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**TURNING YOUR CREW INTO
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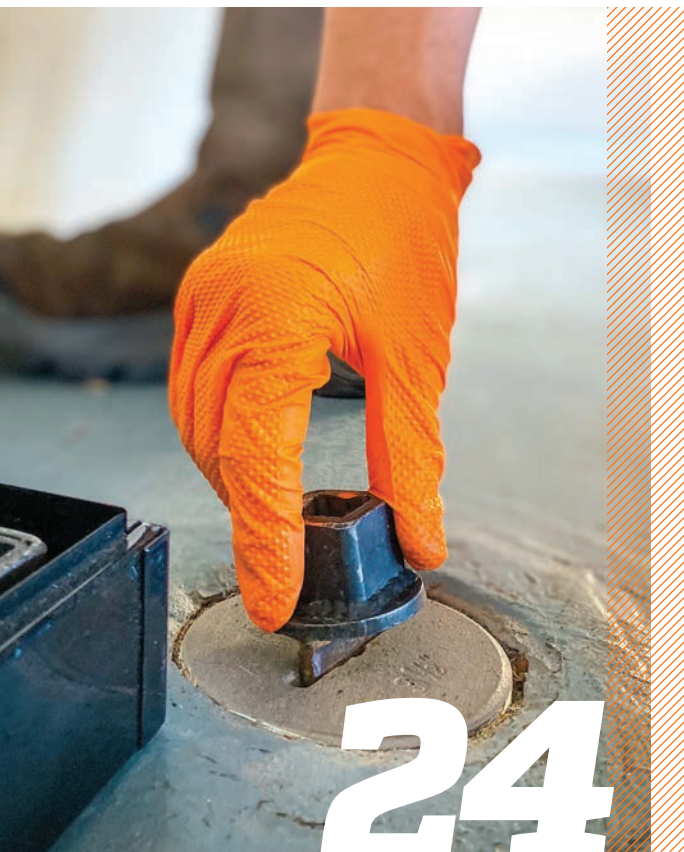
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On the ROAD

Conquering the Cleanout

Wrench kit helps plumber open frozen drain cleanout plugs with minimal effort.

- By Ken Wysocky



On the Cover

Armbrust Plumbing & Heating Solutions plumber Ben Miller installs a faucet handle and water lines to a sink in a new home construction job the company is handling in Carol Stream, Illinois. Armbrust Plumbing & Heating Solutions has been in business for 103 years offering residential and commercial plumbing services, drain clearing, HVAC sales and service, water heater and boiler sales and service, standby-generator sales and service. (Photography by Mariah Karson)

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Call toll-free 800-257-7222

Outside of U.S. or Canada call 715-546-3346

Mon.- Fri., 7:30 a.m.-5 p.m. CST

Website: www.plumbermag.com

Email: info@plumbermag.com | Fax: 715-546-3786

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CONTROLLED CIRCULATION: 22,000 per month
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Cory Dellenbach

Three Keys to Success

It doesn't take much to make it to 100 — just pride, enthusiasm and hard work

A few months ago, I was watching some of the summer Olympic games and saw athletes that were enthusiastic about the sports they were competing in, pride for the countries they were representing and hard work to win the medals.

It's the same thing I see when I talk to owners and employees of long-standing plumbing companies.

Pat Armbrust, whose family has owned Armbrust Plumbing & Heating Solutions for 100-plus years, has that enthusiasm for the Illinois-based company. He also has pride for the company his grandfather and father

In the profile on Armbrust Plumbing in this issue, Pat Armbrust talks about the changes his family's company has been through over the years. While there have been a few changes, the core beliefs of treating employees and customers with respect and taking pride in what they do haven't swayed at all.

KEEPING THEM HAPPY


As mentioned above, one way to help a company make it to the big 100-year mark is by keeping your employees happy. That isn't always easy to do, but it isn't impossible.

Check out some tips on changes you can make with your company right away to start making employees happy and keeping them that way in our Smart Business feature in this issue.

