid results, guided by our experienced coaches, surefire systems and peer connections."

Economist Brian Beaulieu will release his economic forecast and unveil tactics for making sure your business thrives, not simply survives what lies ahead in 2011 and beyond.

CNN news anchor Natalie Allen will host a live news program and take you inside three notable U.S. plumbing, HVAC and electrical businesses that are productive and profitable. For info, [www.nexstarnetwork.com](http://www.nexstarnetwork.com).

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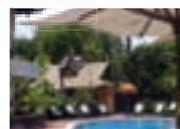
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## Grand Hall teams with Reno Power to sponsor racer

GARLAND, TEX. — Grand Hall, manufacturer of the Eternal Hybrid Water Heaters, has teamed up with Reno Power, located in Tampa, Fla., to sponsor Justin Larson Racing as he speeds off in pursuit of victory in the Super Late Model races, as well as the Hoosier Elite series at Desoto

Super Speedway.

The #88 Reno Power/Eternal Hybrid Chevrolet, driven by Justin Larson, will be racing across Florida in the Super Late Model series this summer. On July the 1 NASCAR weekend, Larson returned to the New Smyrna Speedway as part of the

FAST Touring Series, and Eternal representatives.

Reno Power provides repair service for all tankless water heaters, but prefers installing Eternal Hybrid Water Heaters. The latest Eternal Condensing Hybrid is a smaller unit, 98+ percent efficient and every bit

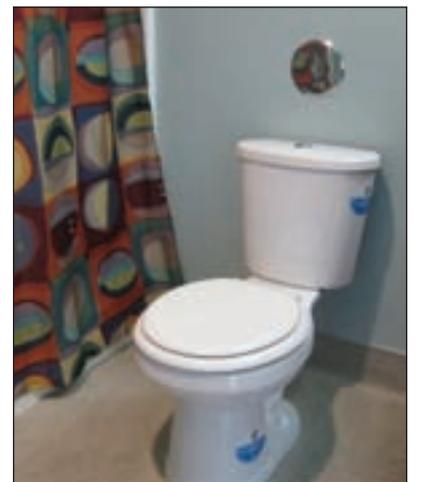


just as powerful as the original. Eternal is economical to own costing very little to run and maintain but provides endless hot water with no performance sacrifices with a 20-year no leak warranty.

## Gerber and Green-Plumbers build sustainable Ronald McDonald home

TUCSON, ARIZ. — The Ronald McDonald House in Tucson, Ariz. is dedicated to improving the health and well-being of children within the community; however, the organization's newest home had a recurring problem — broken toilets. To ensure the families could focus on their children instead of their bathrooms, Gerber Plumbing Fixtures LLC and the Arizona GreenPlumbers joined together to retrofit the home with quality, water-conserving plumbing products resulting in a WaterSmart Business designation and peace of mind.

With capacity for 28 families in the newly established house, the originally installed plumbing prod-



ucts were not meeting the needs of the residents. Instead of simply replacing the poor performing fixtures with standard products, Green-Plumbers appointed Gerber to retrofit the new home with WaterSense certified toilets and faucets, including Maxwell® Dual Flush toilets, Allerton™ kitchen faucets and Wicker Park™ bathroom faucets. Moreover, due to the 20 percent water-savings associated with the newly replaced plumbing fixtures, the City of Tucson declared the Ronald McDonald House a WaterSmart Business.

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## PHCC names new benefactor donors of the Educational Foundation Board of Governors

DAVID DUGGER, PRESIDENT AND CEO of ShoffnerKalthoff Mechanical Electrical Service of Knoxville, Tenn., and his wife, Jan, have been named as Benefactors to the Plumbing-Heating-Cooling Contractors — National Association's (PHCC) Educational Foundation Board of Governors.

"We are delighted to welcome David and Jan Dugger as Benefactor donors," said Cindy Sheridan, chief operating officer of the PHCC Educational Foundation. "Their contribution will go far in helping us continue to provide outstanding educational programs for p-h-c contractors and their employees."

A member of the PHCC — National Association Board of Directors, David Dugger is a strong supporter of the p-h-c industry, serving as state president and board member of the PHCC in Tennessee and other national and local committees.

Dugger started his mechanical construction career in 1971 as a sheet metal and piping ap-

prentice while studying mechanical engineering at the University of Tennessee. His career has included numerous management positions, as well as project management and estimating. He has been involved with a variety of projects in terms of both size and complexity, ranging from healthcare, manufacturing facilities, institutional, commercial office and mixed-use buildings. He holds licenses in more than 12 states and has extensive experience in mechanical design/build construction.

Headquartered in Knoxville, Tenn., and in business for more than 50 years, ShoffnerKalthoff Mechanical Electrical Service provides new and post-construction services including HVAC, plumbing, electrical, process piping, industrial ventilation, millwright, boiler repair, sheet metal fabrication, design/build, and complete service and maintenance for HVAC, plumbing, electrical, refrigeration, and DDC controls.

## John Guest donates to Minnesota Habitat for Humanity

FAIRFIELD, N.J. — A freshly rehabbed home that was donated to Twin Cities Habitat for Humanity



in Minnesota has been plumbed using Speedfit® fittings and PEX piping donated by its manufacturer, John Guest® USA. The three-bedroom, two-story home, which was removed from its base and moved to a new property across town, is located in Prior Lake, south of the Twin Cities.

Donation of the Speedfit fittings and

PEX was coordinated by John Guest's Regional Sales Manager for the Midwest, Jeff Nehring. Nehring approached the plumbing contractor on the job, Infinity Plumbing Inc. of Dennison, MN, to use Speedfit product to connect the existing copper pipe to the new plumbing system, which was accepted. Infinity owner Bob Berge, who had used Speedfit before but not in a whole-house application, reports that Speedfit was easy to install and reduced his crew's time on the job considerably. "It worked well and it went so fast," he says, echoing what other plumbers are discovering about Speedfit, a relatively new product introduction into the North American plumbing and heating market. "It's a very good product and I can see it catching on," he commented.

## Grundfos recognized by Kansas School for the Deaf

OLATHE, KAN. — Grundfos Pumps was recognized by the Kansas School for the Deaf (KSD) for the school year of 2009 – 2010. The recognition was for Grundfos Pumps continued involvement in the Career Training program offered to the students through the KSD.

Beginning in 2003, Grundfos in cooperation with the Kansas School for the Deaf has mentored six students in the Career Training program, two of which became KSD valedictorians. The Career Training program allows students who wish to pursue a certain field of interest an early start to their chosen career. The students have worked in

a variety of roles at Grundfos including finance, human resources, and partner services.

### Grundfos raises \$55,000 at golf event

Sunny skies and near 90-degree temperatures greeted a group of more than (200) employees, customers, suppliers, friends and family of Indianapolis-based Peerless Pump Company (Peerless was acquired by Grundfos in 2007), as they descended upon Ironwood Golf Course in Fishers, Indiana, for their 11th annual Camp Riley Golf Outing.

For more info, [www.grundfos.com](http://www.grundfos.com).

## Jomar Group launches new website

WARREN, MICH. — The Jomar Group has launched a new website aimed at promoting unity across Jomar Group's three divisions of Jomar Valve, HCl, and Evosolar. The Jomar Group has a diverse collection of products and the new site will provide a window into each.

"We decided to consolidate our business prac-

tices and needed a way to present our product family in full and in one place," said Paul Craig, president of the Jomar Group. [Jomar.com](http://Jomar.com), which was once the domain for the line of ball valves now resides at [jomarvalve.com](http://jomarvalve.com) and [jomar.com](http://jomar.com) now provides the domain for the Jomar Group.



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## B&G offers hydronic balancing solutions bulletin

MORTON GROVE, ILL. — ITT has published a new bulletin that provides a comprehensive summary of its Bell & Gossett brand solutions for hydronic balancing. Included in the bulletin is a Balancing System Selection Guide, which allows users to identify the valves most suitable for

their specific projects from manual valves to field adjustable, automatic temperature control valves.

The new bulletin (A-509) also helps users select the most efficient balancing solutions for reducing energy and operating costs while increasing comfort. The six categories

of balancing valves covered in the bulletin include:

- OPTIFLO™ (PICV) — field adjustable control valve
- ULTRASET — externally field adjustable automatic valve
- CIRCUIT SENTRY — automatically maintains set flow rate

• CIRCUIT SENTRY LOW FLOW — internally field adjustable automatic

- CIRCUIT SETTER PLUS — externally field adjustable manual
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Also included in the bulletin is detailed information on Bell & Gossett Coil Kits, including:

- Coil Supply Line Options
- Union ended ball valve/Y-strainer UBY & UBL)
- Union ended ball valve (UBV)
- Coil Return Line Options
- Union Accessory (Model UA)
- Temperature Control Valves
- Bypass Control Valve Options
- Hose Kit Assemblies

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Circle 11 on Reader Reply Card

## Roth offers solar training

SYRACUSE, N.Y. — Roth Industries is offering free training and certification for its solar products at its Syracuse facility.

When: Tuesday, August 17, 2010, 9 a.m.– 2 p.m.

Roth radiant: Wednesday, August 18, 2010, 9 a.m.– 2 p.m.

The seminar is free of charge. Lunch and refreshments provided.

Contact Katrin at [KatrinT@roth-usa.com](mailto:KatrinT@roth-usa.com) or call 401-562-0325 to check availability.

## Knaack LLC launches online dealer locator

CRYSTAL LAKE, ILL. — Knaack LLC announced the launch of its new online dealer locator to make web searches simpler for prospective end users.

A dealer locator is a tool that allows website visitors to search for the nearest jobsite, truck and van equipment dealers based on a zip/postal code and radius search.

The new dealer locator uses Google Maps 3.0 as its platform. This technology will allow customers to



find the store closest to them in the shortest amount of time. In addition, through easy-to-use icons, the new dealer locator also will direct prospective buyers to the most relevant dealers to fill their needs. For info, [www.knaack.com](http://www.knaack.com).

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Professional Tools

## Acorn Engineering & Jay R. Smith announce affiliation and unification

CITY OF INDUSTRY, CALIF. & MONTGOMERY, ALA. — Acorn Engineering Company and Smith Industries Inc announced a new business alliance and a jointly owned company. Effec-



Jay L. Smith and Don Morris

tive June 15, 2010, Jay R. Smith Mfg. Co., a Division of Smith Industries will join the Acorn Engineering family of companies, and Acorn Engineering will be a 50 percent owner of Smith Industries. The name of the company will remain Jay R. Smith

Mfg. Co., a Division of Smith Industries, Inc.

Jay R. Smith (Smith Industries) and Earl L. Morris (Elmco Sales Inc. and Acorn Engineering) were both modern-day pioneers in the industry and founders of their individual companies. They each developed strong companies and were partners and friends from 1954 (when Elmco became a Jay R. Smith Mfg. Co. representative) until they passed away. The instant relationship and personal bond transcends three generations and continues with the Smith and Morris families.

Jay L. Smith, Don Morris, and Don's brother, Dennis Morris, second generation sons of Jay R. and Earl, have continued their business and personal relationships for more than 50 years. The next generation of Smith's and Morris' (Jay L.

Smith's daughters, Dr. Holly L. Roth and Debbie Smith, and Don Morris' children, Kristin Kahle, Randall Morris and Barrett Morris) pledge to continue what their grandfathers



started. The Smith and Morris families will be represented on the new Board of Directors.

The new alliance of Acorn Engineering and Smith Industries will be the foundation for an exceptionally strong company and will be competitively anchored in the industry. For

the realigned Smith Industries, Don Morris will assume the role of chief executive officer (CEO) of Smith Industries, Jay R. Smith Mfg. Co. Division and the Canadian subsidiary. Jay L. will continue as president and chairman of the Board of Directors. The management teams of both Acorn Engineering and Jay R. Smith Mfg. Co. will remain the same.

## LENOX Institute of Technology now open

EAST LONGMEADOW, MASS. — LENOX®, a leading manufacturer of premium power tool accessories, hand tools, torches, solder and band saw blades, has opened its new LENOX Institute of Technology (LIT), located within the company headquarters in East Longmeadow. The grand opening ribbon cutting took place on June 7.

The 1,500-square-ft. LIT training center is designed to provide hands-on training with LENOX tools and the materials that users encounter in the field. The facility includes a large



training room, conference room, café and e-lounge. The LENOX run training programs will be available for domestic and global distributors, sales, and technical teams.

## PHCC announces SkillsUSA competition plumbing winners

KANSAS CITY, MO. — Six plumbing students got top prizes in the plumbing competition of the annual Skill-USA National Leadership and Skills Contest.

This year's honors went to:

- 1st Place Secondary — Ryan Spinden, Paul M. Hodgson Vo-Tech, Newark, Del.
- 1st Place Postsecondary — Alex Swanson, Minuteman Regional High School, Lexington, Mass.
- 2nd Place Secondary — Richard Carlo, Virginia Beach Technical and Career Center, Virginia Beach, Va.
- 2nd Place Postsecondary — Joel Jackson, Salt Lake Community College, Salt Lake City, Utah
- 3rd Place Secondary — Steven Oliveira, Emmett O'Brien Technical High School, Ansonia, Conn.
- 3rd Place Postsecondary — Milorad Pudja, Sarasota County Technical Institute, Sarasota, Fla.

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



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## IAPMO says "NO" to water-powered sump pumps

Code in the just-released Green Plumbing and Mechanical Code Supplement bans these water wasters.

Visit [www.SaveOurWaterToday.org](http://www.SaveOurWaterToday.org) to learn more

**412.0 Water-Powered Sump Pumps.** Sump pumps powered by potable or reclaimed (recycled) water pressure are not permitted.

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## INDUSTRY MOVERS

### LENOX® announces new president

EAST LONGMEADOW, MASS. — LENOX®, a leading manufacturer of premium power tool accessories, hand tools, torches, solder and band saw blades, announces that effective immediately, Rich Wuerthele has been appointed president of Industrial Products and Services of LENOX, a Newell Rubbermaid company.



Wuerthele

### CAPHCC announces appointments, retirement

The Board of Directors of the Plumbing-Heating-Cooling Contractors of California (CAPHCC) announced the appointment of Peggy J. Hall as their interim executive vice president. Peggy is replacing Harry Moos who has retired, but has been retained as a consultant to PHCC.



Hall

The California PHCC recently elected their new officers and directors at the PHCC West annual convention in Napa, California. In addition to President Tom LeDuc, they are: Vice President: John Roeber, Roeber's, Inc., Castro Valley; Secretary/Treasurer: George Salet, George Salet Plumbing, Brisbane, and past-President Jerry Hotarek, San Francisco. Directors are: Guy Tankersley, Cal-Delta Plumbing, Sacramento; Chuck Barrett, KCs 231/2 Hour Plumbing Service, Orange; Jeff Eisen, J & J Plumbing Service, S. Pasadena; Roger Lighthart, The Lighthart Corporation, Los Angeles; and, Ed O'Connell, O'Connell Plumbing, Fairfax. The PHCC National Zone 4 Director is Steve Rivers, Rivers Plumbing, Heating & Air, Pleasanton.

### BrassCraft names national sales manager

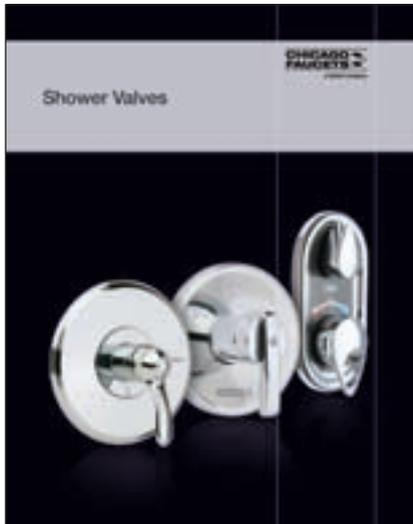
NOVI, MICH. — Michael S. Pierron has joined BrassCraft Manufacturing Company as national sales manager for Special Markets. In this position, Pierron will oversee all sales initiatives for the industrial and international markets. His special focus will be on growing BrassCraft export business in emerging markets in strategic areas.

### Sweeney Rogers Geraghty appoints business development manager

RAYNHAM, MASS. — Sweeney Rogers Geraghty announced that Jeff Woods has joined the organization in the role of business development manager for the Mestek Products Division. Jeff got his start in the industry at Sweeney Rogers Corporation in 2000.



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### Chicago Faucets & The Buy American Act

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# Hydronic Heating Sleuth's Challenge

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](http://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**

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](http://www.Lochinvar.com) and find the solution.