TACKLING THE CODE

Those of you who have been in the plumbing industry know by now how confusing the plumbing codes can be where you are from and throughout the world. Our industry insider, Randy Lorge, last spoke about circuit venting. This time, he tackles wet venting and how the code varies so much.

Is there a plumbing code that you would like to have looked at a little bit closer? Maybe something that has you stumped? Let me know by emailing me at editor@plumbermag.com and we'll pass it onto our industry insiders to try and help.

Enjoy this issue! 

The plumbing industry seems to be one of a few industries in the world that have companies that last that long, and I truly think it's because of the lessons you, as apprentices, journeymen and as family members growing up in this field, were taught early on.

have helped grow, and he isn't afraid to show the hard work his employees do in interactions with customers and the community.

I've said it many times in this column, but I enjoy when we profile a company that has been around 100-plus years and hearing how they were able to accomplish that feat. The plumbing industry seems to be one of a few industries in the world that have companies that last that long, and I truly think it's because of the lessons you, as apprentices, journeymen and as family members growing up in this field, were taught early on.



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Reinstating branch lines after installing liners in sewer laterals used to be a time-consuming job for TCI Plumbing of Goodfield, Illinois. In this online exclusive, read about the robotic cutter the company invested in that changed all of that. [▲ plumbermag.com/featured](http://plumbermag.com/featured)

WATERTIGHT

Avoid Common Shower Installation Mistakes

When it comes to shower installation and waterproofing, taking shortcuts can lead to disastrous results. Check out this online exclusive for tips on what to do as well as what not to do so that your customers don't experience major problems down the line.

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OVERHEARD ONLINE

"It is essential to take your time, ensuring your equipment is working properly and you have located the entire project area. You would be surprised how many lines are mislocated due to an operator not paying attention."

— *Tips for Effective Utility Locating*

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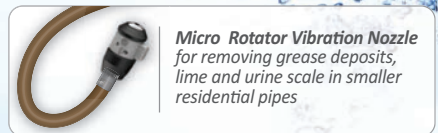
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In For the LONG HAUL

100-year-old Illinois company quick to adapt to changes to stay relevant and to provide customers with exceptional service

By Giles Lambertson | Photography by Mariah Karson



Armbrust Plumbing & Heating Solutions, Carol Stream, Illinois

| | |
|-------------------|--|
| OWNER | Richard Armbrust |
| EMPLOYEES | 20 |
| YEARS IN BUSINESS | 103 |
| SERVICE AREA | DuPage County in Chicago Metro area |
| SERVICES | Residential and commercial plumbing services, drain clearing, HVAC sales and service, water heater and boiler sales and service, standby-generator sales and service |
| SERVICES | armbrustplumbing.com |

▶ Pat Armbrust stands in front of a wall showing some historical photos from his family's plumbing business in Carol Stream, Illinois. Armbrust's great-grandfather, Clarence, started the business in Wheaton, Illinois, a suburb of metropolitan Chicago. Pat's father, Richard, now owns the company.

Pat Armbrust doesn't know the brand of vehicle Clarence Armbrust cranked up to haul his plumbing tools after he started the family business in Wheaton, Illinois. Such details tend to get lost over the course of 103 years. That's how long since Clarence Armbrust opened the door to Armbrust Plumbing.

Pat Armbrust does know that the door to the business was at the Armbrust home in Wheaton, a western suburb of metropolitan Chicago. His great-grandfather operated the plumbing business from his home on Ohio Street for more than 30 years before moving the shop to a downtown Wheaton building in 1954.

Back then the company focused on new construction, plumbing houses and multiple-story buildings.

When Clarence Armbrust's son, Art, became the second-generation owner of the shop, the company continued to work solely with contractors to fit out new structures. Though the Wheaton area wasn't experiencing a building boom, nearby communities like Oak Brook were. During the 1950s, new subdivisions began to spring up across the nation.

What happened next became an inflection point in the company's long history. An uncle of Pat Armbrust — Dave Armbrust — assumed leadership of the company and decided its

future lay in plumbing services rather than plumbing installations. An economic recession that had struck construction activity in 1978 led to the change in mission. "That was a huge transition," Pat Armbrust says. "We stopped doing new construction altogether."