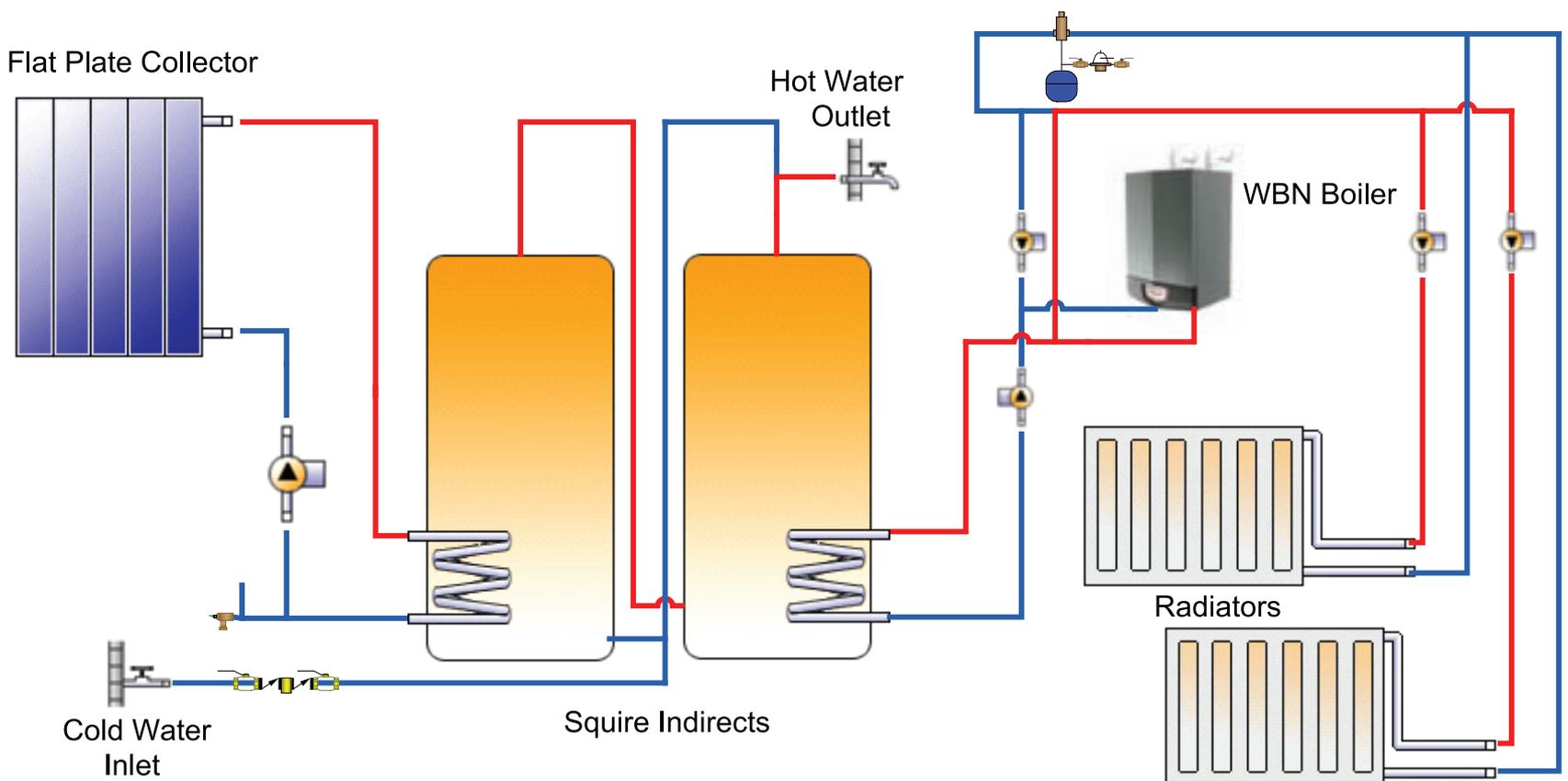


## Symptoms

1. Fluctuating temp on domestic
2. Relief valve weeping on solar loop
3. Noisy pump operation on solar loop

## HINTS:

- Age old problems associated with closed loop systems



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

**ANSWER:**

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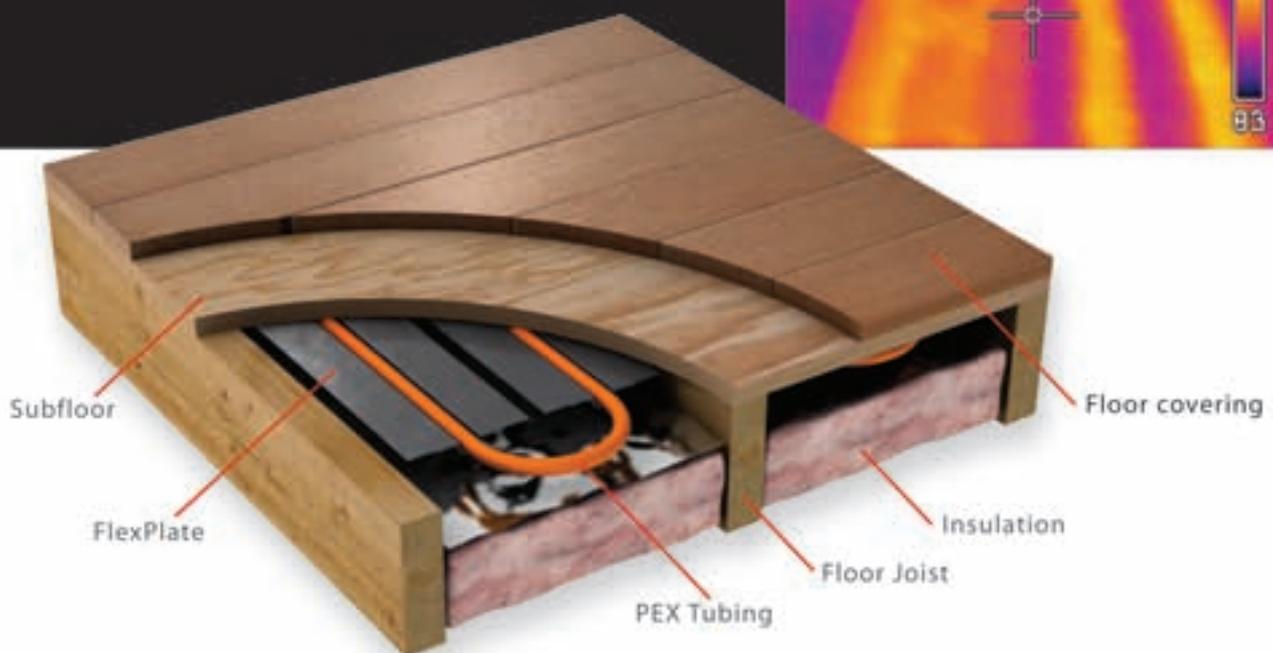
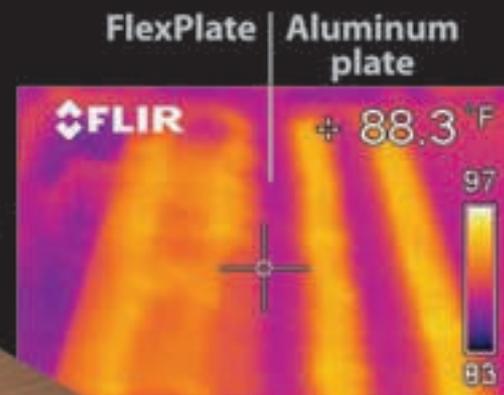


# Get even.

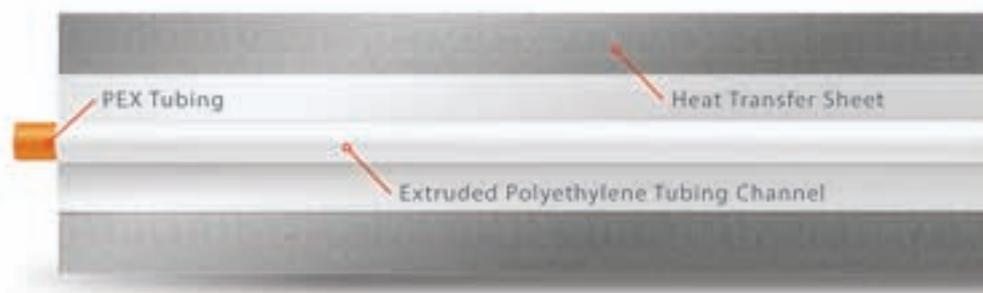
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BY DAN HOLOHAN  
guest writer

## When boilers suck

I heard from an old friend the other day. This guy works in Brooklyn, NY, and usually on some very interesting stuff. He's not one to say fuggedaboutit when there's a problem on a job. Here's what he wrote.

"Dan, I just finished installing a new Weil-McLain LGB-4 gas-fired boiler. This boiler is providing steam for a steam kettle in a commercial kitchen in a school. We installed main vents, a bucket trap for the main return line, and a Float & Thermostatic trap for the kettle. We also installed a condensate-receiving tank since we don't have enough height for the condensate to return to the boiler by gravity alone. We have a solenoid valve on the tank for feed water, as well as a tank overflow line to a drain, and a vent line so that the air can leave the kettle and vent from the tank.

"Today was the first time that we fired the boiler, and it went just as we had planned. After we cycled the boiler a few times, though, we shut down the system and watched as something very interesting happened. After the boiler started to cool down, water started to enter into the boiler, even though the feeder on the boiler was satisfied and the water was at the proper level. It just kept rising. And by the way, we have a spring-loaded check valve between the condensate pump and the boiler."

I was in my car in the parking lot of an open-air shopping mall when I got his e-mail. It was pouring rain and I was waiting for The Lovely Marianne to finish shopping, which is sort of like doing time in a Super Max penitentiary.

My buddy had sent a lot of photos attached to his e-mail, and my phone was taking its sweet time downloading them because of me being in the penitentiary and all, so I just called him. Sometimes it's quicker to be old-fashioned, and besides, I didn't need the photos to know what was wrong with this one.

He told me how he and his helper watched the water fly up the boiler's gauge glass. "It was like it was being sucked right in," he said.

"It was," I said.

"What do you mean?"

"The boiler was sucking it in," I said. "Well, actually, the atmosphere was pushing it in, but you get the picture. There was a vacuum inside the boiler. It happens a lot with this sort of installation."

We talked about it and I got him thinking like steam, which always makes this stuff easier to understand. You just have to pretend you're the steam and then think about what you would do inside that system.

For instance, you begin as water in the boiler. The fire comes on and you get hot. When the flame adds enough sensible and latent heat to you, you decide it's time to change state from a liquid to a gas, and at that point, you go off like microwave popcorn. In fact, you go off even better than popcorn. You expand 1,700 times, shoving all the air that's around you toward the steam kettle. The air passes through the kettle, enters the kettle's steam trap, sails right through that trap and leaves the system through the vent on the condensate receiver.

As steam, you're now in the kettle. You can't get out of the kettle because of that steam trap (steam traps trap steam). So you give up your latent heat to the soup in the big kettle, which causes it to boil, and then you start shrinking back into liquid water. And as you do this, it would be wonderful if the air could work its way back into the kettle to fill the empty space you're leaving behind as you condense, but that steam trap is still closed. So what

gets left behind in the kettle, and in the boiler (all the way back to the boiler waterline) is a vacuum.

With me so far? Good. Now think of the waterline in the boiler. It has a pressure above it that's lower than the pressure of the atmosphere. The water in the condensate receiver, which vents to the atmosphere, has atmospheric pressure sitting on top of it. In Brooklyn, this happens to be 14.7 pounds per square inch.

Okay, we have two containers of water (the boiler and the condensate receiver), and they're connected with a pipe. One container is under a pressure that's higher than the pressure that sits atop the other container. Separating these two containers of water is that pipe, and in that pipe there's a spring-loaded check valve. This is facing in the direction of the container that contains the low pressure.

You ever put air in your car's tires? High pressure goes to low pressure, right? You bet it does. Always. So the water inside the condensate receiver is going to flow into the boiler and flood it. From the outside, it looks like something is wrong with the automatic water feeder, but that device is innocent, so don't curse it and don't replace it; it's not at fault.

"You need to add a vacuum breaker to the boiler," I told my friend. "Put it anywhere above the boiler waterline and you'll be fine."

"Simple as that?" he said.

"Yep, and then you can fuggedaboutit," I said.

Simple, right? Here's the other place where this can happen, and this is a bit more complicated.

Nowadays, when you replace a steam boiler that serves a big building you'll often find a vacuum pump on the return piping. Engineers specified those pumps because those pumps increased the differential pressure between the steam-supply pipes and the condensate-return pipes. That allowed the engineer to downsize every pipe, valve, and fitting in the building, which cut costs on the installation, but which also means that once it's a vacuum system, it's always a vacuum system.

When you change the boiler, you're probably going to be installing a replacement that doesn't contain nearly as much water as the old boiler held. That's just the nature of modern steam boilers. The new boiler may need a boiler-feed pump to hold the water that used to be in the old boiler, but isn't in the new one. The challenge is that the system still needs the vacuum pump because of the size of the pipes throughout the building.

So here's what you'll do. You'll install the new boiler-feed pump between the new boiler and the old vacuum pump. The vacuum pump will start with the burner and pull the air from the system. It will suck the air from the return lines, the radiators, the supply mains, and all the way back to the boiler's water line. The steam will follow, and when the condensate returns to the vacuum pump, the vacuum pump will discharge it into the new boiler-feed pump.

And that's the problem. You see the new boiler-feed pump has a vent that's open to the atmosphere. It's not part of the vacuum loop that makes up the rest of the system (boiler, to supply mains, to radiators, to return mains). As the vacuum pump sucks on the system, it's also sucking on the air from the surface of the boiler water. At that point, the atmospheric pressure inside the vented boiler-feed pump's receiver will shove the water that's in the receiver into the boiler and flood it.

You can't use a vacuum breaker this time because you

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We talked about it and I got him thinking like steam, which always makes this stuff easier to understand.

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BY BOB "HOT ROD" ROHR  
contributing writer

## AE, RE the Rx?

**H**ave you noticed the acronyms AE and RE are popping up a lot these days? You will see them used almost daily in magazines and online news and information sites. You certainly hear them used at various trade shows that cater to the plumbing, HVAC and home builder markets. Even local home and energy shows in my area revolve around AE and RE — alternative energy and renewable energy, respectively.

Many would agree that our main energy sources are:

- Coal
- Oil and Gas
- Nuclear
- Hydro-electric

With these sources, we cover our heating and electrical needs. There are a wide variety of opinions on how long we can expect those sources of energy to be available, and at what cost.

Rx originates from the Latin root "to take," as in prescription or subscription. (When I Googled it, I also learned it is derived from the astrological sign for Jupiter, and traditionally placed on a prescription to invoke a blessing for the patient's recovery.)

Is AE the prescription for our energy addiction? My definition of AE would be an energy source that is not currently in the list above. Some examples would be solar, wind, geothermal, biomass and wave-generated energy.

RE renewable energy would be a source the keeps on giving. I feel solar and wind and wave-generated energy also fit into that category. Biomass can represent renewable energy, as well, depending on how it's harvested.

As I consider the list I'm looking for energy sources that the readers of this article could get involved in and offer their customers now. I will pick two of my favorites and share some thoughts.

Being of the hydronic mindset, solar fits nicely into our skill set. Plumbers and HVAC providers and designers already have the ability to design and install thermal solar. It's pipes and fluid handling! It a boiler powered by the sun, basically. You transfer the energy from the sun via a fluid into a load or storage mechanism. With this simple-to-harvest energy source we can provide 50% of domestic hot water (DHW) for a family in most of the United States. At a reasonable and doable cost. In some cases, the energy harvested beyond what is required for a daily DHW load could be used to supplement some heating load. Or a pool or hot tub load. More and more technology and equipment is showing up on the market to help interested installers and designers get on board with solar thermal. Learn the fine points of successful, dependable, long lasting installation. Then develop a plan to market this technology to your current customer base, and to develop new buyers. There are classes available both in person and online on a daily basis to help you make the jump to this exciting field.

### Biomass fuel on the up-tech

The next technology that intrigues me is biomass. I'm talking about boilers that are powered by pellets, for example. Recently, while driving across Colorado I witnessed the enormous fuel potential. Sadly, the fuel is in the form of beetle kill pine trees. Several business entrepreneurs have already set up companies to turn this wood into pellets for a fuel source. Last year we visited a pellet mill near Utica, N.Y., as part of the Radiant Panel

Association (RPA) event. There are other pellet mills scattered throughout the country. Several in my area of the Midwest squeeze pellets from the byproducts of the hardwood industry. Others grow special quick growth grasses for pellet production. To our north, Canada is one of the world leaders in pellet production. In Sweden, biomass has just surpassed oil as a heating fuel and Sweden is on track to have 50% of its energy from renewable sources by 2020. I feel this is a fuel source that is plentiful and here to stay.

Turning the fuel into heat or hot water is the next step and the step where your expertise is required. If you burn solid fuels it needs to be done efficiently. I realize there is a movement to ban, or limit wood burning appliances that burn inefficiently and cause issues for "down winders." My experiences show that clean burning is possible with gasification boilers. These are available in solid fuel, cordwood and pellet versions. Basically a gasification process directs the exhaust into a ceramic chamber. Here the flue

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**But I do believe we could do more to embrace energy sources that are home grown or falling from the sky, and splashing on our shores — as in waves, not spilled oil.**

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**It is important to know that high efficiency equipment requires more maintenance. Many of us have learned this lesson with mod con boilers. It is in everyone best interest to keep this equipment tuned and updated. Perhaps all of these installations should include a yearly clean and check.**

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gases are elevated to 200°F and additional energy is transferred that would normally go up to flue in non-gasification equipment. The gasification appliances, when properly setup and maintained and properly fueled, will meet the EPA emission standards now coming into effect.

It is important to know that high efficiency equipment requires more maintenance. Many of us have learned this lesson with mod con boilers. It is in everyone best interest to keep this equipment tuned and updated. Perhaps all of these installations should include a yearly clean and check. The customer would pay for this service and it may be required to maintain the warranty.

I understand and agree that there isn't a magic product out there to end our dependence on imported energy sources. Coal, gas, oil, and nuclear energy sources will all be part of the mix — in my lifetime for sure. But I do believe we could do more to embrace energy sources that are home grown or falling from the sky, and splashing on our shores — as in waves, not spilled oil.

The progressive contractors and designers know this. I see them lining the aisles at AE, RE and green building shows. Are you one of them? ■

*Bob "hot rod" Rohr has been a plumbing, radiant heat and solar contractor for 30 years. A long-time RPA member, Bob is manager of training and education for Caleffi North America.*

## Study shows plastic piping systems enable proper performance of green building technologies

GLEN ELLYN, ILL. — Plastic pipe, tubing and fittings play an integral role in the proper functional, safety and environmental performance of 11 key green building technologies. That's the conclusion of a new study, "Green Building Technologies that Use Plastic Pipe and Tubing to Function," which highlights the advantages of plastic pipe, tube and fittings in the residential and commercial application of the green building technologies and provides information that can assist in the evaluation, selection, design and implementation of these technologies in new construction or remodeling of homes and buildings.

The study details the use of piping systems and those situations where plastic is preferred over alternatives. The primary advantages cited for plastic piping systems generally include:

- Durability and strength combined with chemical, weather and corrosion resistance and biological inertness, leading to effective performance and long service life in the field
- Extensive testing and compliance with nationally accepted consensus standards, third-party certification, and approval in building codes and regulations.
- Material flexibility and lighter weight, enabling greater design flexibility, ease of installation and lower installation time and cost
- Ease of color coding and marking to identify safe acceptable uses and applications
- Cost-effectiveness in terms of manufacturing, transportation and ease of installation

The report contains a chapter on residential and commercial application of each of the following eleven technologies:

1. Gray water reuse
2. Rainwater harvesting
3. Geothermal ground loops
4. Higher efficiency hot water distribution
5. Radiant heating
6. Solar hot water
7. Water efficient irrigation
8. Radon venting
9. Decentralized wastewater treatment
10. Central vacuum systems

### 11. Residential fire sprinklers

For each technology reviewed, information was compiled on: description, benefits and limitations; energy and/or water savings potential for a hypothetical scenario, associated simple economic payback period and estimated CO<sub>2</sub> equivalent (CO<sub>2</sub>e) greenhouse gas reductions; life safety impacts, where applicable; Indoor environmental quality (IEQ) impacts, where applicable; materials used for piping, tubing, fittings; and operating examples describing selected examples of installations.

Plastic piping systems are increasingly being used in green building to take advantage of state and local governments offering incentives for green buildings in the form of tax credits (income and property tax, sales tax), fast-tracking building permit approvals, utility subsidies, grants and loans. Innovative financing mechanisms are increasingly being made available to assist with capital costs of installing green building technologies, especially when favorable projected operating cost savings can be demonstrated.

The study's relevance in green buildings is underscored by data that notes that an American family of four can use 400 gallons (3,338 pounds) of water per day.

For more information on the study, visit the Plastic Pipe and Fittings Association at [plasticpiping.org](http://plasticpiping.org).

### Get lead safe certified

A special reminder that the new Environmental Protection Agency (EPA) Lead Paint rule is now in effect. Any contractor who disturbs more than six square feet of lead paint or does any window replacement or demolition must be Lead-Safe Certified. Those who aren't could face tens of thousands of dollars in fines per violation, per day and potential lawsuits.

And then you, too, can fuggedaboutit.

One last thing. On every steam system that has a vacuum pump, you'll also see a small equalizing line that runs from the pump's receiver to the boiler. This line will dip down at some point to form a U-tube that will always have water in it. In the low point of that U-tube there will be a check valve that points toward the boiler.

This line is there to equalize the natural vacuum that can form inside the supply mains and radiators during the fall and the spring when the pipes are cold on start-up. That naturally induced vacuum, caused by that 1,700:1 ratio of contraction when steam condenses, can cause a greater vacuum in the supply lines than the vacuum pump is making in the return lines, and that will keep the condensate from leaving the radiators. Equalizers equalizer.

None of this is that complicate. Just think like steam. ■

## Holohan

(Continued from page 20.)

have a vacuum maker on the return. Having a vacuum maker and a vacuum breaker in the same system is like having a humidifier and a dehumidifier in the same room. They'll just go to war with each other to see who's the toughest.

Here's how to solve this problem. Instead of using a spring-loaded check valve between the boiler-feed pump and the boiler, use a motorized valve. Control the motorized valve with a pump controller on the boiler. When the boiler needs water, it will open the valve, which, in turn, will start the boiler-feed pump through its end switch. The boiler will get the water it needs, and once the motorized valve closes, the atmosphere won't be able to shove any unwanted water into the boiler.