“I don't know many plumbing businesses that have been around for more than a hundred years. A lot of the pride has to do with relationships created in the community over the years.”

Pat Armbrust

▶ Plumber Ben Miller installs a toilet during a new home construction job in Carol Stream, Illinois.



Plumber Ben Miller trims out a residential shower.

Armbrust acknowledges that it “would be quite impressive to pass it on to another generation,” but that won’t be happening any time soon. On a recent Sunday, Armbrust took one of his children, Alexa, on an emergency run to fix a home water heater. His daughter relished the service call, but she is just six years old.

BEYOND PLUMBING

The company settled in as a plumbing services company, including servicing boilers for both commercial and residential hot-water radiator heating systems. In the mid-1990s, the company took a logical next step and began hiring technicians to work on cooling systems.

Today, Armbrust Plumbing & Heating Solutions is committed to both heating and cooling service on top of general plumbing repairs. The company crew numbers nine plumbers and four HVAC techs. Some 60% of service calls come in for the plumbers, most of the rest for the HVAC specialists.

“That varies according to weather, of course,” Armbrust says. “When it’s a hundred degrees, air conditioning work is going like crazy. In mid-June, we had a four-inch rain and plumbers were hard at work on drains and sump pumps.”

Plumbing services continued as the focus of the business when Pat Armbrust’s father, Richard, took over the company in the late 1990s, and remains so in 2021. Today, as accounts manager, Pat Armbrust oversees all aspects of Armbrust Plumbing & Heating Solutions, the fifth Armbrust and fourth generation of the family to do so.

“I don’t know many plumbing businesses that have been around for more than a hundred years,” Armbrust says. His 92-year-old grandmother is especially pleased by the longevity of the family business, he says. “A lot of the pride has to do with relationships created in the community over the years.”

“The plumbing world is constantly evolving and we have to evolve with it, meeting the constant change head on, rolling with it.”

Pat Armbrust

Thriving on Opportunities

Armbrust Plumbing & Heating Solutions is an opportunistic company. The plumbing company based in Carol Stream, Illinois, has shown agility in changing course when a new market or situation shows up.

After being founded 103 years ago as a plumbing installation company, it decided in the midst of a recession some 60 years after its founding to switch to plumbing services for residential and commercial customers. That switchover has produced 40 more years of success.

More recently, company leaders decided to enter a brand new market — standby generators. This was not a natural extension of the work of plumbers and HVAC techs. Yet 20 years later, it is a solid part of the company book of business.

"A builder in town in 2000 had need of a standby generator," is how Pat Armbrust, the fourth generation of Armbrust family company leadership, explains the adding of the new service. "So, two of us became licensed for working on Kohler and Generac generators. With the electrical grid problems and storms we're experiencing, more and more people are looking for standby power."

To differentiate itself from other generator vendors, Armbrust Plumbing & Heating Solutions emphasizes generator maintenance.

"A lot of people are selling and installing the generators, but not necessarily offering to maintain them," he says. "We lean more toward ongoing maintenance, reminding owners that the units are not just a nice machine sitting on the side of the house. In a power outage, the generators can be life-or-death machines."

Another indicator of the company's ability to flex with the times is how it responded to the COVID-19 virus disruption. Beyond putting in safety and health protocols, the company began to send technicians home at the end of workdays instead of bringing everyone back together. It began a restructuring of the company's work schedule.

"We had them start and end their days at the house instead of coming in here for a morning coffee and chatting about last night's football game," Armbrust says. "We became more efficient as a consequence."



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▼ Pat Armbrust, whose family owns Armbrust Plumbing & Heating Solutions, stands outside one of his company's many service trucks.

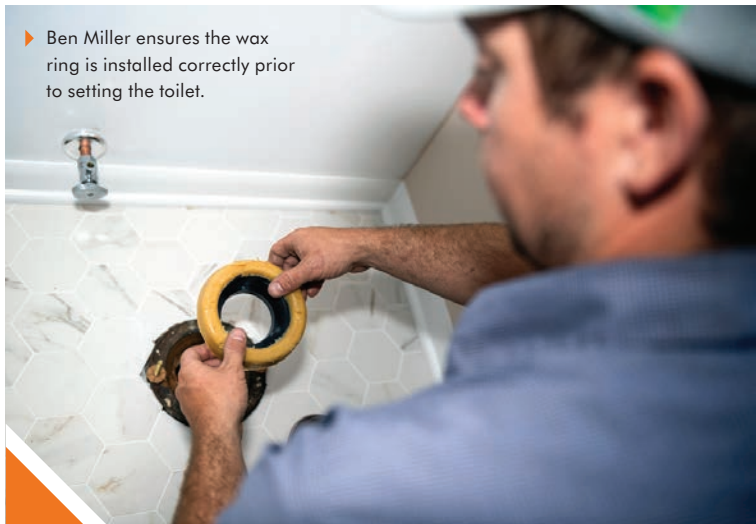


Most of the calls for service originate in DuPage County, of which Wheaton is the county seat. Some responding techs do end up working in homes and businesses in adjacent Cook County to the east, or Kane County to the west, but the company footprint is solidly in DuPage.

The company's base of operations, however, has shifted from Wheaton to Carol Stream in the northwest quadrant of the county. The relocation from downtown Wheaton occurred five years ago. The Carol Stream location is a former doctor's office that was reconfigured to offer more efficient company operations as well as to provide sufficient room for equipment and parts inventory.

"We have room to grow here," Armbrust says. The family didn't turn its collective back on the previous long-time office, honoring the company roots on Ohio Street (which has been renamed Liberty Street). "Our company name and logo still are on the front of the old office in downtown Wheaton."

The roomier Carol Stream shop will more easily accommodate such machinery as the trailered Spartan Warrior jetter that Armbrust plumbers use to clear clogged drainpipes where cleanouts give them access. "Not every



► Ben Miller ensures the wax ring is installed correctly prior to setting the toilet.

house is suited for using a jetter, but it does produce a cleaner pipe."

The techs rely on a variety of RIDGID tools for different applications, such as SeeSnake and SeeSnake Mini cameras for pre- and post-inspection of pipes, cable drum machines for mechanical clearing of lines, and K9-204 descalers. Three box trucks and a pickup carry these and other pieces of equipment to customers' doors.

When a sewer pipe collapses or otherwise is beyond jetting, Armbrust crewmembers crank up a Kubota KX91-3 backhoe to excavate the buried pipe and perform a spot repair. The 28 hp excavator is utilized weekly on average. To date, the company has subbed out trenchless repair jobs — lining of pipe — but it might be doing the work in-house before long.

“We don’t do any lining, but I would like for us to get into trenchless work,” Armbrust says. He is a believer in new technology and is willing to spend to procure it. “One thing we have done over the last 20 years is invested in our tools. When we can have the proper tools on a job, a customer has a better experience and is given a better product. I don’t invest to have every kind of new tool, but because I want to simplify the service process for my techs. That’s half the battle.”

GOING WITH THE FLOW

In short, the company is not afraid of change. “We had paper invoices when I started. Now we use tablets, which makes it simpler for the technician and the end user, too,” says Armbrust. “And the convenience trickles down. A tech might work on something and three years

“I tell them the most valuable tool in their toolbox is their iPad. The internet gives them everything they need when they encounter one-of-a-kind challenges on the job.”

Pat Armbrust

later a different tech responds to a service call and can pull up the history and be guided by it.”

Technological change also brings the challenge of keeping technicians current in industry knowledge. The company is a union shop, so plumbers have continuing education opportunities.

“Every two months we pull them out of the field for some in-house training, two to four hours of training, about changes in the code, how we are performing, any changes in a product line.”

The older hands in the crew — some have been with the company for 10 or 20 years — naturally find changes a bit harder to accept.

“I tell them the most valuable tool in their toolbox is their iPad,” Armbrust says. “The internet gives them

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◀ Armbrust Plumbing Solutions not only does plumbing service work, but also does new home construction work as plumber Ben Miller does here.