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- Installation
- Sprinkler spacing
- Obstruction rules
- Code interpretation
- Troubleshooting
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BY BRISTOL STICKNEY  
contributing writer

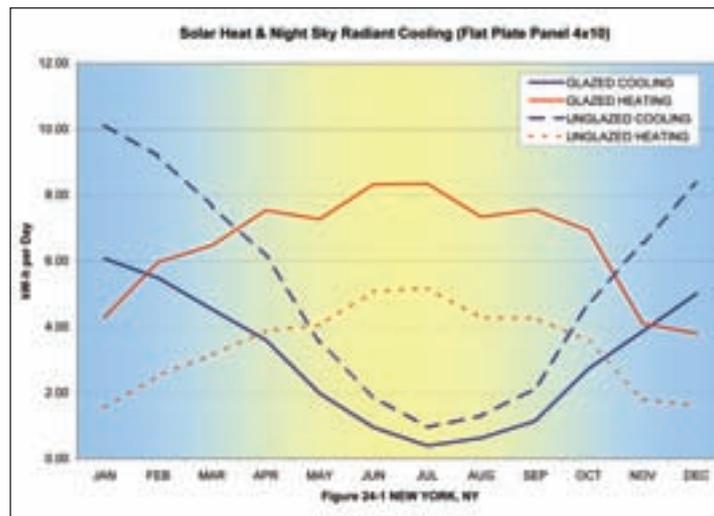
## Flat plate collectors – heating vs. cooling by climate

Last month I introduced some of the computer software available to model and analyze solar heating installations in virtually any climate. Using this type of software with its detailed weather data and the ability to export data to supplementary spreadsheets allows the solar heating designer to answer questions and visualize the range of performance like never before. Let me show you what I mean with a practical example.

In the past few months, an increasing number of people have been asking me about using flat plate solar thermal panels for both daytime solar heating and night time radiant cooling. The inevitable design questions come up in nearly every project:

1. Can I use unglazed panels for both heating and cooling all year round?
2. How much better will the glazed panels perform in winter compared to unglazed?
3. If I use glazed panels only, is it worth while to run them at night for summer cooling?
4. How much solar heat and how much night cooling will each type of panel provide?

Of course the answers to these questions depend entirely on the climate at each different project, since solar heat



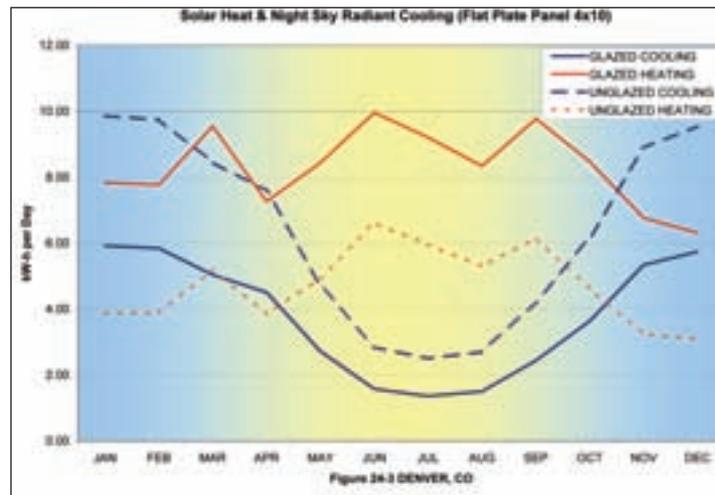
production and radiant cooling availability are driven entirely by local weather and temperature patterns. Since the solar heating computer models give virtually instant access to thousands of climate locations, this seems like an ideal way to answer these questions quickly and thoroughly.

### Modeling the temps and solar heat available with SAM

I decided to try the free solar design program from NREL called SAM (Solar Adviser Model). This software allows the user to enter the collector efficiency ratings (available from the SRCC tests) and then calculates the solar heat output hour by hour using TMY or EPW weather data. A built-in routine called Data View (DView) allows you to graph the weather data and the simulation results hourly, daily or monthly. Once you see a graph you like, you can right click on the graph, and a menu allows you to export the data seen on that graph into a text file that is compatible with the Excel spreadsheet.

My goal was to compare data from various collectors in various climates on a month by month basis. SAM allows the user to keep the same collector con-

figuration and instantly change climates, so building a spreadsheet using several different collectors in a number of different climates proved to be a rapid process.



My method was to enter one glazed collector and one unglazed panel of the same size into the program at a fixed tilt and orientation. Then change the climate location and plot the results on a graph using Excel. Since SAM does not include the capability to analyze Night Sky Radiant Cooling (NSRC), I plan to use the climate data provided by SAM and some additional spreadsheet calculations to accomplish that.

The following conditions were assumed in these collector simulation models:

Panel Size — 4x 10 , 40 ft<sup>2</sup>, (3.7 m<sup>2</sup>)

Tilt — 45 degrees

Orientation — South (within 5 degrees)

Net heating & cooling energy will be used (pump energy is deducted)

Solar heating temperatures are assumed to be within the normal DHW range.

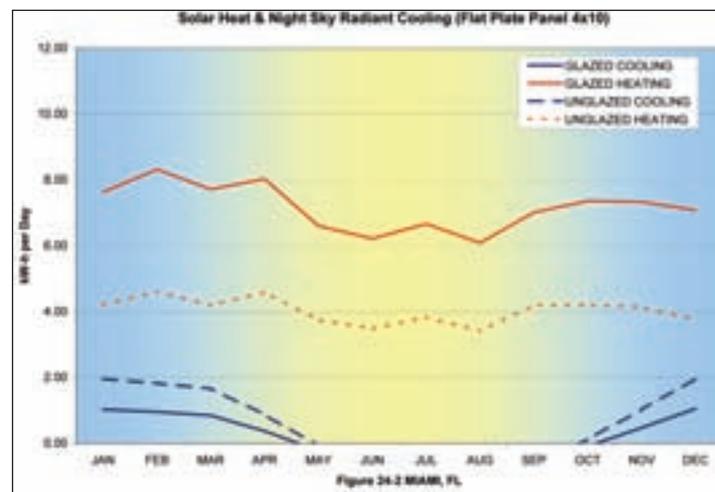
Comfort cooling for mass floors uses 75F fluid provided to the cooling panel.

Glazed panels use selective surface black absorbers with single glass.

Unglazed panels are black plastic non-selective rectangular tube plates.

### Estimating NSRC using the 'Dew Point Method'

The dew point method for estimating NSRC heat loss rates is based on an original study that I completed in 2006 along with co-researchers Mark Chalom and Kate Snyder and support from the State of New Mexico. One



(Turn to Flat plate collectors, page 26.)

In the past few months, an increasing number of people have been asking me about using flat plate solar thermal panels for both daytime solar heating and night time radiant cooling.

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**EXCELLENCE  
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FROM THE DESK OF...

**John Hazen White, Jr.****American Made!**JOHN HAZEN WHITE, JR.  
President & CEO, Taco Inc.

I saw a news item recently about Mack Trucks putting people back to work here in America. Amidst all the downside news about our struggling economy that we're seeing all the time, this was a good sign for our manufacturing economy, of which HVAC is a solid part. It gets back to Made in America and how important that is to all of us. We need to see more companies hiring here at home and not overseas. We need to rebuild American manufacturing.

Yes, many American companies in the last decade or two have taken their jobs overseas to take advantage of cheap labor. While most of them found that producing goods overseas might have bottom line advantages at first, those advantages have gradually disappeared or shrunk considerably as wage levels rose, commodity prices increased, and transportation costs weighed in. Quality control can also be an issue in some overseas manufacturing, as we've seen with certain goods coming in from China.

Some American companies never made the easy move to manufacture overseas. I am proud to say that Taco was one of those companies. Long ago, we made a com-

**"We made a commitment to our employees to stay where we began... We are an American company... since 1920"**

mitment to our employees to stay where we began and to improve our manufacturing process so that we could manufacture competitively right here at home. We accomplished that, and we continue to work on perfecting it.

Just as we are an American company, in business since 1920, we are also an international company. We source and buy materials from around the world. We also sell Taco products overseas in certain markets like Asia and the Middle East, where there has been significant business for us, based on fast growing economies. Every American manufacturer needs to have an international presence today and to grow their overseas business as best they can. Exports, after all, help our economy and lower our worrisome trade deficit.

But when it comes to manufacturing, what goes out our doors to you, our customers, is something we do not out-source overseas. We make the best products right here in America and we've learned how to do it competitively against any foreign company. As an American manufacturer we build products focused on our domestic HVAC market. These products are specifically designed and built for use in American systems, based on our long experience in servicing them.

We build the products you need to service your customers in the best way possible. We want your installs to be quick and easy, and for you to have peace of mind in knowing that you installed the best and most advanced products available today. We stand 100-percent behind all of our products as we stand behind you. We want you to prosper using our products, services and support, and in doing so to build a secure future.

In return we hope that Made in America means something important to you too. Because we are all in this together. That's why our latest ad campaign, *Your job is our job* emphasizes the vital connection that starts on our factory floors in Cranston, RI and Fall River, MA. Working there day to day are some of the finest and most efficient workers to be found anywhere in the world. We didn't have to search the globe to find them; we had them all along. They are our partners in the Taco enterprise.

That's why I say that my most important constituency is my 500 employees. It all starts with them, and our success goes back to them. They're proud to be engaged in helping make an American company an enduring success, and we all appreciate your support and trust in us.

**Circle 22 on Reader Reply Card**

**Flat plate collectors**

(Continued from page 24.)

of the findings from this study was that the following formula (Equation 24-1) provides a reasonably simple way of estimating the cooling potential for NSRC in various climates using Dew Point and Air Temperature.

$$Q=U*A*[T_{in}-(T_{dew}+(T_{air}-T_{dew})/2)] \text{ [Equation 24-1]}$$

The terms in Equation 24-1 are defined as follows:

$Q$  - Btu/hr — Heat Loss (Cooling) available per Hour from a radiator plate

(Multiply times 10 hours for typical Heat Loss per Night.)

(Divide by 3,413 to convert to Heat Loss per night in units of kilo-Watt Hours.)

$U$  - Btu/hr-ft<sup>2</sup>-°F — Heat Loss Coefficient for a collector/radiator panel.

(Determined by the author by field measurement.)

e.g. glazed=1.22, unglazed = 1.98

(The most common radiator plates typically fit into a range from 1 to 2. Radiator plates with glazing, selective surfaces, widely spaced tubing and poor thermal contact between the fluid and the plate surface will have lower values. Plates that are "fully wetted," closely spaced tubes, no selective surface and good thermal contact between the fluid and the surface will have higher values.)

$A$  - ft<sup>2</sup> — Area of the cooling panel. e.g. 40 ft<sup>2</sup>

$T_{in}$  - °F — Fluid inlet temperature entering the panel e.g. 75F for direct floor cooling. Higher temperatures for cooling jobs.

$T_{air}$  - °F — Ambient (dry bulb) outdoor air temperature.

$T_{dew}$  - °F — Dew Point outdoor air temperature.

Using the temperatures provided by SAM, ( $T_{air}$  and  $T_{dew}$ ), this equation can be used to estimate the cooling available very quickly using a spreadsheet.

**Annual heating and cooling graphs**

The results of this series of computer models are shown in the graphs, Figure 24-1 through Figure 24-4. Four sample climate locations are shown month by month with the solar heat available and the NSRC cooling potential for both a glazed and an unglazed collector panel. With these results, we can begin to answer the questions posed at the top of this article for each of these climate locations.

Looking at these graphs, we can observe some interesting general trends, some obvious some not so obvious.

- Glazed panels tend to produce twice as much heat as unglazed panels.
- Unglazed panels tend to produce twice as much cooling as glazed panels.
- Unglazed panels don't heat very well in win-

ter in climates like New York.

- Unglazed panels heat surprisingly consistently in climates like LA and Miami.

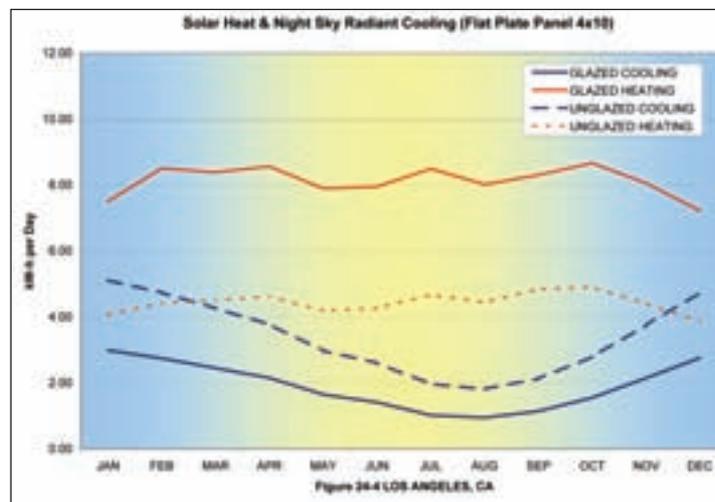
- NSRC cooling is an energy resource that mirrors the solar heating resource.

- NSRC comfort cooling does not work in high humidity (like Miami in summer).

- A couple of panels may be enough to cool a single room in drier climates.

- Plenty of "free" cooling is available through the year in the non-summer months.

Keep in mind that these graphs were con-



structed for home heating and cooling applications were comfort cooling fluid from hydronic floors is typically around 75F. Much more radiant cooling can be accomplished at higher fluid temperatures. So for example, if some process required cooling fluid at 100F, twice as much NSRC heat loss can be achieved at this higher temperature. For commercial buildings and industrial processes, NSRC cooling even in winter is not such a crazy idea.

Brand names, organizations, suppliers and manufacturers are mentioned in these articles only to provide examples for illustration and discussion and do not constitute any recommendation or endorsement. Calculations and estimates are for example only, and not for intended for any particular design application. ■

*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. For more information visit [www.solarlogicllc.com](http://www.solarlogicllc.com).*

In this series of articles, I have been making the case that the key ingredients for solar/hydronic design and installation can be divided into six categories, listed below, roughly in order of their importance.

1. RELIABILITY
2. EFFECTIVENESS
3. COMPATIBILITY
4. ELEGANCE
5. SERVICEABILITY
6. EFFICIENCY

The success of any solar hydronic home heating installation depends on the often-conflicting balance between any of these six principles. Finding the balance between them defines the art of solar heating design.

# Great warm-ups.



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Domestic water heating is the #2 user of energy in most parts of the country. That's why homeowners are warming up to solar. With Taco Variable Speed Solar Pumps with integral controls, system performance can increase by as much as 20%. Our Solar X-Pump Block's patent-pending design includes a variable speed solar differential control, collector circulator, storage tank circulator and brazed-plate heat exchanger for system isolation, all in a single unit. The Solar Pumping Station is a complete closed loop system. With just 5

connections – 2 to the collector(s), 2 to the storage tank's heat exchanger, and 1 to the expansion tank – the installation is done!

## Flexible applications.

All Taco solar products work beautifully with any solar thermal application: open or closed loop, drain-back, 1 or 2 storage tanks and more. And each is a snap to install. It's solar everyone can warm up to.





BY ELLEN ROHR  
contributing writer

## How things work

When we were first married, Hot Rod and I lived in a little cabin outside Whitefish, Montana. It was 11 by 15 feet, perched on four fairly flat rocks which served as the foundation. It had a single pitch shed roof, with corrugated steel sheeting for the rain to dance on. We called it the Villa Debris. Just prior to hitching up with me, Hot Rod had taken his total savings, \$5,000, and used it to drill a well on the property. He never hit water. So, we had a cabin, 10 acres — and a \$5,000 hole. Still, it was heaven living at the Villa.

Being married to a plumber has its perks. Hot Rod rigged up a rain collection system that fed into a cistern. He tapped into the creek when it was running to fill the tank, too. We used that water for showers and, yep, we even had a hot tub! He had pumps and pipes all arranged so that it was very civilized. It was adventurous, too, because when the creek dried up and it didn't rain, we "poached" water from a neighbor's stream. We used a gas powered pump, and under the cloak of night, we sucked their water into our 700-gallon glass-lined tank (previously used by another neighbor for milk storage.)

We had a lovely outhouse. An outhouse can be delightful if you maintain it and shovel some stove ashes into the "composting matter" now and then.

We hauled drinking water from town. I could stretch five gallons of drinking water. I used it by the teaspoon when I brushed my teeth. It never felt like a burden; I conserved because I had to. I got used to it and it became a non-issue.

We moved back to the city and to well water and, well, my conservation efforts got sloppy. While I don't leave the house with the water running, I don't turn the water off when I brush my teeth anymore. Unless it hurts — it's expensive or a hassle — I don't think conservation is going to go mainstream. Some folks, like Hot Rod, are just environmentally conscious. It breaks his heart to see a plastic bottle hit the landfill. Other folks, like me, need to be coerced into it. And we will get used to it.

If water and fuel were priced as they should be, as the precious commodities they are, we would figure out how to squeeze the most out of every drop. We would be solar powered by now. We, and by "we," I mean, "you," would have this figured out because that is what you know how to do. You know how things work.

Last night Hot Rod and I watched a documentary called Gasland ([www.gaslandthemovie.com](http://www.gaslandthemovie.com)). It's about one man's investigation into the effects of drilling for natural gas, using a process called "fracking." Bottom line: the Gulf Oil crisis is one of many disasters caused by our addiction to oil coupled with unsafe, unregulated drilling methods. "Fracking" is causing deadly pollution all across our country, and other parts of the world. I'm not being a catastrophist. You know how water systems work. You can't randomly crack the ground and not expect to get the toxic drilling chemicals and fuel and water all mixed up. You know that, in spite of what any politicians or oil executives say. You know this because you know how things work.

There are safe (at least, much safer) ways to drill and regulations are part of a responsible approach. Regulations impose safety equipment and systems of checks and balances. Those things cost money and should drive up the cost of fuel. So be it. Fuel should be expensive. Our dependence on fuel has a major impact on our environment, economy and national security. I understand that all our energy decisions have consequences. I also

know from firsthand experience that we will get used to getting by with less if we have to pay more. Now is the time to make these decisions and adopt different energy sources.

One of the things I love about Hot Rod is how capable he is when it comes to all things mechanical. A disabled aircraft carrier could find its way to the pond on Know It All Lane and he could figure out how to get it sea-worthy and sailing again. Hot Rod can take the power of the sun and convert it to reliable, comfortable warm water and warm floors. So can you because you know how to do these things. Recently Hot Rod rigged up an outdoor

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If water and fuel were priced

as they should be, as the precious

commodities they are, we would figure

out how to squeeze the most out of every drop.

We would be solar powered by now.

We, and by "we," I mean, "you," would have

this figured out because that is what you

know how to do. You know how things work.

---

soaking tub for me. I love taking a bath and sitting outside on a hot summer night, under the stars with the fireflies for company. He can rig up a tub with sun-heated water and provide that nice experience for me. You can do nice things like that, too. No matter where you are in your business, or in your life, stop and consider how wonderful your specific skill set is. You know how to make water warm, through a multitude of different arrangements and fuel sources. You know how to translate that warm water into warm floors, clean clothes and comfortable people. You know how to keep the good water from bad water. You know how to link it all up with electricity and fuel and sunshine without blowing anyone up. Or permanently crippling the environment. Now more than ever, the world needs the skills you have. As someone who might get hurt picking up a Channellocks, may I say, "Thank you for all you do."