▼ Ben Miller carefully lines the fixture as he installs the shower and tub in a new home.

everything they need when they encounter one-of-a-kind challenges on the job. That's the power of the internet. Most of them are starting to understand that."

Long tenured crewmembers are a result of company policies that encourage longevity. Armbrust says most of the company service technicians end up retiring with the company.

"When I hire, I don't just look for an employee. I want them to have careers here," Armbrust says. "When I bring them on board, I'm filling a need right in front of me, of course, but at the end of the day I am looking for a career employee."

Long-term employees also are a consequence of Armbrust Plumbing & Heating Solutions keeping employees on the payroll through difficult economic periods. Over the span of a century, every company will experience bad times. Armbrust specifically cites the slowdowns after the 9/11 attacks and the housing crash in 2008-09 that wreaked special misery on construction trades.

"In 20-plus years, we haven't laid off anyone," he says. "Hours got slow during bad times and some techs were down to four days a week. Decision making in such times has to come with everyone at the table, techs included. In both downturns, we knew we were going to come out on top, but we just didn't know how long it was going to be."

His current concern is not about keeping his crew fully staffed. Rather it is about ensuring he has the inventory of materials and products he needs for the rest of the year. The distortions of the economy during the virus onslaught seriously interrupted manufacturers' supply cycles.

"Across the industry, water heaters are back-ordered, PVC fittings are back-ordered," he says. "Furnaces. Air conditioners. Knowing this was a potential problem, I developed an overstock of materials — a full quarter's worth of air conditioners, water heaters, pipe — to make sure we could maintain our work and service till things got back to normal. If I don't have the materials on hand when I answer the phone, I'm in trouble."



CHANGE CONTINUES

All kinds of changes have occurred over the 103 years the company has been in business. Armbrust is determined to keep up with the changing world of plumbing by continuing to invest in people and equipment.

"The plumbing world is constantly evolving and we have to evolve with it, meeting the constant change head-on, rolling with it," he says.

He adds that the last century of change probably means that early generations of company leadership wouldn't recognize the plumbing industry today. "I think my grandfather, if he were still alive, would be lost. There are hardly any plumbing procedures or truths still around from a hundred years ago except that sewer water still flows downhill." 📺

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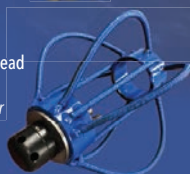
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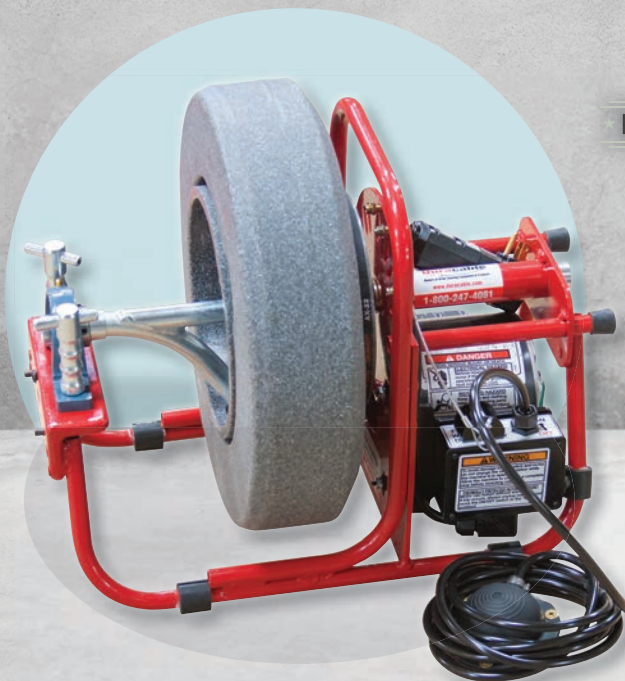
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Conquering the Cleanout

Wrench kit helps plumber open frozen drain cleanout plugs with minimal effort

By Ken Wysocky

Opening frozen drain cleanout plugs used to be about a 50/50 proposition for Rance Okudara, a technician at Roto-Rooter of Honolulu: They either came off pretty easily or turned into a half-hour-long struggle.

Things are different now, however, courtesy of a cleanout wrench kit made by Odd Shop Ltd., a fabrication shop in Pennsylvania.

The kit is designed to help plumbers easily remove most common-size cleanout plugs with either raised square, countersunk square or countersunk slot caps.

"I've opened up hundreds and hundreds of cleanouts and you never know what to expect," says Okudara. "But this tool makes things a lot easier.



◀ Hand-fabricated out of mild steel, the kit includes sockets that accommodate many square raised-head and countersunk cleanout sizes, as well as slotted plug. (Photograph courtesy Roto-Rooter)

▼ Roto-Rooter technician Rance Okudara uses the cleanout-plug wrench kit from Odd Shop Ltd., attached to his drill to open a drain cleanout at a job site.



“You always want to make work easier for yourself and this definitely does that. Every drain cleaner should have one. It's a great, great product.”

Rance Okudara

“A really frozen cap might take me 30 minutes to remove,” he says, recounting a technique that's all too familiar for many plumbers: Get a cold chisel and a mini-sledgehammer and “pound the crap” out of the cap to try and jar it loose, he notes.

“And if that fails, I'd take a titanium drill bit and drill holes through the cap, use a hacksaw or a Sawzall to ‘pizza-pie’ cut it into pieces, then put on a new plastic

cleanout cap when I'm finished working on the drain,” he says.

Okudara notes it's also possible to pull a toilet and clean a drain from there instead of using a cleanout. But that can lead to other problems, too, such as broken closet



| | |
|-------------------------|---|
| COMPANY | Roto-Rooter, Honolulu, Hawaii |
| OWNER | Roto-Rooter Services Company |
| TOOL | Cleanout-plug wrench kit from Odd Shop Ltd. |
| FUNCTION | Easier removal of drain-cleanout plugs |
| FEATURES | Hand-fabricated, mild-steel sockets that fit square raised-head cleanouts in 7/8-, 1 1/16-, 1 1/4-, 1 3/4- and 2 1/8-inch sizes and square countersunk cleanouts in 3/4-, 7/8- and 1 1/8-inch sizes. Also includes a 1/4-by-1-inch slotted socket; a 1/4- by 1-3/4-inch slotted socket; a two-piece, 17-inch T-handle for generating torque; and a steel storage box. |
| COMPANY WEBSITE | www.rotorooter.com/honolulu/ |
| ODD SHOP WEBSITE | www.oddshopltd.com |

bolts or replacing damaged flanges, not to mention the extra time it takes to reset the toilet.

"But with the Odd Shop kit, I can usually remove a frozen cleanout cap in 30 seconds or less," he explains. "And time is money. Saving up to 30 minutes per job adds up to a lot of time every week and allows me to get to other jobs faster and make more money. I get paid by commission, so efficiency is very important to me."

STRONG AND DURABLE

Hand-fabricated out of mild steel, the kit includes sockets that accommodate the following square raised-head cleanout sizes: 7/8, 1 1/16, 1 1/4, 1 3/4 and 2 1/8 inches. It also includes sockets that fit the following square countersunk cleanout sizes: 3/4, 7/8 and 1 1/8 inches. In addition, it offers a 1/4-by-1-inch slotted socket wrench; a 1/4-by-1 3/4-inch slotted socket wrench; a two-piece, 17-inch T-handle for generating more torque; and a steel storage box.

"They're very strong tools," Okudara says. "They don't deform or bend under high torque."

Okudara prefers to use an impact drill with the various wrench heads, which are designed to fit a 3/4-inch socket head. Because his Matco Tools impact drill has a 1/2-inch drill shank, Okudara bought a 3/4-inch-to-1/2-inch socket adaptor/reducer to accommodate the size difference, he says.

"A 3/4-inch drill is very expensive and the adaptors work great," he notes. "The hammering action of the impact drill is very effective."

The wrench set sells for \$315, or \$285 without the steel storage box. The Odd Shop also sells wrench heads individually.