We have challenges before us. I know that you can figure out these challenges. Some people may lose their current jobs in the oil fields. Perhaps they can find new jobs in the solar and wind energy industries, or in the pursuit of better regulations for drilling. There is an economy to jump start and our planet to salvage and you know how to do all of these things. Because you know how things work. ■

*Al Levi and I help you spend the least effort (and money) for the most success in your business and life. Join us for the Step by Step Success program. The power of one simple, focused action...one step at a time. Reach me at 417.753.1111 or [contact@barebonesbiz.com](mailto:contact@barebonesbiz.com). Check out [www.StepByStepBusinessBuilding.com](http://www.StepByStepBusinessBuilding.com).*

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Now more than ever,  
the world needs the skills  
you have. As someone who  
might get hurt picking up a  
Channellocks, may I say,  
"Thank you for all you do."

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# Now We're 4 For 4! **CLEARReport** by Clear Seas Research

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Circle 24 on Reader Reply Card



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

## Stop following bad examples!

Contractors often make the detrimental mistake of following the flawed business practices of their competition. If you do this, you will be placing your business on a very slippery slope, which leads to mounting debt and increasing stress and frustration.

I am often asked by contractors who are just beginning with my coaching assistance, “What do other contractors you have coached charge?” My response is always based on something my mother used to say to me as a child when I looked at what others had or were doing. “Look in your plate!”

She also said, “If your friends jumped off a bridge, would you follow them?” This came up whenever I wanted to do something my friends were doing that she thought was wrong or dangerous. Those axioms were true decades ago. They are true today.

Unfortunately, most contractors charge prices which are below their true cost of operation and set up bad business practices because they follow the bad example of their competitors. As a contractor, you would be better off not following the business style of people who don't know how to properly operate their own business. These buffoons are most likely cheating themselves. They are probably also cheating their employees and/or clientele in an effort to make their wrong numbers and foolish procedures work. That's not the proper way to run a successful business.

Your clientele deserve excellence for the hard earned dollars they pay you for your services. Excellence in the contracting business requires owners with the intent, and technicians with the ability, to deliver top quality workmanship. Cheating can only lead to business failure. That's why the so-called “going rate” of most contractors is really the “going broke rate.”

Following your competitors' erroneous prices and protocols says that you are not sure about the way in which you are running your business. Instead of looking at your competition as an example to follow, you would be wiser to concentrate on your business costs, selling prices and protocols rather than imitating the practices of those who are ignorant to their own situation. Then, you could regard them as a good example of a bad example.

Ignorance in business can only put you on the road that leads to wrong results. Egotism will keep you from realizing you are on that road. Fear of changing direction and worry about the potential of bad things that might happen (but probably won't) if you change direction keeps you from getting where you want to go.

Every contractor I have coached in proper contracting business protocols who understood and properly implemented the theories and methods I showed them has improved their business results. But, each of them started

(Turn to Bad examples, page 32.)

Instead of looking at your competition as an example to follow, you would be wiser to concentrate on your business costs, selling prices and protocols rather than imitating the practices of those who are ignorant to their own situation.

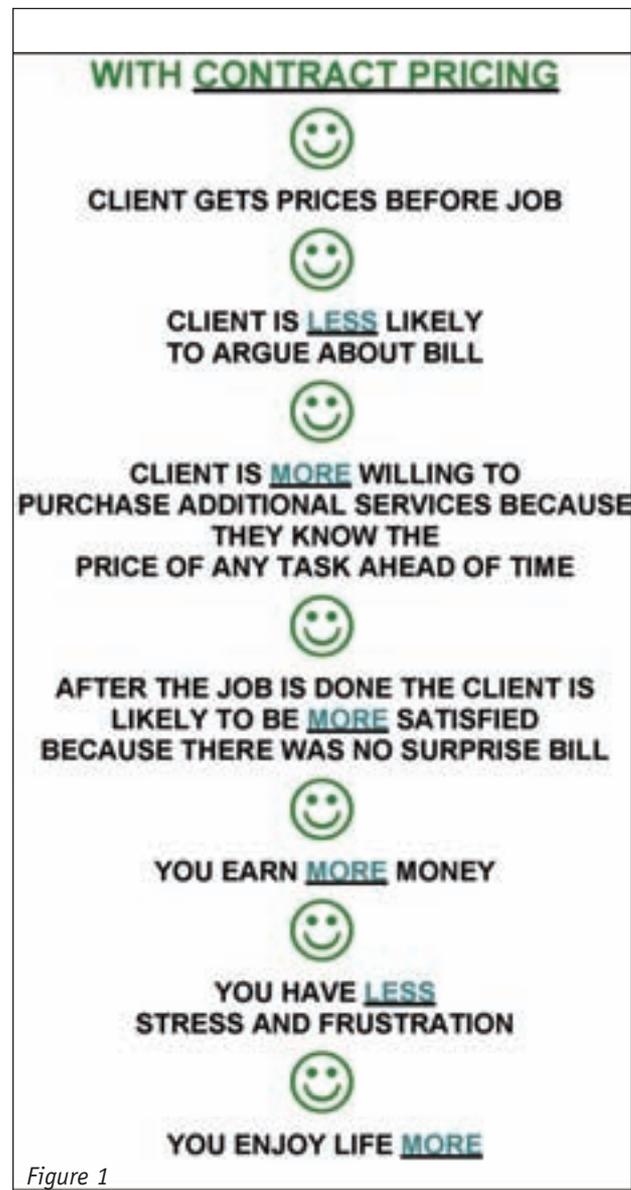


Figure 1

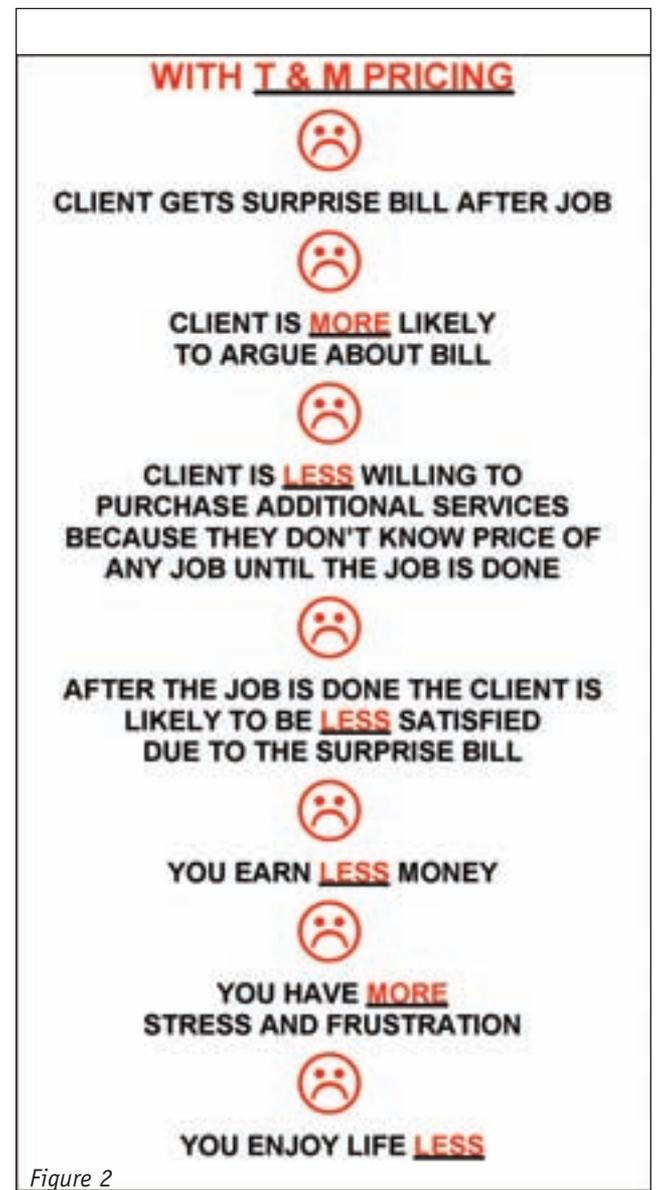


Figure 2

# "My workhorse!"

Carl Helt, Helt Plumbing, Charleston, MO

"We used the Speedrooter on four separate jobs in one day and it came through every time!" says Carl Helt.



## Speedrooter 92 – Job Tested Tough

Contractors like Carl know that the Speedrooter really can take a beating – from its frame braced at key stress points, to General's exclusive Flexicore® cable with an integral wire rope center and the industry's best warranty.

"I'm from the old school," Helt continues, "we stand behind our work – and expect the same from the tools we use."

The Speedrooter's field tested design offers easy handling.

One person can load it onto a truck.

"It's great for one-man operation," Helt contends.

"I'm certainly not as young as I used to be, and I can handle Speedrooter with no trouble!"

With the power to handle long tough jobs, the Speedrooter's power cable feed takes the muscle work out of drain cleaning.

The Speedrooter remains Carl Helt's favorite. "It's so reliable," he concludes. "I can just send the guys out – and know we'll get the job done!"

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Circle 25 on Reader Reply Card

## Don't follow bad examples

(Continued from 30.)

with a very fearful heart. That's only natural. They had been doing the wrong thing for so many years the thought of change scared the excrement out of them.

Their fear soon changed to ecstasy when they began to succeed rather than continue to flounder in a sea of confusion, flawed ideology and increasing debt, stress and frustration.

have knowledge of the services they offer to consumers possess the data needed to calculate proper profitable prices before commencing work. Those good contractors with the intent of delivering excellence who do not realize they have this information can be shown how to recognize the fact that they really do have this ability by a good contracting business coach. T & M pricing is a crutch for bad contractors who hire inept

**Your clientele deserve excellence for the hard earned dollars they pay you for your services. Excellence in the contracting business requires owners with the intent, and technicians with the ability, to deliver top quality workmanship.**

But, if they ever slip into their old ways, they will once again be on the road to their own destruction.

You must start thinking "out of the box" as they say. Find ways to make your business different from that of your competition. Deliver excellence in performance; properly warrant your workmanship; create service agreements that benefit both you and your clientele; correctly identify and calculate your true cost of operation; develop properly profitable

mediocre technicians. Figures 1 & 2 show the differences between contract pricing and T & M pricing.

The best way to improve our noble industry is for contractors who are running their businesses properly to set a good example for other contractors. Some of the contractors I have coached agree and have been gracious enough to supply me with, and allow me to print, a comparison of the revenue they would have realized using their old flawed protocols

1	2	3	4	5	6	7	8
Contractor	# of		Revenue if		Revenue using	EXTRA REV ENUE for same	EXTRA
Area	Tasks	Hours	Wrong Numbers	Material	Coach DiToma	workload w/ th Coach DiToma's	REV ENUE
of USA	Done	Spent	were used	Cost	Contract Pricing	Solution Support System	PERCENTAGE
Mid Atlantic States	289	348	\$88,762.32	\$11,872.53	\$120,665.28	\$51,802.96	75.34%
South East States	273	602	\$120,194.54	\$16,133.08	\$158,110.22	\$37,915.68	31.55%

Figure 3

selling prices that allow you to recover your true cost and earn the reward you deserve; and utilize contract pricing where you quote prices before work commences (after you have seen the circumstances of any task — not sight unseen over the phone);

All of these suggestions can best be accomplished with correct contract pricing protocols and proper business procedures rather than the old and flawed time & material pricing method. It is not wise for consumers to give contractors working on their home a blank check based on the time and material to perform the task. If the contractors are lacking in their knowledge and ability the consumer pays for their shortcomings. Good contractors who

and incorrect numbers (which were causing them to lose money) to the revenue they actually received for the same work using the sound proper business protocols I coached them to consider using.

Figure 3 shows the improved results of two of those contractors who are currently in the infancy of their respective changes. They are from different parts of the country and were both utilizing incorrect numbers and wrong business procedures. They improved their business results with my coaching; contract pricing; my Readily Available Pricing Infor-

mation Digest© for the Plumbing Heating and Cooling Contractor; and their intent to change and implement correct prices and proper business procedures. Their operational costs are different and the results they achieved vary with their costs, ability to understand and properly implement proper business protocols, and the degree of error they previously used regarding their former incorrect numbers.

Column 1 shows their geographic area. Column 2 indicates the number of tasks performed for the results shown. Column 3 explains the actual hours (including travel time) spent to complete the jobs. Column 4 shows the amount of revenue their businesses would have brought in using incorrect numbers and wrong protocols. Column 5 gives the material cost for the tasks performed. Column 6 shows the money those tasks actually brought in due to my coaching, contract pricing and my price guide (customized to their labor costs, overhead costs, and profit margin). Column 7 and 8 prove the value they received for their decision to change and show the extra revenue these contractors realized in dollars and percentages.

For information on my theories and methods, coaching assistance, contract pricing, customized price guides, consultations and/or seminars, give me a call at 845-639-5050. The process is not painful. And as

you can see, the results can be most enjoyable. I wish you Good Health and Much Prosperity!

Richard P. DiToma is a contracting business consultant and active PHC contractor with over 40 years of experience in the PHC industry.

#### To receive more info about his:

- ▶ CONTRACTING BUSINESS COACHING
- ▶ CONSULTATIONS
- ▶ BUSINESS BOOKS
- ▶ SEMINARS WITH **SOLUTIONS**
- ▶ CUSTOMIZED PRICE GUIDES
- ▶ CUSTOMIZED BUSINESS FORMS

CONTACT RICHARD by  
 Call: 845-639-5050  
 Fax: 845-639-6791  
 E-mailing: [richardditoma@verizon.net](mailto:richardditoma@verizon.net)  
 Mail: R&G Profit-Ability, Inc.  
 P.O. Box 282, West Nyack, NY 10994

## News in brief

### ShowHouse® sponsors Kansas City Showhouse

NORTH OLMDSTED, OHIO — ShowHouse®, Moen's luxury brand, has played an integral role in the Kansas City Showhouse, the nation's longest-running, continuous showhouse fundraising project. Several ShowHouse brand kitchen and bath products were featured in the designer



Showhouse, a custom-designed and fully furnished home conceived by local interior designers and artists. The home was featured in a home tour in April and May, with proceeds benefiting the Kansas City Symphony.

### Rinnai offers boiler rebate to contractors/dealers

PEACHTREE CITY, GA. — Through August 31, 2010, Rinnai America Corp. is offering contractors/dealers a rebate of up to



\$1,000 on select boiler products. To qualify for the rebate, boiler units must be purchased from a Rinnai distributor at their published price and registered with the Rinnai Partner Portal (<http://partners.rinnai.us>).

Following the unit's registration, contractors/dealers will be e-mailed a rebate voucher, which can be applied to a second boiler unit purchased prior to August 31, 2010. After the second unit is purchased, the rebate voucher and distributor invoice should be mailed to Rinnai by Sept. 30, 2010 for processing. There is a maximum of one rebate voucher per contractor/dealer location, and the amount of rebate varies according to the boiler unit type:

- Models: E75C/E110C — \$300 rebate
- Models: Q85S/Q130S — \$600 rebate
- Models: Q175S/Q205S — \$800 rebate

• Model: Q175C — \$1,000 rebate  
 For more info, [www.rinnai.us](http://www.rinnai.us).

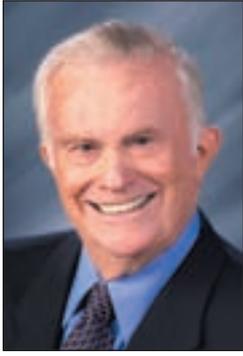
## LittleGIANT®

When you purchase a Little Giant 5 Series utility pump from Franklin Electric, you're getting an industry-proven product, trusted by professionals. Performing at 1200 gph, the compact 5 Series offers 26 feet of maximum lift and pumps down to 1/8 inch, providing unmatched performance. Our dependable pumps will always be there, unstoppable in the field.



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[www.franklin-electric.com/lg](http://www.franklin-electric.com/lg)

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BY MORRIS BESCHLOSS  
PVF & economic analyst emeritus

## U.S. manufacturing, construction generate surprise rebound

**A**mong the welter of bad news, including the spreading Gulf oil slick, the out-of-control government expenditures, and nagging high unemployment, the rebound of the ailing manufacturing and construction sectors shone through as welcome good news in late spring.

Manufacturing has been flexing its flaccid muscles for the past consecutive 10 months, with new orders and increased export activity providing an orderly growth pattern within the confines of an expanding demand economy. Although major new projects are lagging in all manufacturing sub-sectors, there is enough maintenance, repair and expansion for the current pace's momentum to be maintained.

The turnaround in construction is even more exhilarating. With a 10-year-high jump — 02.7% in April over March, the 4.4% spending on residential construction took observers completely by surprise. Simultaneously, spending on non-residential construction gained 1.7%. This was undergirded by increased outlays on power plants and factory construction. This offset an expected downturn in spending on commercial properties, such as shopping malls and office buildings.

A continuation of this trend will strengthen the two major sectors of business and industry that got hit the hardest in the wake of the Great Recession. Although the reawakening of these main pillars will add to their monetary liquidity, steady growth, and profitability, the underlying unemployment problems will continue to beset America's overall economic troubles.

Such steady demand growth could even add to the unemployment rolls, as thousands of domestic businesses turn to mechanization, automation and upgrading to shield themselves from the raft of new taxes that business, industry, and the consumer will be faced with in the turn to 2011.

Despite the possibility of greater balance between the executive and legislative branches, the White House will redouble its efforts to shift America's future direction into the hands of government operatives.

### Entitlement culture threatens America's entrepreneurial economy

Even before President Obama's massive healthcare government takeover threatens to kick in, the income gap between government workers and those employed in the private sector is widening.

According to best estimates provided by relevant organizations, the average income and benefits provided to expanding taxpayer-supported professions and jobs is estimated at \$79,000 per year. Comparable jobs generated in the entrepreneurial private sector economy lag at \$49,000. This gap is sure to widen after the first of the year, as the Bush-era tax cuts disappear and a proliferation of the Obama Administration's new tax programs begin to kick in.

Unless there are dramatic reversals in the current direction, due to major political upheavals in the November elections, this trend is headed for a point of no return.

It will spell the end of American exceptionalism and the incentivized super American economy that is responsible for more than one fourth of the world's gross domestic product with less than five percent of the global population.

The best example of what will happen to the United States under present circumstances is not Greece and the

smaller countries of the European Union, but the United Kingdom, which lags only Denmark and France in its close to 40% of that nation's gross domestic product of goods and services spent for taxes.

It's become a matter of recent historical fact that the ground-breaking technological changes and economic evolution are coming from the wellsprings provided by the energies released in the developing nations of the world. These are using an ever-increasing availability of private funds to inspire the innovative capability of their indigenous populations.

The current U.S. government's penchant for wealth redistribution will broaden a climate of economic stagnation, feasting on the residue of creativity provided by independent-minded predecessor generations. Worse, an increasing number of American voters, dependent on government largesse, will be motivated to retain the taxpayer-supported status quo which will doom the U.S. to the malaise of the likes of the U.K. and other increasingly Socialistic European nations.

### Gulf of Mexico 'Perfect Storm' could provoke double dip recession

The total frustration engendered by the U.S. Government's lack of leadership and British Petroleum's inadequacy in stopping the oil gusher polluting the Gulf's proximity could instigate unexpected consequences.

A number of potentially disastrous factors are beginning to coalesce in undermining an already shaky economic U.S. recovery.

1) Of the six million barrels of oil per day now being produced in the 50 U.S. states, a third had been pumped from the Western Gulf of Mexico. An executive decree has now put such production under a six-month moratorium, which will likely extend indefinitely.

This will not only make the U.S. even more dependent on foreign oil, but will negatively impact the thousands of component manufacturers, distributors, contractors and services related to this important domestic industry.

2) With a forecast of 12-14 hurricanes predicted during the upcoming season (June-November), total havoc could ensue along the greater American coastline, as the oil-polluted waters are driven far beyond their point of origin.

3) Unemployment, already at unacceptable levels, could reach depression era volumes as allied industries such as fishing, boating, and tourism are afflicted by the disaster's ongoing aftermath.

These and other evolving negatives will further undermine the runaway debt and deficit, to which the Obama Administration seems totally impervious.

With predictions of problem solution extending to late August and beyond, the near-term outlook of America's economic future looks increasingly uncertain, coming at a time when the business and industrial community was pulling itself up by its bootstraps, despite increasing government interference.

This ill-starred set of circumstances will likely incite major political, as well as economic, consequences as the mid-term elections approach.

### Solar power on verge of major global breakthrough

There is one energy factor that the U.S. Energy Department, the International Energy Administration, the American government and China seem to agree on — solar power is the energy wave of the future.

(Turn to Construction... page 38.)

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The current U.S. government's penchant for wealth redistribution will broaden a climate of economic stagnation, feasting on the residue of creativity provided by independent-minded predecessor generations.

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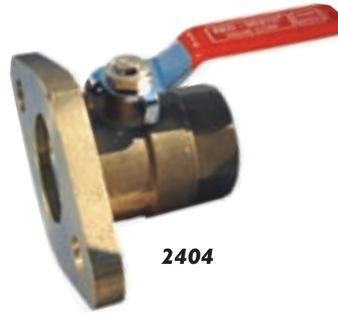
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5910



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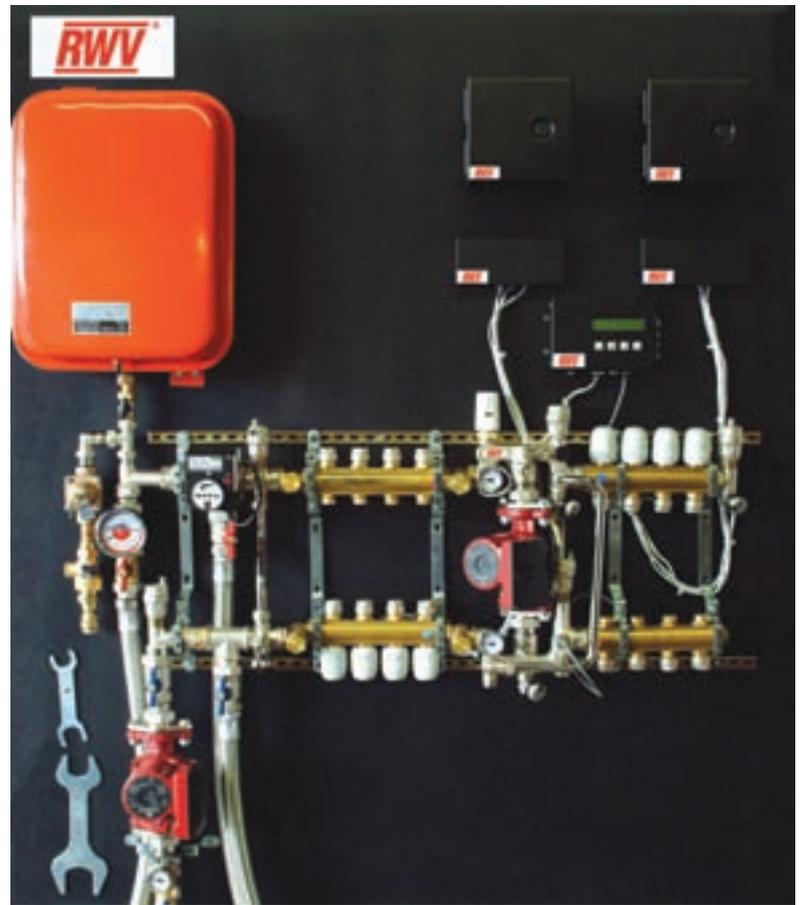
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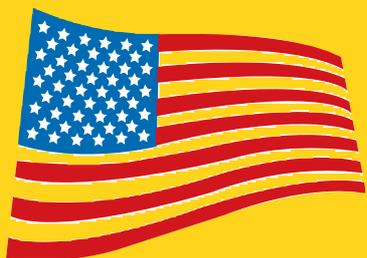
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ISO 9001:2008

## Manufacturing, construction making rebound

(Continued from page 34.)

Although certain parts of the world are more amenable to sun power than others, its use is still spotty in the world today. Surprisingly cold, damp Germany, no progenitor of intense sunshine, is the

traded companies with their multifaceted structure, and privately-owned small business is becoming more pronounced as larger corporations are benefiting from a manufacturing and inventory-replenishment recovery. This allows for greater flex-

by-product of the current recovery. This is particularly significant since such a continuing trend will strengthen the continuity and profitability of thousands of businesses that were committed to growth at any price before the cold shock of financial collapse threatened in the late summer of 2008.

This evolution bodes well for the re-emergence of America's industrial base and the effectiveness of a strengthened service sector. With lower cost per unit, America's fast-growing export sector will be greatly enhanced. Together with highly recognized brand-name identity and well-deserved quality standards, both foreign and domestic buyers will be increasingly attracted to "Buy American."

But, as in every major evolution, there are winners and losers. Those benefiting mightily are the providers of technology for the back office, as well as the shop floor. This has gotten the tech manufacturers off to a jump start this year. On the other hand, the hundreds of thousands of jobs that normally accompanied even a moderate recovery are the scarcest they have ever been at this stage of any previous economic comeback.

Only about two million plus jobs for those personnel technologically expert are going begging for lack of accomplished applicants.

To even keep up with the necessary absorption utilization of the current employment level, at least 250,000 new monthly job openings are needed. At the present economic momentum, slowed by the shrinkage of construction and automotive manufacturing, etc., it's unlikely that the percentage of unemployed will decline appreciably before the November mid-term elections.

With the vast majority of the 65% of a total employment pool of 158 million working for non-corporate independent businesses, little job absorption is expected by these entities, and this already oversized backlog of job seekers is expected to expand this summer as high school and college graduates are expected to join their ranks. ■

*To stay up to date with my daily blogging, be sure to log on to my hyperlink at [www.theworldreport.org](http://www.theworldreport.org) and then click on "Morrie's page," announced in the middle of the World Report website. Your recommendation for my blog, as well as the individual columns will be much appreciated.*

**Manufacturing has been flexing its flaccid muscles for the past consecutive 10 months, with new orders and increased export activity providing an orderly growth pattern within the confines of an expanding demand economy.**

leading utilizer of sun power in the world today.

Nobody questions the fact that the acknowledged controller of the solar system, the sun, contains unlimited power; however, its effective harnessing is currently being debated.

Cost-effective production of solar panels, inhospitable climates, and support of utilities and the public are hurdles that have to be overcome and are now being dealt with. As usual, Congress has gotten way ahead of itself by forcing the issue with utilities in legislating a demand of 20% solar power of total utility usage by 2020.

To expedite this process, the Internal Revenue Service, most of America's electric utilities and even some states have kicked in with attractive subsidies to give solar power a massive sendoff. This expedient has not, as yet, had the same empowering effect as the failed ethanol experiment had on the oil derivative sector.

Since the current Administration has put renewable energy — especially solar — on its top priority list, you can be sure that Obama & Company will go all out to make solar breakthrough a certainty during the four-year term that the President is now serving.

### Record corporate profits cloak small business survival mode

Corporate publicly-listed companies are turning in smashing profit performances, while thousands of small businesses are pursuing an employment cutback mode while struggling for profitable survival. This is due to an increasingly difficult business climate, partially caused by increasing government interference, at national and state levels.

This schism between publicly-

ability in employee cutbacks and capital budgets to enhance overall productivity.

The large corporations have generated amazing results in profitability and monetary retention since hitting their low point in March 2009. They are aggressively hitting their stride, although still 24% below their 2007 peak.

However, privately-owned small businesses, which historically have generated 65% of America's 158 million potential employment, have been much more stringent in holding back on personnel rehires. This practically guarantees that the percentage of unemployed will stay in double digits when considering new entries into the workforce, and greater dependence on part-time employees. Although large corporations are substantially increasing their capital budgets to become more automated and mechanized, their very size and diversity make them greater candidates for adding to their workforces.

But all types of small businesses, which are wary of the extent of the recovery and further government interference, cannot afford further worker add-ons if they are to survive profitably during the remainder of 2010.

This likely means that other than urgent attrition replacement, most of the new rehires will have to come from the large corporate sector, which will offer only limited opportunities to the huge bulk of unemployed, coagulating on the sidelines.

### Productivity becomes hallmark of U.S. business and industry

As the U.S. economy extricates itself from the entanglements of the "Great Recession," productivity is becoming an increasingly valuable

## News in brief

### EMCOR subsidiary awarded contract at LaGuardia Airport

NORWALK, CONN. — EMCOR Group, Inc.'s Heritage Mechanical Services, Inc. has been awarded a contract for the installation of storm water pumps at LaGuardia International Airport in Flushing, New York. LaGuardia is one of New York's two major airports and one of the busiest airports in the United States.

Heritage Mechanical Services will be the prime contractor for this project. It will be responsible for all aspects of work related to the replacement of two existing high capacity storm water pumps that have been in service for 40 years within a system of pump houses, pumping storm water that collects within the airport area during major rain storms, into nearby Bowery Bay. The replacement pumps will be high horsepower, high voltage submersible pumps, each capable of pumping 33,000 gallons per minute.

For info, [www.emcorgroup.com](http://www.emcorgroup.com).

### Triangle Tube provides online training registration

BLACKWOOD, N.J. — Triangle Tube, a leader in high efficiency boilers and



hot water heating systems, announced the availability of online product training registration. The ability to select and register for courses online makes the process extremely efficient.

Triangle Tube has now implemented the industry's most efficient training registration process. Registrants can now select course locations and dates on-line, register, and pay the tuition all in one transaction. Registration is confirmed immediately via email. The event can be added instantly to the registrant's Outlook calendar, and customized directions to the training locations are also available.

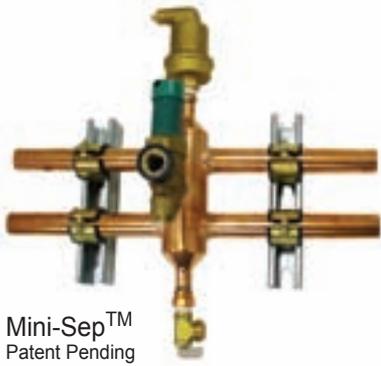
Triangle Tube has recently opened a training center in Denver, in addition to the centers in Blackwood, N.J. and Toronto, Ontario, Canada.

Convenient scheduling is provided with over 45 training events each year. Class size is limited to ensure that any questions can be addressed.

For more information, visit [www.triangletube.com](http://www.triangletube.com).

# Innovative, compact piping solutions with PHP hydraulic separators

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Patent Pending

# Smaller companies get their props

**R**unning lean and more efficient. You could say that is the motto for most PHC companies surviving in this economy — from the top mechanical firms to the smaller plumbing service and repair shops.

This month, *Phc News* identifies the top 20 PHC companies with

Peekskill, N.Y., took top honors in the “Top 20 Under 20.” The company was founded in 1959 by Frank Calcaterra and Lindy Lindenbaum as a sister service company to their existing installation company. It currently provides residential plumbing, heating and air conditioning service and



Frank & Lindy Plumbing & Heating Service Co. ranks #1 on the *Phc News*' 2010 Top 20 Under 20 listing.

under 20 employees. It is a nice way for some of the smaller companies across the country to be recognized. The results were compiled based on voluntary results.

Frank & Lindy Home Services,



Exemplifying good customer service practices always wins out.

replacement. In the late 1980s, Lindy's son, Bruce, took over the company. Bill Raymond became a partner in 1995. The company joined the Nexstar® Network in 1996, with Bill Raymond a master trainer with Nexstar® and former chairman of the Board of Directors. *Phc News* recently spoke to Bill Raymond about the company's business.

**How has the economy affected your business?**

The economy has had a significant impact on our business. 2009 was especially challenging. The “new” spending/buying behavior of our customer base has significantly reduced our sales volume. We have attacked

the challenge two ways. We increased our customer service and sales training to maximize opportunities. In addition, we combed through our operating costs and reduced them significantly. We reviewed every single line item on our P&L statement. Bottom line is we have had to become more aggressive to drive revenue and manage costs.

**Can you offer some business advice to other contractors?**

Right size your business quickly to the current revenue — hoping sales will return is not a good strategy! Do what you can to drive revenue by upgrading your staff and training and coaching. Consider joining an affinity group (like Nexstar® Network) to gain access to vital business tools and coaches along with the ability to network with other contractors going through similar challenges.

**How do you run lean and more efficient?**

We run lean by keeping our overhead low. We have reduced our staff (office and field) and now have people wearing multiple hats. We have reduced our marketing expense and are focusing primarily on our existing customer base. In addition, we do our best to maximize efficiency through preparation. We work hard to be sure we have everything we need for a job — information and materials — to minimize call backs and jobs that run over.

**What they're saying**

To gauge just how hard contractors are working these days, here are some thoughts from some of the Top 20 Under 20.

- “We are seeing decreased custom homes, more competitive pricing, clients taking longer to pay bills and a decreased work force.” — James Arnold, Arnolds Plumbing and Heating, West Long Branch, NJ.

- “The economy has made it harder to find an HVAC contractor for combined bids.” — James Fye, A-Able Plumbing, Inc., Broadway Va.

- “The economy has caused us to become more efficient. The keys to our success has been treating our employees very well.” — Ralph Burtis, R L Burtis Enterprises, Inc., Lynbrook, N.Y.

- “Our sales are down, but our advertising is up. The keys to our success is knowing numbers and maintaining our service call count.” — Frankey Grayton, Grayton Plumbing, Washington, DC.

- “We have found less quality bidding opportunities. The long-term outlook is our key to success.” — Carl Czerwonka, Carls Plumbing Services Inc., Milwaukee.

Note: The information for this listing was based on voluntary results. If your company is not listed and you feel it should be, contact editor John Mesenbrink at editor@phcnews.com.

**COMPANY**

**City, State**

\$2-\$3 million+  
\$1 million - \$2 million+

1. Frank & Lindy Plbg. & Htg. Svc. Co. ...Peekskill, NY
2. Mid City Plumbing Inc. ....Franklin Park, IL
3. Harkins Mech. Construction Inc.. .Lansdowne, PA
4. Aqua Plumbing.....Crete, NE
5. Herrin Plumbing Co. Inc. ....Dacula, GA
6. Pepe Plbg. & Htg. Co.....Hasbrouck Heights, NJ
7. Bienvenu Brothers Plumbing.....Metairie, LA
8. Grayton Plumbing.....Washington, DC
9. A-Able Plumbing, Inc. ....Broadway, VA
10. CDJ Electric Plbg. & Htg. ....Britton, SD

**COMPANY**

**City, State**

\$600,000 - \$1 million

11. Frey Heating & Plumbing .....Franklin, NJ
12. Jon's Plbg. & Htg. Inc.....Mount Vernon, Ohio
13. Arnolds Plbg. & Htg. ....West Long Branch, NJ
14. Climate-Tech Inc. ....North Ridgeville, Ohio
15. Carls Plumbing Services Inc.....Milwaukee, WI
16. Ack-Temp Mech. Svs. ....Lake Zurich, IL
17. Thomas' Plbg. Svs. ....Commerce Township, MI
18. K & B Plbg. & Htg. ....Cortland, NY
19. R L Burtis Enterprises Inc. ....Lynbrook, NY
20. Park Plbg. and Htg.....Harrison, NY

**1. Frank & Lindy Home Services**  
 Bill Raymond, Vice President  
 2 John Walsh Blvd  
 Peekskill, NY 10566  
 www.frankandlindy.com  
 Employees — 16

**2. Mid City Plumbing Inc.**  
 Mario Morrone, President  
 321 S County Line Road  
 Franklin Park, IL 60131-1022  
 www.midcityplumbinginc.com  
 Employees — 18

**3. Harkins Mech. Construction Inc.**  
 John Harkins, President  
 130 E. Baltimore Ave.  
 Landsdowne, PA 19050-0206  
 484-461-3000  
 Employees — 3

**4. Aqua Plumbing**  
 Mitch Martin, President  
 1025 W 10th Street  
 Crete, NE 68333-2631  
 402-826-2101  
 Employees — 6

**5. Herrin Plumbing Co. Inc.**  
 Jimmy Herrin, President  
 360 Franklin Drive  
 Dacula, GA 30019-3434  
 www.herrinplumbing.com  
 Employees — 15

**6. Pepe Plumbing & Heating**  
 Garrett Pepe, Owner  
 171 Boulevard  
 Hasbrouck Heights, NJ 07604  
 www.pepeplumbinginc.com  
 Employees — 12

**7. Bienvenu Brothers Plumbing**  
 Louis Bienvenu, President  
 212 Elmeer Ave.  
 Metairie, LA 70005-3328  
 504-835-7783  
 Employees — 14

**8. Grayton Plumbing**  
 Frankey Grayton  
 15 O St SW.  
 Washington, DC 20024-4105  
 www.graytonplumbing.com  
 Employees — 15

**9. A-Able Plumbing, Inc.**  
 James Fye, Owner  
 320 Shenandaoh Ave.  
 Broadway, VA 22815  
 www.aableplumbinginc.com  
 Employees — 9

**10. CDJ Electric Plg. & Htg.**  
 Craig Teveldal, Owner  
 11059 SD Highway 27  
 Britton, SD 57430-5720  
 Employees — 6

**11. Frey Heating & Plumbing**  
 Richard Russinko, Owner  
 418 State Rt 23 Ste A  
 Franklin, NJ 07416-2129  
 www.freyheatingndplumbing.com  
 Employees — 7

**12. Jon's Plbg. & Htg. Inc.**  
 Jon Sells, President  
 14580 Wooster Rd.  
 Mount Vernon, Ohio 43050-9774  
 Employees — 7

**13. Arnolds Plumbing & Heating**  
 James Arnold, Owner  
 8 Wall Street  
 West Long Branch, NJ 07764  
 732-222-6232  
 Employees — 4

**14. Climate-Tech Inc.**  
 John Dubecky, Owner  
 7900 Root Rd. Ste A  
 North Ridgeville, Ohio 44039-4086  
 www.climate-tech.com  
 Employees — 9

**15. Carls Plumbing Services Inc.**  
 Carl Czerwonka, President  
 1756 S 56th St.  
 Milwaukee, WI 53214-5281  
 www.carlsplumbing.com  
 Employees — 6

**16. Ack-Temp Mech. Service**  
 Russell Ackerman, Owner  
 805 Oakwood Rd. Ste B  
 Lake Zurich, IL 60047-1551  
 www.acktemp.com  
 Employees — 4

**17. Thomas' Plumbing Services**  
 Thomas Bargone, President  
 3050 Union Lake Rd. #8F  
 Commerce Township, MI 48382  
 www.thomasplumbing.biz  
 Employees — 3

**18. K & B Plumbing & Heating**  
 Mark Baranello, Owner  
 62 Madison St.  
 Cortland, NY 13045-1702  
 607-756-7077  
 Employees — 4

**19. R L Burtis Enterprises Inc.**  
 Ralph Burtis, President  
 PO Box 485  
 Lynbrook, NY 11563-0485  
 516-872-4250  
 Employees — 4

**20. Park Plumbing & Heating**  
 Anthony Filice, President  
 PO Box 126  
 Harrison, NY 10528-0126  
 Employees — 3

**Revenue spent by category**

*Based on voluntary responses*

Rank	Plumbing	Revenue
1.	Frank & Lindy Services	\$1,500,000
2.	Herrin Plumbing Company Inc.	\$1,420,000
3.	Bienvenu Brothers Plumbing	\$1,318,467
4.	Grayton Plumbing	\$1,082,000
5.	Pepe Plumbing & Heating Co.	\$1,000,000

Rank	Hydronics	Revenue
1.	Frank & Lindy Services	\$600,000
1.	Aqua Plumbing	\$600,000
3.	Pepe Plumbing & Heating Co.	\$300,000
4.	R L Burtis Enterprises Inc.	\$241,598
5.	CDJ Electric Plumbing & Heating	\$150,000

Rank	Piping	Revenue
1.	Harkins Mech. Construction Inc.	\$2,300,000
2.	A-Able Plumbing, Inc.	\$500,000
3.	Pepe Plumbing & Heating Co.	\$100,000
4.	Grayton Plumbing	\$93,000

## Contractors logging on to social networking sites as business enhancement tool

Within the span of about 20 years, the Internet has gone from a curiosity and scientific tool to a necessity used by billions around the globe. It has become indispensable to businesses everywhere, and every day the Net surges with staggering amounts of information.