WORTHWHILE INVESTMENT

Okudara says the Odd Job wrenches really shine in commercial bathrooms, where brass cleanout caps often are countersunk as much as 6 inches below floor level.

"You're never going to get a wrench down there," he says. "But I use a socket extension and tap it right off with the impact gun."

The plumber and drain cleaner concedes that the price of the wrench set initially gave him second thoughts, especially since he buys his own tools.


"I've opened up hundreds and hundreds of cleanouts and you never know what to expect. But this tool makes things a lot easier."

Rance Okudara

"But after so many situations where I've quickly removed stuck caps that otherwise would've taken me 30 to 40 minutes to remove, it's been a totally worthwhile investment," he says. "I've more than covered my initial investment because I'm so much more efficient."

"It also reduces fatigue and the chances of getting injured while chiseling metal," he continues. "Any time you can use less force, it helps you conserve energy for when you really need it."

In the end, the tool fits Okudara's preference for working smarter, not harder.

"You always want to make work easier for yourself and this definitely does that," he says. "Every drain cleaner should have one. It's a great, great product." 

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Tips for Keeping Employees Happy

Treat your crew like your most valued plumbing customers ... and they will be the company's greatest supporters

By Brigitte Hyacinth

Many companies invest heavily to improve the customer experience but sideline employees who are responsible for delivering that experience. What some business leaders forget is that their employees are their first and most important (internal) customers.

Your crew uses your equipment and follows your service protocols and they know firsthand about your culture. If your employees don't believe in your business, the quality of their work will be poor. Business success starts with the employee experience. When employees are happy — feel valued, welcome, respected, heard — they will create remarkable experiences for your portable sanitation customers.

RAISE MORALE

You can't expect stellar customer service from employees who feel distrusted and discounted. Successful businesses focus on creating memorable employee experiences to keep their staff engaged and happy. Several years ago, Airbnb announced it was appointing a global head of employee experience. The following year, the company topped Glassdoor's list of the 50 best places to work.

Instead of following the traditional business model, Airbnb creates change and empowers employees at all levels, which has a huge effect on the success of the company, both monetarily and culturally. What are some ways you can have that kind of impact on your workers in the plumbing industry?

Always be quick to recognize and reward the efforts and contributions of employees. Nothing says we value you like showing how much you appreciate them. Employees spend half of their lives at work. It should at least be a pleasant experience. When workers are treated unfairly and as "second class citizens," the result is decreased employee morale.

Low morale results in decreased employee productivity. Moreover, dissatisfied employees will share their negative

Employees spend half of their lives at work. It should at least be a pleasant experience. When workers are treated unfairly and as "second class citizens," the result is decreased employee morale.

work experiences with family and friends, thus turning away potential customers and employees. The employee experience is influenced by three factors:

1. The physical environment in which employees work
2. The support and tools an employer provides
3. How an employer takes an interest in the well-being and success of employees

I'll share an example to illustrate my point. A retail store stated their employees were the "heart of the business." The retail area was clean and well stocked. Aisles were wide and well marked with bright signage. Even the parking lot sparkled — there was rarely any litter seen in customer parking areas. Customers were impressed.

However, employee space was a different matter. Stock rooms were cluttered and dark. Staff locker rooms were poorly lit and maintained. The break room was bleak, with old, uncomfortable furniture, and trash bins overflowed. Even the vending machines were inadequately stocked with only junk food.

The message was clear — the company cares more about customers and less about employees.

IT'S YOUR TURN

So how can you ensure you're treating employees as your most loyal customers? Try these solutions on for size:

Continued ▶

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Engage your crew in this conversation. No one knows how to upgrade the employee experience better than your employees themselves. Ask them what they love about working in the company and what they would want you to do differently to reduce frustrations and improve work conditions. Listening is crucial.

Involve employees in decisions. Grant your staff autonomy and flexibility. Show you trust them to do the job you hired them for. Employees want to know their voices are being heard and their opinions matter. Provide consistent communication and a culture that welcomes feedback, and employees won't feel like they're kept in the dark. Employees who are involved in any aspect of the company feel ownership.