Not surprisingly, the 2010 *Phc News* Internet Usage Survey revealed most contractors log on to the Internet each day. They are comfortable making purchases over the Net, and use it to buy products from wholesalers. They find it is a useful place to obtain training for their employees, and much more.

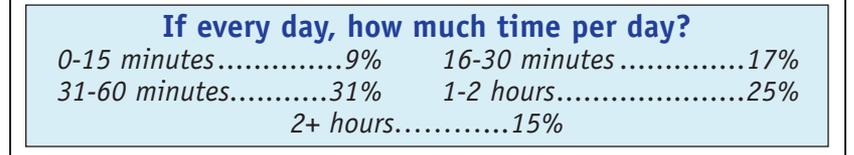
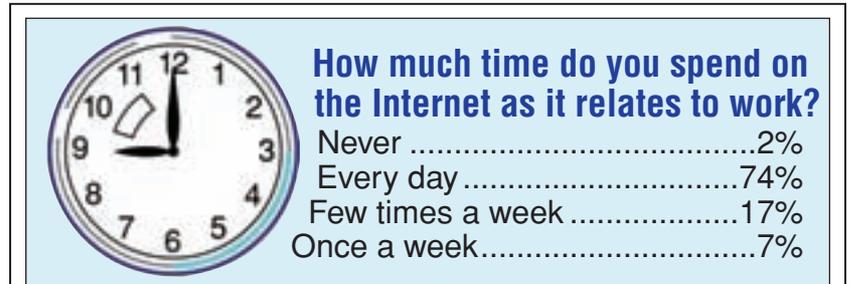
One of its strongest features of the Internet is social networking sites



that allow users to stay connected 24 hours a day, sharing information, ranging from pets' birthdays to life's milestones. Critics renounce social networking as a dangerous waste of time, while adherents claim it as the



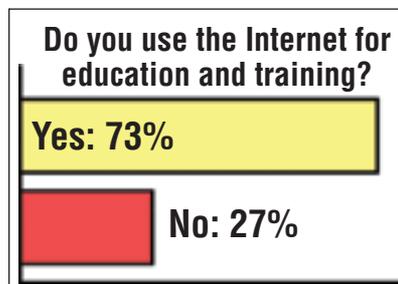
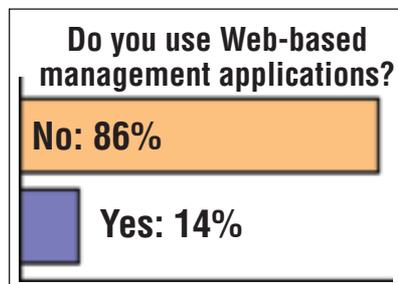
Social media tools are gaining in popularity among contractors, with a significant number making plans to begin using them soon.



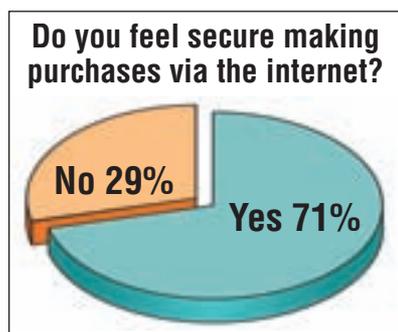
Most respondents use the Internet about an hour a day.



Trade publications remain a favorite means of obtaining industry news and information about products.



Relatively few contractors are attracted to Web-based management tools, although most find it useful to help educate and train employees.



Purchasing over the Internet has become commonplace, and most respondents find it a useful, safe way to purchase products.

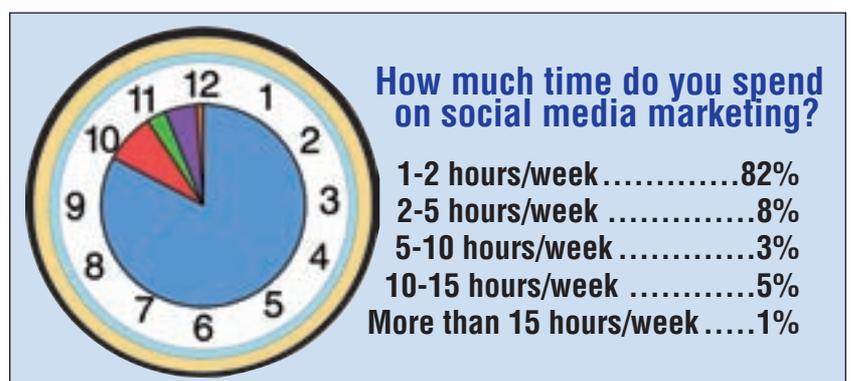
next phase in human social development. As with all social experiments, the real ramifications eventually will sort themselves out.

Beyond the obvious attraction of social networking sites for connectiveness, however, is their powerful potential as business tools, and professionals are beginning to pick up on this potential.

As part of the Internet Usage Survey we included questions about how contractors use social networking sites, and some surprising results came back.

First, a significant and growing number of contractors find social media a useful tool to build relationships with their customers, increase

*(Turn to Social... page 44.)*



Contractors are becoming aware that social media networks can be a valuable means generating new customers and reaching out to current customers.

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With LavSafe, there's never a need to install a separate thermostatic valve below the counter because ASSE 1070 protection is built inside the faucet itself. That reduces installation time by as much as 50%! And LavSafe's above-counter accessibility makes maintenance and limit-stop adjustment fast and easy. Say goodbye to struggling in tight, dark and hard-to-reach spaces. LavSafe protects public restrooms as referenced in the Uniform and International Plumbing Codes and meets the most stringent lead free laws. For retrofit or new construction, install LavSafe for the smart combination of safety, simplicity and style.



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Get the inside story at [LavSafe.com](http://LavSafe.com)

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## Social networking sites becoming popular business tool

(Continued from page 42.) awareness of their “brands,” plus they see it as a handy means of finding qualified leads.

Second, the bulk of contractors that use social media marketing spend at least an hour a week on it. They find it a handy place to announce new products and brands and improve customer service. Social media can stand in for the busy contractor whose day already is “programmed up” — it increases the contractor’s presence in the community while allowing him to take care of business in the field. This is a bonus for smaller busi-

nesses — the largest group of respondents are shops with one to five on the job.

Contractors who use social media like the capacity to provide links to their websites or manufacturers’ sites, as well.

The social media site of choice is Facebook®, probably because it is the most popular site for all forms of connectedness. While users log on to share information such as childrens’ birthdays and class reunions, they also can discover what hot new products contractors are offering for installation in that bathroom renovation they’ve been



### How does/did social media impact your business?

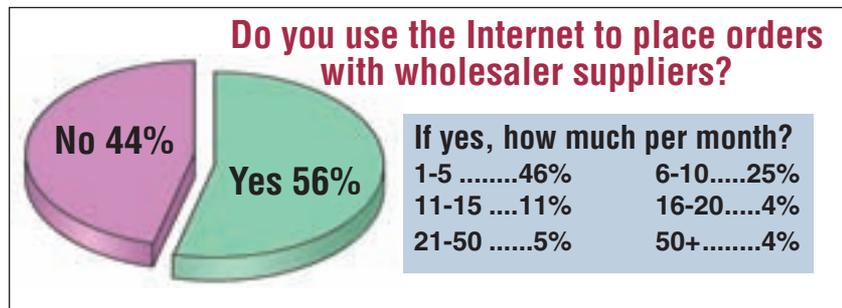
- Increased traffic to the website .....57%
- Improved rankings in search engines ....41%
- Enhanced customer service & support ...43%
- Helped generate business leads .....65%
- Reduced overall marketing expenses .....28%

Links to their websites are a big attraction of social media for users, who see it as a means to move closer to the top of search engines.

planning.

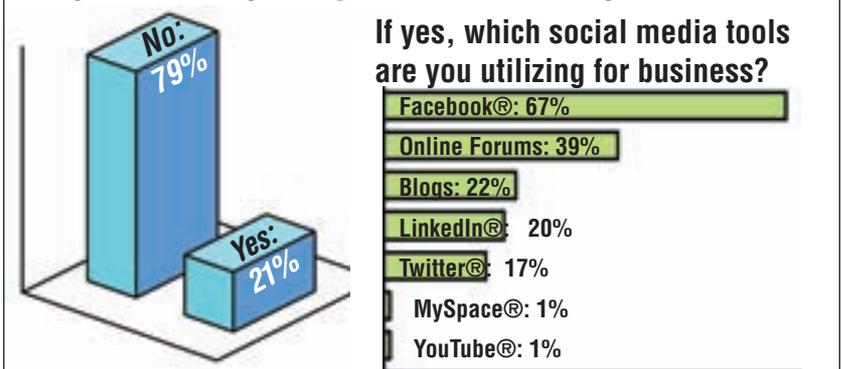
When referring to respondents, we say “him” because a full 93% of the contractors who responded to the

survey are male. The largest age category of respondents are more than 56 years old as well, proving old dogs can learn new tricks. ■



More than half of all contractors now place orders to wholesalers via the Internet.

### Are you currently using social media for your business?



Among contractors who use social networking sites as business tools, Facebook is the overwhelming favorite.

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



**New!**

**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:  
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- 80 GALLON STORAGE CAPACITY
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- LOW STAND-BY LOSSES THROUGH GOOD INSULATION





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# INDUSTRY NEWS

## OBITUARY

### Dick Burke, longtime Weldbend executive

LOUISVILLE, KY. — Richard Thomas (Dick) Burke, 86, passed away May 28 at home. He was born in January 13, 1924 in Louisville, Ky.

Burke graduated from Louisville's St. Xavier High School in 1942, attended Massachusetts Institute of Technology and enlisted in the Army Air Corps (United States Air Force) as a second lieutenant serving as a navigator on a B-29 bomber.

Burke was the vice president of public relations for Weldbend Corporation of Chicago until the time of his death. He was also a long-time employee of Tube Turns Co. of Louisville and spent several years with Louisville Trust Bank.

Burke is survived by his wife, Gwendolyn Young Burke, whom he married 55 years ago; sons Richard Thomas (Toby) Burke Jr. (Ann) and David Young Burke (Virginia); daughters Gwendolyn Kimbrough Burke and Sarah Cornelia Burke Harris (Terry); seven grandchildren; and a great-granddaughter.

A funeral Mass was celebrated at St. Frances of Rome Church in Louisville, and burial was at Cave Hill Cemetery.

Burke was a treasured member of the PHCP/PVF industry for many years. TMB Publishing's Tom Brown Jr. said, "Dick was a true gentleman. I always enjoyed his warm smile and the Irish twinkle in his eyes. We met some 30 years ago when he was with Tube Turns, and I was delighted to continue that relationship when he joined Weldbend. Dick had many friends in this industry and he will be sorely missed."

### Get the tools to electrify your business at CONNECT 2010

The Quality Service Contractors and the Plumbing-Heating-Cooling Contractors-National Association will join forces Oct. 27-30 at the Paris Hotel Las Vegas for CONNECT 2010, the only national event for the p-h-c industry.

The event will offer plumbing and HVACR service and repair contractors educational and networking opportunities. The QSC portion of the meeting will offer several sessions on using the Internet to promote and build your business. Other seminars concentrate on topics like marketing and selling strategies, social media, taxes, workforce training, and customer service.

Keynote speakers will be best-selling author Ross Shafer on "Is Your Business Staying Relevant?" and Keni Thomas of "Blackhawk Down" fame on "Train as You Fight, Fight as You Train."

A one-day Product and Technology Showcase will allow participants to meet one-on-one with exhibitors, explore the latest industry trends, view product demonstrations and participate in learning labs.

For more information or to register, visit [www.phcweb.org/connect](http://www.phcweb.org/connect), e-mail [Connect2010@naphcc.org](mailto:Connect2010@naphcc.org), or call 800/533-7694.

Versatility comes in a Variety of Forms



American Standard® state-of-the-art Selectronic® proximity products. These stylish faucets, flush valves and urinals are engineered to save water, energy and money, and are ideal for "touch-free" applications that call for hygiene, high performance and low maintenance. What's more, they're about the most cost-effective proximity products to install, maintain and inventory. It's simple; one sensor for all of the products.

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## A. O. Smith Voltex™ Hybrid Electric Heat Pump Water Heater

Voltex™ from A. O. Smith is the latest advancement in electric water heating. The hybrid electric design integrates heat pump technology to produce a product that is twice as efficient as a standard electric water heater. The Voltex pulls heat from the surrounding air and deposits it into the 80-gallon storage tank, allowing the heater to operate in the most efficient mode. With an Energy Factor of 2.3, the Voltex is ENERGY STAR® qualified and tax credit eligible.

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Innovation has a name.

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# Pro380-Series

## Pro380

24" x 24"

Integrated cord seal technology



US Patent #s  
7,520,736 &  
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41 Gallons

Same large capacity in a shallow-system design!  
Perfect for bedrock or difficult soil conditions.



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# Water conservation warrants attention in wake of Gulf's oil rig explosion

*The first step in saving water is to install eco-friendly, high efficient plumbing products*

The explosion of the BP Deepwater Horizon oil rig in the Gulf is a catastrophe affecting sea life, businesses, among other things, and alerts us all of the importance of saving water. Many water experts state that clean, fresh water is becoming limited, and it is essential for commercial and residential establishments to place a higher priority on water conservation initiatives.

Subsequently, the U.S. will continue to approach a water crisis if the country does not adopt better behavior in reducing daily water usage. As modern plumbing technology allows for significant water

low-flow toilets, faucets and showerheads under the WaterSense® Program can save 30,000 gallons per year — which is enough to supply a year of drinking water for 150 neighbors. The EPA also acknowledges that if every American home installed a WaterSense labeled bathroom sink faucet or faucet accessories, our nation could save more than \$350 million in water utility bills, over \$600 million in energy costs (for heating water), and 60-plus billion gallons of water per year.

National plumbing manufacturer — Gerber Plumbing Fixtures LLC offers bathroom faucets that pro-

faucets, High Efficiency Toilets (HETs) utilize only 1.28 gallons of water or less per flush. Water conserving toilets should replace older models as today's marketplace has a plethora of HETs from dual flush toilets to pressure-assisted models.

HETs, as stated, can basically be divided into two camps. Pressure-assist models utilize the pressure in the existing water line to provide a more forceful flush while using less water. Dual-flush models work with gravity, just like most typical residential toilets. However, dual-flush models offer the user a choice of two flush levels, a full 1.6-gallon flush (like standard toilets) and a "short-flush" of 1.1 gallons. The user then chooses the appropriate flush for his or her needs. The EPA asserts that over the course of a day, a 1.6/1.1 dual flush HET will use an average of less than 1.28 gallons per flush.

Many HET models use as little as 1.1 or 1.0 gallons per flush. For instance, Gerber's Ultra Flush 1.1™ gpf HET reduces water to 1.1 gallons per flush. In addition, the new and revolutionary Avalanche™ 1.28 Leak Sentry (LS) gravity toilet by Gerber features a reliable Fluidmaster® Leak Sentry™ Pro Fill valve that eliminates toilet run-on when not in use, thereby saving additional water.

Though it is difficult to quantify exactly how much a "typical" homeowner would save in utilities, an HET that uses an average of 1.1 gallons per flush can reasonably save about 1,000 gallons per year per user compared to a standard 1.6-gallon toilet, and almost 4,500 gallons per year per user compared to a 3.5-gallon toilet.

The WaterSense label provides an easy way to identify HETs. Knowledgeable contractors will be well-informed as to which products have been certified by an independent third party and are often eligible for considerable rebates, offsetting the cost of replacement.



These rebates coupled with annual savings on a homeowner's water bill quickly add up to thousands of dollars in savings over the life of the fixture. Builders and plumbing contractors who participate in "green" building programs, such as the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) and The Metropolitan Water District of Southern California's California Friendly Model Home program install HETs to accumulate water-efficiency credits or to comply with program requirements.



*The new and revolutionary Avalanche™ 1.28 Leak Sentry (LS) gravity toilet by Gerber features a reliable Fluidmaster® Leak Sentry™ Pro Fill valve that eliminates toilet run-on when not in use, thereby saving additional water.*

conservation, today, more than ever, it is imperative for plumbing contractors to understand and to educate customers on the value of saving the Earth's most precious resource.

This notion, in conjunction with the recent Gulf tragedy, alerts us of the growing importance of preserving clean water, which includes best practices and the installation of low-flow plumbing products like toilets, accounting for most water consumption in the home.

According to the Environmental Protection Agency (EPA), the average household that installs water efficient plumbing products such as

vide homeowners with both substantial water savings and top performance. According to Gerber's vice president of marketing, Kevin McJoynt, "No loss of water pressure is evident with our low flow faucets. That's key for customers who still want a full-force washing experience."

The latest bathroom faucets come with water-saving, low-flow aerators that bring water flow down to just 1.5 gallons per minute, while still providing ample pressure. This flow reduction not only saves water, but it is achieved without compromising product performance. In tandem with low-flow



*The latest bathroom faucets come with water-saving, low-flow aerators that bring water flow down to just 1.5 gallons per minute.*

It is important to note that there are some earlier models that came out in the 1990s were not performing as well as they should. Today's HETs should not need to be flushed more than once to do their job.

"And above all, they should flush quietly," says McJoynt from Gerber.

To learn more about the EPA WaterSense Program, visit [www.epa.gov/WaterSense/pp/bathroom\\_faucets.htm](http://www.epa.gov/WaterSense/pp/bathroom_faucets.htm).

For more information about Gerber Plumbing Fixtures LLC, visit [www.gerberonline.com](http://www.gerberonline.com). ■

**Viega's ProPress® system is the fastest, most reliable way to join metal piping and get you back on your mission.**

When lives are on the line, Viega's ProPress system will get your project up and running. That's why government agencies have entrusted their piping systems to Viega ProPress. With Viega's patented Smart Connect® feature you can make connections in less than seven seconds. During pressure testing, water flows past the sealing element, indicating an unpressed fitting.

***ProPress features and benefits:***

- Make connections in 4 to 7 seconds on sizes 1/2" to 4".
- Achieve a consistent, strong, reliable, air/water-tight seal.
- No need for cumbersome equipment such as tanks and torches and no need for thread cutters, solder and flux.
- ProPress meets the most rigorous testing codes and standards in North America.
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# Watts Radiant: Positioning PEX & radiant products toward the future

**P**hc News' chief editor recently had the pleasure to visit the headquarters for Watts Radiant in Springfield, Mo. There he was treated to a facility tour, some Watts training flavor and networking with some of Watts' knowledgeable executives. The following is an exclusive Q&A with John Kolson, vice president and general manager for Watts Radiant and John Sweaney, hydronic product manager.

**Watts has experienced a management overhaul. Can you describe how that transition is going?**

**Kolson:** As many of you know, Mike and Dan Chiles, founders of Heatway, Watts Radiants' predecessor, left during the middle of 2009.

**WattsRadiant™**  
Floor Heating & Snow Melting

A Watts Water Technologies Company

Our transition into the rest of Watts Water Technologies is going quite well.

During the past year, we've developed a five year strategic vision, identified and are actively working on implementing major initiatives in the areas of continuous improvement, business development and enhanced new product offerings.

We're aligning ourselves with our sister plant, Dormont Manufacturing, near Pittsburgh, along with key

ties with shared service departments located at our corporate headquarters in North Andover Mass.

We've established priorities in implementing lean manufacturing, completing Six Sigma training, recognizing much needed cost reductions, improving our management processes, obtaining ISO certification and evaluating, ranking and agreeing on what new products we should be working on and how they

should be positioned within the marketplace.

**What do you see as far as trends in the radiant industry?**

**Sweaney:** Certainly the trend over the last few years has been the transition to low temperature heat sources, primarily condensing boilers but also geothermal to a lesser extent. In the commercial arena, LEED specifications have helped increase the number of radiant heating and cooling projects. In general, contractors and building owners are really focused on environmentally friendly products that help maxi-



Phc News chief editor, John Mesenbrink (l), talks fittings, PEX and tools with Ron Raby of Watts Radiant.

## Introducing the RIDGID® SeeSnake® microDrain™ Inspection System

Who else was going to do it? The RIDGID® SeeSnake® microDrain™ Inspection System now lets you inspect traps and lines that could never be reached. It has the industry's most flexible cable *and* the smallest SeeSnake® camera head (7/8") we've ever offered. Learn more and schedule demonstrations: 800.769.7743 or [www.RIDGIDUpgrade.com](http://www.RIDGIDUpgrade.com).



Modular System



8.6 lb. Portable Design



Digital Recording



Flexible 30' Cable



mize energy efficiency. Radiant heating and cooling certainly does that directly through reduced energy usage and losses, as well as indirectly by improving the efficiency of heating/cooling sources such as condensing boilers, geothermal systems, solar systems, and chillers.

**What are your opinions of where you think the market is going?**

**Sweaney:** We feel that the economy and construction activity will continue to improve at a slow pace. Companies will be continue to be challenged to find areas of growth through innovative, added value products and services. High efficiency, high comfort technologies like radiant will gain some market share in commercial projects because of the focus on energy efficiency.

**Is Watts Radiant introducing any new products?**

**Sweaney:** We're very excited about FlexPlate, our flexible graphite heat transfer plate. FlexPlate utilizes a graphite material that is about 50% more conductive than aluminum, so you can lower

(Turn to Watts ... page 52.)

The Emerson logo is a trademark and service mark of Emerson Electric Co. ©2010, RIDGID, Inc.

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Professional Tools

DIAGNOSTICS PRESSING PIPE & TUBE TOOLS DRAIN MAINTENANCE POWER TOOLS

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# 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, Jr., Owner*



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Springfield, Missouri sets the backdrop for Watts Radiant's 143,000-sq.-ft. facility.



For larger remodels, Onix is the logical choice — it is the most flexible, durable radiant tubing in the industry today. Just as they have done in thousands of projects over the last 20 years, installers today find the flexibility of Onix to be a lifesaver in under-floor radiant projects.



Not only does training help educate contractors in proper design and installation techniques, it helps them do a better job of selling radiant systems.

## Watts Radiant: concentrating on high comfort technologies

*(Continued from page 50)*

water temperatures significantly and increase the efficiency of a condensing boiler or geothermal unit. Based on the feedback we've received from installers, FlexPlate installs about 40% faster than metal plates. We think it will really change the way installers look at under floor, above floor, wall and ceiling applications.

We've also added another condensing boiler panel and a wood boiler/geothermal panel with a boiler back up to our Hydronex line of mechanical panels. All of these panels offer contractors a factory-warranted product that helps make their job easier and more profitable.

We've got other new products that we'll be releasing in the future — stay tuned!

**Can you tell us a little about your existing line of products?**

**Sweaney:** With many residential project owners remodeling instead of building new, there are some great opportunities for electric products like HeatWeave and WarmWire, as well as Onix, our premium hydronic tubing.

Installers look to electric floor heating and snow melting products as another tool to help them sell systems and spread the word about the comfort of radiant heating. Electric radiant products make a lot of sense for smaller areas like bathrooms, or in geographical areas where electricity is inexpensive compared to other energy sources.

For larger remodels, Onix is the logical choice — it is the most flexible, durable radiant tubing in the industry today. Just as they have

done in thousands of projects over the last 20 years, installers today find the flexibility of Onix to be a lifesaver in under-floor radiant projects.

As more commercial, industrial, and institutional projects consider district-heating systems, the use of our insulated barrier PEX product, R-flex, continues to increase. The focus on reducing energy loss through buried piping is driving this growing market.

**With that, any new techniques to improve radiant installations?**

**Sweaney:** More contractors are looking at wall and ceiling applications with products like FlexPlate and Onix. Radiant walls and ceilings offer some great benefits like fast response, ease of retrofit, and they are unaffected by floor coverings.

**Can you briefly talk about training at Watts Radiant?**

**Sweaney:** We've always felt that giving contractors good technical information and training is one of the keys to growing the radiant industry. Not only does training help educate contractors in proper design and installation techniques, it helps them do a better job of selling radiant systems. We continue to train and educate contractors, distributors, and engineers in a variety of local, regional, and national locations, as well as through webinars.

**What other products does Watts Radiant manufacture?**

**Sweaney:** Watts is privileged to supply many OEM customers in the hydronic and plumbing markets, and we have significant manufacturing capabilities in several product areas here at Watts Radiant. ■

# Less Install Time. More Bottom Line.

Why fumble around installing a separate primary and backup sump pump? The new PHCC Pro Series, "Pair of Pumps" Combination System couples our energy efficient primary pump and battery backup pump into one powerful system! Plus, installation is easy; it comes pre-assembled, ready to drop in the pit, allowing you to install the system in 1/2 hour or less. This saves you time and allows for more installations improving your bottom line.

## Key Features:

- Model # PS-C33 pairs the top of the line S3033 1/3 HP sump pump with top of the line PHCC 2400 backup system
- Dual float switches provide dependable activation of each pump
- Unique monitoring controller sounds an alarm if maintenance is needed
- Available in three progressively larger sizes



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Stocked at hundreds of distributors nationwide, for a complete list please visit [www.stopflooding.com](http://www.stopflooding.com) or call 800-991-0466

# Smart hydronics helps to carry the torch for ‘Connies’

The once regal Super Constellation Starliner, the legendary luxury aircraft designed by Howard Hughes and built by Lockheed Martin, appears like an oversized model in a cavernous hangar at the Auburn-Lewiston airport in Maine. A team of experts, working

metal skeleton, lines of green primer now cover seams and rivet rows between aluminum panels. The engines, landing gear and tail rest in separate places nearby.

Unlike the rest of the plane, which will be restored to 1950s vintage, the cockpit will be fitted with modern

borne out as faster jet engine aircraft won public interest. Its departure marked the passing of a great era in aviation.

Lufthansa referred to its Starliner as the “Super Star.” It flew the longest-duration scheduled flight ever, a 23-hour-19-minute trip from London to San Francisco — a trip that jets cover in less than half the time.

The standard Starliner carried 86 passengers, but the swankier version carried just 30 high-flyers in supreme luxury, complete with partitioned sleepers, a lounge serving draft beer and mixed cocktails, in-flight entertainment and an onboard chef.

## Starliner’s mystique has a price tag

Lockheed built 44 Constellation Starliners (known as “Connies” among admirers), at its facility in Burbank, Calif., in the 1950s. Starliners last flew in the ’70s, but the iconic plane continued attracting fans. In the ’80s, Maurice Roundy, a 63-year-old pilot, aircraft mechanic and airfield manager in Auburn, Maine, bought three Starliners for their scrap value. He started rebuilding them, but after spending \$500,000 of his own money on the effort, he ran out of cash and filed for bankruptcy-court protection.

“I think the airplanes owned me,” Mr. Roundy told a local news re-

porter. He paid his debts by getting rid of the planes.

Lufthansa Technik plans to tour air shows with the refurbished plane. Passenger tickets for the vintage aircraft go for a premium. And for licensed pilots who want to fly it: sky’s the limit. The proceeds will go to Lufthansa’s charitable foundation, Deutsche Lufthansa Berlin-Stiftung.

## For the team: a European comfort solution

When the experts at manufacturer’s rep firm, Emerson Swan, and their wholesaler partner F. W. Webb, got wind of the project, they partnered with engineer Jeff Landwehr from Old Town, Maine-based Carpenter Associates to design a system that would hydronically heat the airplane hangar’s high-mass concrete floor.

“An airplane hangar is perhaps the ultimate use of radiant heat,” said Jim Simas, regional sales manager for Emerson Swan. “With giant, open areas, it’s no place for forced air heat; in the winter, BTUs would be flushed out fast with the opening of the big bay door. And even with the place buttoned-up, the guys working on the plane all day would have no floor-level heat.

The construction project began in 2008. According to Simas, the big hangar was divided into two main radiant zones and a much smaller one to serve a long, narrow snow-melt zone that extended six feet beyond the huge sliding doors of the building’s airplane-sized opening.

With the mechanical room placed in one corner of the building, it made sense to run a 1½-inch extended injection bridge to the manifold on the furthest side (with about *(Turn to Connies ... page 56.)*



Two Buderus gas-fired boilers feed 180°F water out to the manifolds. Return fluid temperatures typically reenter the primary/secondary piping at about 80°F.

like surgeons around a (radiantly-heated) operating table, are bringing it back to life.

Thanks to the dedication and resources of a Renaissance effort, the once-great airliner — left for dead and bleeding — will fly again.

The idea of restoring a Constellation entered the radar screen at Lufthansa Airlines around 2003. Ultimately, the German firm bought three of the last remaining airplanes, not a one of them in good condition. The purpose is to restore one, maybe two of the aircraft back into flying condition by cannibalizing parts from all three of them.

Though hundreds of Constellations were manufactured by Lockheed, only 44 of the magnificent Starliners — considered by some to be the grandfather of luxury air travel — were built.

On any given day for the past 18 months, with many more months to go, a team of restoration experts, many of them flown from Germany to Maine, are at work on the one plane in the middle of it all. The Starliner’s carcass rests on wooden risers in the center of the hangar. Initially stripped bare, down to its

gadgetry to allow the plane to be certified airworthy. Lufthansa experts say the avionics of the project alone will require 18,000 man hours. The guts of the plane and the 30,000 pieces of its skeleton have all been tagged and cataloged.

## Recreating an era

Lufthansa has a penchant for rebuilding old planes. And through the years the Lufthansa Technik division has proven that it can be profitable business. Pilots and aviation enthusiasts around the world are eager to pay large sums of money for new experiences aboard vintage planes, enough so that Lufthansa expects to recover its \$30+ million investment, once the plane is airworthy — in just six years.

The Starliner, introduced in 1956, was the last of many Constellation versions Lockheed built over a period of 16 years. Each had increasingly elaborate equipment such as autopilot systems, hydraulic pumps and windscreen defrosters.

The Constellation was the last, great prop-engine passenger plane to carry passengers across the Atlantic Ocean. Its ultimate demise was



The Super Constellation Starliner, the legendary luxury aircraft designed by Howard Hughes and built by Lockheed Martin, appears like an oversized model in a cavernous hangar at the Auburn-Lewiston airport in Maine.

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# Connies hangar gets hydronic help



Contractors pour the cement slab that covers the PEX tubing. Each of the two large manifolds for the main area supplies warmth to twenty-four 400-foot, 5/8-inch pex loops spaced on 18-inch centers in the main floor of the hangar.

(Continued from page 54.)

250-foot supply and return feeds), and a 50-foot, two-inch PEX line-set to feed the nearest manifold.

According to the chosen hydronic systems installer, Al Hill, Al Hill Plumbing, based in Sabattus, Maine, they used oxygen-barrier RadiantPEX tubing and stainless steel radiant manifolds manufactured by Watts Radiant. Hill, a British hydronics pro who made his way to Maine 27 years ago, was just the right guy for the job.

Each of the two large manifolds for the main area supplies warmth to twenty-four 400-foot, 5/8-inch PEX loops spaced on 18-inch centers in the main floor of the hangar. Spacing is snuggled closer at nine-inch centers near the exterior walls and the

snowmelt apron.

Two gas-fired boilers feed 180°F water out to the manifolds. Return fluid temperatures typically reenter the primary/secondary piping at about 80°F. “With return temperatures like that, each gallon delivers between about 40-50K BTUs,” said Simas.

“One design that was initially considered delivered a 20°F Delta T,” explained Simas. “But cost was the major obstacle to building the system to accomplish it. Our alternate plan — which brought the price of installation down substantially — won approval and worked marvelously through its first winter, even when ambient temps dipped well below zero.”

According to Simas, the initial design called for a greater number of pumps and massive, two-and-a-half inch copper lines suspended overhead to feed remote manifolds with a flow of 37½ gallons a minute each. That, for just half of the building. “The pumps for the initial plan needed to be large enough to move much larger fluid volumes up, and through 1,000 or more feet of large supply and return piping — plus all of the radiant heat tubing,” he said.

Ultimately, the cost of installation labor, hangers, lift rental, larger mechanical components, including the high horsepower, three-piece pumps, and giant copper “runway” (at \$18/ft.!) pushed the building owner’s decision toward Hill’s more reasonable approach. That was the genesis of the 100°F Delta T solution.

“The plan we settled on saved a huge amount of money on the cost of the system and in energy consumption as well,” said Hill. “The ‘extended injection bridge’ concept called for the mixing of fluid temperatures at the manifolds and outside the mechanical room.”

Three small, variable speed Taco pumps now play a critical role in running the system, transferring a huge amount of energy to each zone. “In essence, each of the variable DeltaT pumps acts like a mixing valve, blending 180°F water straight out of the boilers with cooler return water, out to the zones at about 120 degrees,” added Hill.

The Taco variable ΔT pump is the driver for the 180°F water and also performs a key role in protecting the boilers. The primary-secondary piping protects the boiler with sensors that stand sentry at the supply and return ports. Too much cold return water shuts off the injection pump, (Turn to Hydronic... page 58.)

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basements



cabins



tool sheds



vacation homes



Model 202



# Hydronic system allows flexibility

(Continued from page 56.)

allowing the boilers time to bring internal water volume up to temp.

As soon as it's available, higher temp fluids are then put to use to mix and blend outgoing temperatures for the radiant floor system.

Simas admits that this approach requires more time to bring fluid temps into operating temperature range but insures that the boilers aren't thermally shocked.

"We always use Taco equipment whenever we can," continued Hill.

On this job, half a dozen pumps drive the entire system. We also used Taco hydronic relays, flow checks and an expansion tank."

"Radiant is the only heat that allows such flexibility because the design temps are low and we take

advantage of the larger delta's to mix water," added Simas. "When combined with simple injection style controls, a system like this delivers modulated water temperatures to the radiant manifolds to prevent overheating. At the same time, it protects the boilers from thermal shock and flue gas condensation. It's a plan that worked especially well for Lufthansa and the Connie's project."

## In its wake

Lufthansa experts hope to finish the project by the end of 2010, with the flight tests and certification procedures taking place in the spring of 2011.

The project brought one of the world's largest airlines into a small community in Maine where it has had a substantial economic impact through contracts with local companies, jobs for local aircraft technicians and mechanics, and leaves a 27,000-square-foot, radiantly-heated hangar for future use.

When it's complete, the Connie will be flown to Germany, leaving a



Al Hill Plumbing technicians put the finishing touches on the concrete slab.

massive hangar that the airport can market for aircraft maintenance or refurbishing.

Airport managers in Auburn say the hangar is a state-of-the-art facility and, with the capacity to hold a Boeing 737, is the largest hangar in central Maine. With a real sense of excitement, they rewrote the airport's master plan in 2005, calling for an expansion of the runway by 2013 to attract passenger service.

Who could've guessed that an old plane, brought back from the dead, could make such a big impact internationally, and locally, too. In its wake will remain a fine facility to serve the community of Auburn, Maine. And whoever has the good fortune of working there, the miracle of modern hydronics will keep 'em comfy all winter long. ■

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How to Bring 19<sup>th</sup>-Century Heating Systems into the 21<sup>st</sup> Century (and save lots of green!)

By Dan Holohan

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Dan Holohan

Circle 40 on Reader Reply Card

# Choosing the appropriate actuator for a control valve

BY CHIKEZIE NWAHOA

A control valve is the final control element in any process system because it is the final element that ultimately manipulates the value of the variable in the control process (see fig 1). The control valve usually has a control linkage, which is known as an actuator. The actuator accepts a signal from an independent source and in response positions (opening or closing) the valve to the required or designed position. Valve actuators provide remote operation of control valves, which is very essential for increased working safety and environment. Actuators can be moved into position by either hydraulic, air/gas or electric signals. And, they are used to position a valve to either more closed, more open, fully closed or fully open. There are different types of control valve actuators, and they are classified according to the type of supply that is required for activation. They are: pneumatic valve actuators, electric valve actuators and hydraulic valve actuators.

**Pneumatic Valve Actuators:** This is a type of control valve actuator that can adjust the position of the valve by converting air pressure into rotary motion or linear motion. Rotary motion actuators are used on butterfly valves, plug valves and ball valves, and they position from open to closed by a 90-degree turn. Meanwhile, linear motion actuators are used on globe valves, diaphragm valves, pinch valves, angle valves and gate valves, and they employ a sliding stem that controls the position of the element (closure). Pneumatic valve actuators can be single-acting, in that air actuates the valve in one direction and a compressed spring actuates the valve in the other direction. Single-acting devices can be either reverse-acting (spring-to-extend) or direct-acting (spring-to-react). The operating force is generated from the pressure of the compressed air. Choosing between reverse-acting and direct-acting is dependent on the safety requirements (in an event of compressed supply air failure), response/activation time, air supply pressure, etc. For example, for safety reasons, steam valves must close on failure of air supply.

Pneumatic valve actuators have the advantage of simple construction, requiring little maintenance and quick valve response time to changes in the control signal.

**Electric Valve Actuators:** This is another type of valve actuators that is compact with a large stem thrust. They are usually used in systems where pneumatic supply is not needed or available. The electric valve actuator is more complex than the pneumatically operating valve actuator. When the control valves are spread out over large distances, as in the situation with pipelines, then an electric valve actuator should be chosen for purely economic reasons. This is because electrical energy is cheaper and easier to transport than instrument

air and hydraulic fluid. An electric valve actuator depends on an electrical power source for its signal, and in response to the signal automatically adjusts the valve to a desired position. It makes use of a single-phase or a three-phase AC/DC motor to move a combination of gears in order to produce the desired level of torque. Subsequently, the rotational motion is converted into a linear motion of the valve stem via a gear wheel and a worm transmission. Electric valve actuators are mostly used on linear motion valves, globe valves and gate valves. They also are allowed on quarter-turn valves — like butterfly valves, ball valves and other quarter valves. Linear electric valves are installed in systems where tight toler-

ances are required. While rotary electric valve actuators are suitable for use in packaging applications and electric power industries, etc., electric valve actuators have a disadvantage of valve response, which can be as low as 5 seconds/min — in some varying systems might be very slow.

**Hydraulic Valve Actuators:** Hydraulic valve actuators usually employ a simple design, with a minimum of mechanical parts. Hydraulic valve actuators convert fluid pressure into linear motion, rotary motion, or both. Like electric actuators, they are also used on both quarter-turn valves and linear valves. In the case of quarter-turn valves, the hydraulic fluid provides the thrust that is mechanically converted to rotary motion to adjust the valve. For linear valves, the pressure of the hydraulic fluid acts on the piston to provide the thrust in a linear motion, which is a good fit for gate or globe valves. Hydraulic valve  
(Turn to Choosing... page 64.)

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Circle 41 on Reader Reply Card



### LavSafe™ thermostatic faucets

New commercial and residential ASSE 1070 listed LavSafe™ thermostatic faucets feature an internal paraffin thermostat, which controls both temperature and pressure. With LavSafe™ there is no need to install a separate thermostatic valve under the sink because the tempering is done just inches from the user where it is most effective. **Watts.**

Circle 101 on Reader Reply Card

### Sump pump system

The Pro Pak 53 is a preassembled sump pump system complete with company's Model 53 primary pump and Model 507 backup pump. The Pro Pak offers extra protection when the primary pump fails due to power



outages with 7½ hours of continuous pumping on a fully charged battery. The Pro Pak 49 also available, featuring a Model 49 primary pump. A 3-year warranty is included on both systems. **Zoeller Pump Co.**

Circle 102 on Reader Reply Card

### Purge & Fill

A unique 7-in-1 valve assembly allows the user to simultaneously drain, flush and refill any hydronic



system. Eliminates six leak paths and saves nearly an hour of labor. **Webstone.**

Circle 103 on Reader Reply Card

## ★ Phc News product of the month ★



### The ALPHA revolutionizes circulators

With its permanent magnet motor design, this energy efficient circulator reduces power consumption by 50% or more. The unique patented AutoAdapt™ feature controls pump performance automatically within a defined performance range, ensuring the lowest possible energy consumption without sacrificing comfort. The newest innovation available is the ALPHA with a terminal box for conduit connection applications. Most pumps have only one option when it comes to their power connections. The ALPHA has two, expanding your installation opportunities. **Grundfos.**

Circle 100 on Reader Reply Card



### Expanded NeoTherm boiler line

Expanded boiler line features 80 to 850 MBH sizes and new volume water heater line with sizes from 150 to 500 MBH. The NeoTherm® is a fully packaged, 95% efficient condensing hydronic boiler with 5-to-1 turn-down. Zero clearance to combustibles and convenient top connections (horizontal or vertical direct vent) make it an excellent choice for tight installations. **LAARS.**

Circle 104 on Reader Reply Card

### Faucet aerators save water and energy

Changing faucet aerators is the most affordable component of a



water conservation program in commercial and institutional buildings as well as multi-family housing and residential buildings. Neoperl products are WaterSense listed, help save 30% or more and gain LEED points towards building certification. **Neoperl.**

Circle 105 on Reader Reply Card



### High efficiency toilet

H2Option, a new flushing innovation, is the first truly siphonic dual flush toilet, with strong push and pull action created by forceful but quiet jetted action under the rim. Using as little as 1.0 gallon of water on the low setting, H2Option scours the sides of the bowl to remove every last trace of paper and waste. **American Standard.**

Circle 106 on Reader Reply Card

### Wirsho hePEX™ Straight Lengths

Now contractors requiring an aesthetically pleasing straight run of pipe for hydronic distribution appli-

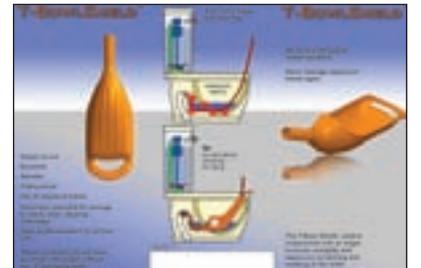


cations, such as near-boiler piping, risers, connections to fan coil units, radiators, baseboard heaters, VAV boxes, chilled beams and towel warmers, have the option to choose durable, cost-effective, corrosion-resistant PEX-a tubing. The straight lengths are available in 20-foot sections for 5/8", 3/4", 1", 1¼", 1½" and 2" sizes. **Uponor.**

Circle 107 on Reader Reply Card

### Toilet bowl protector

The T-BowlShield safeguards the toilet bowl and the siphon tube from careless use of the standard auger. The flexible, tapered, nose cone nestles easily in standard toilets, effectively "bridging" the throat of the



toilet and allowing a scratch free passage of the auger into the blocked area of the toilet. The two piece design comes with instructions on how to assemble the T-BowlShield. Rugged, reusable, and simple to use. Patent Pending. **Wooten Metal.**

Circle 108 on Reader Reply Card

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Circle 42 on Reader Reply Card



### New tankless line

EverHot® tankless water heaters offer energy efficiency in a compact but powerful package, with flow rates up to 9.4 gpm. Six models available (3 interior and 3 exterior) in natural or LP gas with maximum input ranges of 150,000 — 199,900 Btuh. Can be converted from residential to commercial. Control monitors and displays 17 diagnostic codes for trouble-shooting. Small footprint, wall mounting. **Bradford White.**

Circle 110 on Reader Reply Card

### CADDY® PYRAMID ST Series

Strut-based Thermoplastic Supports



utilize an engineered thermoplastic base with a UV stabilizer. They have a high load rating — up to 1,500 lbs — and provide uniform load distribution to help protect the roof membrane. **ERICO.**

Circle 111 on Reader Reply Card

### Water heater installation kits

Tankless water heater installation kits are used for sweat applications. Kits



feature a 1-piece, forged, full-port brass valve body that reduces connections and enhances longevity. Has self-seating O-ring seals on the inlet and outlet ports, a built-in port for the PR valve, and integrated drain valve with independent flow control. **Brass-Craft Manufacturing Co., a Masco Company.**

Circle 112 on Reader Reply Card

## ★ Phc News product of the month ★



### The HydroVantage™ flush valve

Designed to create energy during each flush cycle. As water passes through the valve, the turbine spins creating electrical energy which is then stored in a rechargeable cell. This stored energy then powers the electrical needs of the flush valve for subsequent flushes. It eliminates the need for external electrical power or battery replacement for 10+ years under normal operating conditions. The HydroVantage™ flush valve provides optimal energy efficiency, low maintenance and ease of installation compared to other available generator products. Environmental Trending™ along with 4.0 Sensor Technology™ continuously monitors ambient light levels and traffic patterns within the restroom eliminating false flushing while maximizing savings. **Zurn Engineered Water Solutions.**

Circle 109 on Reader Reply Card



### Electronic dry pipe accelerator

The VIZOR Accelerator is a fully supervised, self-contained, riser-mounted, quick-opening device that reduces the time required to operate a dry pipe system with the activation of one or more automatic sprinklers. All essential components are located inside its enclosure making the VIZOR Accelerator easy to install, set, and maintain. **Tyco Fire Suppression & Building Products.**

Circle 113 on Reader Reply Card

### Thermally actuated shut-off valves

FireBag is used to control the flow of natural, propane or butane gases. Many existing emergency gas shut-off devices require manual manip-



ulation — a poor solution in emergency fire situations. The FireBag provides a much better solution by automatically discontinuing the flow of gas when the ambient temperature reaches 100° C (212° F). With this device, gas is automatically discontinued in fire situations to avert fire escalation and potential gas explosions. **Assured Automation.**

Circle 114 on Reader Reply Card

### SolPak solar water heating

Company has added two new environmentally-conscious solar water heating solutions to its line of SolPak active solar water heating systems: tankless gas products (pictured) and Rheem Marathon™ storage tanks. With these additions, Rheem SolPak now provides contractors with an enhanced selection of energy-efficient solar options that can be tailored to any gas or electric job. **Rheem.**

Circle 115 on Reader Reply Card

### Air, dirt and hydraulic separator

The HYDROCAL™ combination air, dirt and hydraulic separator incorporates high performance air removal, high performance dirt removal and high performance hydraulic separation all in one device. The 3-in-1 functionality minimizes costs for systems requiring primary/secondary piping because there is no need to install separate air separators and/or dirt elimination devices. **Caleffi.**

Circle 116 on Reader Reply Card

### Corrugated stainless steel tubing

CounterStrike® corrugated stainless steel tubing (CSST) has received a PMG listing (PMG # 1058) from ICC Evaluation Service, Inc. (ICC-ES),



providing evidence that this CSST gas piping product (with special conductive jacket) meets code requirements for gas piping. Tests conducted by a leading independent lightning lab have shown that CounterStrike is approximately 5,000% more resistant to electrical arcing damage compared to standard CSST. **OmegaFlex, Inc.**

Circle 117 on Reader Reply Card



### Jetters

Eel Jet EJ1500 electric and EJ3000 gas jetters are professionally engineered to clean 1½"- 8" drain lines with power and portability for a fast blast through clogs. The new Eel Jet EJ1500 electric jetter cleans 1½"- 4" dia. drain lines with 1,500 PSI/1.7 GPM; 1.5 H.P., 15 amp motor; duplex pump w/pulsation; reel capacity 150 ft. of ¼" hose; pump/motor assembly removes in seconds for added portability; thermal relief valve and inlet shut-off valve. **Electric Eel Mfg. Co., Inc.**

Circle 119 on Reader Reply Card

### PVC/ ABS hand saw

The Milwaukee® PVC Saw features a tool free blade change to avoid downtime and increase efficiency in the field. Complete with rubber over

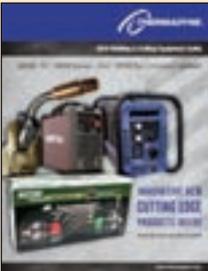


mold for comfort, the saw offers unmatched durability with a metal core body and clamshell handle design to prevent damage from abusive job site conditions. **Milwaukee Tools.**

Circle 120 on Reader Reply Card

### Welding, cutting guide

New *Welding and Cutting Equipment Guide* provides easy access to current information about oxy-fuel



welding and cutting torches and regulators, plasma arc cutting and welding systems, arc welding power supplies, hardfacing and

welding alloys, a wide array of manual and semi-automatic arc welding torches, tips and accessories, and high pressure gas control products. Easily find information about equipment from Victor®, Victor Specialty Products, Victor Medical, TurboTorch®, Tweco®, Tweco Robotics, Arcair®, Thermal Dynamics®, Thermal Dynamics Automation, Thermal® Arev and Stoodly®. Contact your local distributor and request Form 67-2836. **Thermadyne.**

Circle 121 on Reader Reply Card

## ★ Phc News tool of the month ★



### SeeSnake® LT1000 Laptop Interface

RIDGID® introduces the SeeSnake® LT1000 laptop interface, a flexible way to digitally record, monitor and manage drain footage when paired with a SeeSnake reel and PC laptop with SeeSnake HQ software installed. The LT1000 laptop interface gives users the efficiency of a laptop for managing drain footage in the field. The LT1000 laptop interface allows a user to complete tasks without transferring data between field devices and a PC, which reduces the amount of time users spend converting files. **RIDGID.**

Circle 118 on Reader Reply Card



### RSP1 Ratchet Shears

Reed Ratchet Shears with hardened steel blades are ideal for cutting plastic pipe. New RSP1 Ratchet Shears are also great for CPVC because of blade thinness and finish. RSP1 shears also cut PVDF well. The pointed blade in the one-hand RSP1 model helps start the cut in tough plastics such as CPVC, and helps avoid bounce in thin wall material. Blades on Reed ratchet shears can be sharpened or replaced, enhancing performance and saving money. These tools are not disposable. **Reed Mfg. Co.**

Circle 122 on Reader Reply Card

### Video inspection system

The new lightweight, Gen-Eye POD™ and MINI-POD™ combine camera,



reel, and monitor in an all-in-one package. You get a large 5.6" LCD color monitor protected by a padded case. Mounted on a flexible gooseneck that swivels to give you the best viewing angle. The full size Gen-Eye POD™ features a self-leveling camera and 200 ft. of Gel-Rod® for trouble-shooting 3" to 10" drain lines. The MINI-POD™ carries 125 ft. or 175 ft. of push rod and the color mini-camera is small enough to trouble shoot 2" to 4" lines. **General Pipe Cleaners, a division of General Wire Spring.**

Circle 123 on Reader Reply Card



### Track loaders

The PT-100G compact track loader boasts 99.9-hp and 310 lb-ft of torque with a narrow 6-ft profile and a low 14¾" ground clearance to maximize work in limited access areas. Posi-Track™ undercarriage and suspension gives the smoothest ride in the industry. Offers load-sensing infinitely variable low-flow auxiliary hydraulics, 2-speed transmission, auto-idle, creep mode, selectable from ISO to "H" pattern and adjustable loader/bucket sensitivity. On models equipped with heat or AC, a pressurized and sealed enclosed cab comes standard. **Terex.**

Circle 124 on Reader Reply Card

### Tube bending machines

The 2010 Elite Series of tube bending machines with capacities ranging from 1¼" to 10". Designed for tube



bending in automotive, aviation, HVAC, boiler, and general fabrication applications, the Elite Series offers a 50% reduction in set-up time, user-friendly features, extended service intervals and faster bending speeds. **Horn Machine Tools.**

Circle 125 on Reader Reply Card

### Coring systems

The new DD 350 (pictured) and DD 500 coring machines are equipped with innovative, water-cooled, high-frequency motors. De-



signed for the new DD generation of diamond coring systems, these powerful new motors are rated at 3600 and 5500 watts respectively in the DD 350 and DD 500. This 1000 Hertz high-frequency technology achieves higher performance and reduces weight and cuts maintenance costs as the motors are brushless. **Hilti.**

Circle 126 on Reader Reply Card

## Choosing the right actuator

(Continued from page 59.)

actuators are used particularly in situations where a large stem thrust is required such as the steam supply in turbines or the movement of large valves in chimney flues. In a situation where very large valves are to be actuated, it is often advisable to install the actuators on mechanical gearboxes in order to provide an increased output (torque). There are different types of hydraulic valve actuators that convert linear motion to rotary motion. For example, while diaphragm actuators are generally used with linear motion valves, they also can be used for rotary motion valves if they are outfitted with linear-to-rotary motion linkage. Likewise, lever and link actuators transfer the linear motion of a piston cylinder or diaphragm to rotary motion. Rack-and-pinion actuators transfer the linear motion of a piston

cylinder to rotary motion, and scotch yoke actuators convert linear motion to rotary motion as well. For safety reasons, most hydraulic actuators are provided with failsafe features of either Fail Open, Fail Close, or Fail Stay Put. For a control system to be effective, the control valve must adjust to its desired position as quickly and efficiently as possible. To achieve this, the right valve actuator must be selected for the application. Therefore, it could be said that the valve actuator specification process is more important than the selection of the control valve itself. To ensure the right valve actuator is chosen for a given process, critical site information, such as the availability of power supply, hydraulic fluid pressure and air pressure, must be considered. In addition, the stroke time of the valve, failsafe position, control signal input and safety

factors also must be given due consideration.

For control to be very effective, it is imperative that a control valve adjusts to its desired position as quickly as possible. To achieve this, the right valve actuator must be selected for the right application. Therefore, when the various types of control valve actuators are available and their individual features given, the selection of the correct

control valve actuator becomes as critical as selecting the control valve.

Finally, in selecting the right valve actuator for a given process, critical site information, like the availability of power supply, hydraulic fluid pressure and air pressure, must be considered. In addition, the stroke time of the valve, fail safe position, control signal input and safety factors, etc., also are taken into consideration. ■

*Chikezie Nwaoha, B.Eng has a bachelors degree in Petroleum Engineering from Federal University of Technology, Owerri. He has also completed a term as an operator (student trainee) with Port Harcourt Refining Company (PHRC, [www.nnpcgroup.com/phrc.htm](http://www.nnpcgroup.com/phrc.htm)) in Nigeria, and is currently working on several research projects involving flow systems design. As part of his research, Nwaoha has authored a number of engineering articles in leading international journals. Nwaoha is a member of SPE, ASME, AIChe, IMechE, ICE, IGEM, and the Nigerian Gas Association (NGA, [www.nigeriangasassociation.org](http://www.nigeriangasassociation.org)). He can be reached at [chikezienwaoha@yahoo.com](mailto:chikezienwaoha@yahoo.com).*

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# INDUSTRY NEWS

## Danze named partner of Energy Star® approved house plans

WOODRIDGE, ILL. — Danze, Inc. has been named a sponsor of The House Designers' first-ever Energy Star® approved house plans. This unique collection of house plans promotes consumers and builders to build eco-friendly, energy efficient homes.

This exclusive set of green house plans includes all the necessary tools to build a green home, including information on green building products and practices. Danze will serve as the official faucet and plumbing fixture partner of the initiative.

"We're excited to support this innovative initiative to help homeowners and builders in their quest for more eco-friendly options in the design and building process," said Ed Detgen, vice president of market-

ing for Danze. "It's an important way for us to continue our green efforts in a segment of our industry that has potential to significantly impact the environment."

The collection of house plans will include several water-saving and sustainable solutions from Danze such as:

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## When animals attack!

BY JOHN MESENBRINK,  
editor

I was spending a weekend away a few weeks ago across the border on Lake Geneva, Wis. It's a short hour-and-a-half drive from the Chicagoland area. So my wife, my brother and sister-in-law and I were enjoying a relaxing "happy hour" at a local Williams Bay establishment and that's when all the commotion started. Bartenders and waitresses started screaming and positioning themselves to a safer place at the bar — like on top of the bar! "What the ...?" I followed their line of sight to the ceiling and noticed a wiry squirrel doing its best balancing act on some of the beams. It was sort of amusing for the bar patrons, especially watching the employee reactions.

As the squirrel eventually made its way down to the floor, more oohs and aahs filled the place. The squirrel scampered under the customer-filled tables and the occupants amusingly lifted their feet to avoid a varmint confrontation.

The squirrel, then, gathering its breath for another round of rodent rodeo, was camped out near the PGA golf video game. Some big biker dudes, not to be interrupted in their intense game of billiards, motioned the little critter toward the door with a pool cue, and eventually shooed the poor guy outside. The bikers turned back inside to a spattering ovation until laughter ensued. Not to be outdone, the furry little rat made a U-turn back

into the bar for an encore. Another biker, sitting at the bar with his lady friend, evidently had had enough of the animal antics. He cornered Mr. Squirrel and proceeded to pick the animal up with his bare hands as if it was a stuffed animal! "Did he just do what I think he just did?" I remember muttering to myself. Trying to impress his girl — or dumber than a bag of hammers — he walked



outside grabbing the squirrel by the nape of its neck and tossed it aside.

Now he turned back toward the bar — chest outward — to silence. The patrons were aghast upon the sight of blood running profusely down his hand and arm! You see, the squirrel didn't particularly like the fact of being held and made mince-meat out of that biker's right appendage. Looks like a visit to the doctor for some rabies shots may be in order. In the meantime, you guessed it, Mr. Squirrel made his way back into the bar, eventually exiting, on his own terms, out the side door.

This incident made me think of all of you that put yourself in "harm's" way when on the job. *Phc News* is interested in your animal encounter stories. During a service call, have you encountered a runaway snake curled up to the piping under the kitchen sink? What about that "rabid" dog that intimidated you during your visit? What animals have you had to deal with? Dogs, cats, snakes, bats, etc.? Tell us your story. Send it to John Mesenbrink at [editor@phcnews.com](mailto:editor@phcnews.com). ■

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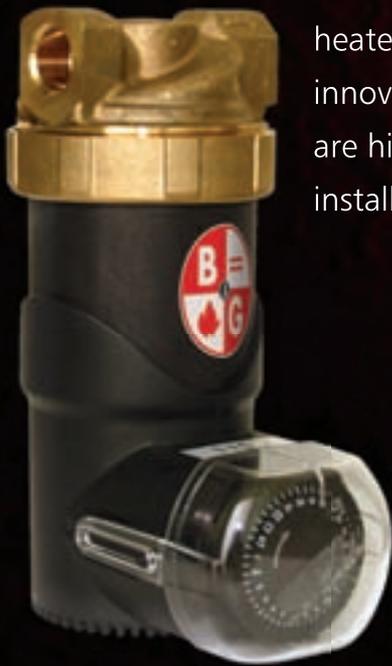
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