Be authentic. The driving force behind everything you do should be creating an atmosphere where workers feel like they belong. With a strong purpose, employees can easily see why leaders are doing what they are doing. Take action. Observe closely. Refine systems, policies and practices to honor employees. When people see you are sincere, you will get employee buy-in and win their trust.

Show them you care. Your team members want to be treated as human beings. They have feelings, emotions and personal lives. When employees are facing personal issues (illness, family crisis, bereavement), be empathetic. Inflexibility and insensitivity will cause employees to withdraw and become disengaged.

SHOW RESPECT

When employees are consistently treated with trust, dignity and respect, they respond by giving their best. They care about the business, their colleagues and their customers. Employees demonstrate that care by serving customers wholeheartedly, solving problems quickly and working cooperatively. If you want to get the best from your employees, treat them like your most loyal customers!



Brigitte Hyacinth is a leadership expert, keynote speaker and author of the book Purpose Driven Leadership. Reach her at brigittehyacinth@mbacaribbean.org.

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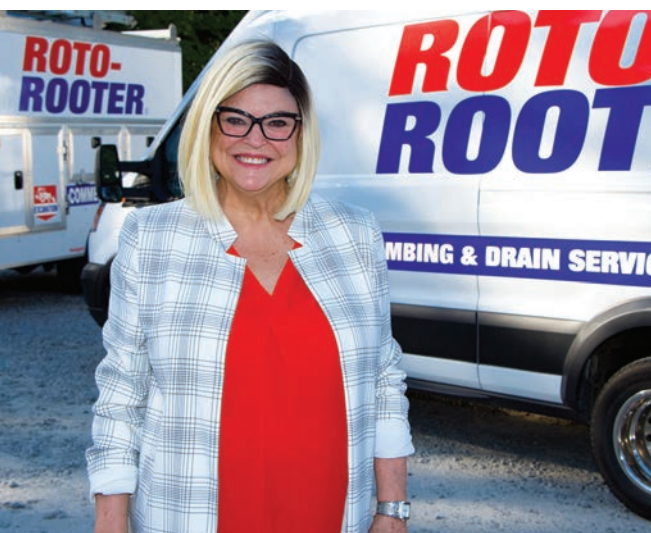
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Seeing Progress

Tools, technology continue to improve in the industry, even during a year where everything else seemed to stop **By Frank Ricci**

Legendary musician Frank Zappa once said, “Without deviation from the norm, progress is not possible.” Given that the past year is sure to go down in history as a stark example of what it means to *really* deviate from the norm, a much-needed upside is knowing that advances in the plumbing industry have not slowed down.

Sherry Daniel, owner and CEO of Roto-Rooter of Savannah, Georgia, is one industry veteran aware of the growing trends that have continued to surge during the pandemic.



▲ Sherry Daniel, owner and operator of Roto-Rooter Plumbers of Savannah, Georgia. (Photo courtesy Roto-Rooter Plumbers)

“There are just more viable options now to choose the best material for the job.”

Sherry Daniel

With 45 years in the industry, she offered some keen insights into what’s new. Asked for her list of the three most impactful technologies, she stated without hesitation, “Tankless hot water heaters, copper press tools and smart leak detection devices.”

TANKLESS WATER HEATERS

Most people in the business know tankless water heaters have been around a while but haven’t attained expected levels of popularity until recently.

“Tankless is booming,” Daniel says. “Initially, systems were electric, and many homes didn’t have enough power.”

Abundant and cheap natural gas has been a game-changer with the tankless water heaters. Newer gas-powered models are gaining market share rapidly. Aside from the less expensive fuel, they are more energy-efficient, far more so than hot water tanks. An additional and fairly new benefit is the ability to install them outside the home. Daniel also noted that tankless has become a popular option in new home construction, from starter homes to custom builds.

PRESS TOOLS

While tankless hot water systems are a huge benefit to homeowners, a recent trend that makes the work of plumbers easier is copper press tools that allow for faster pipefitting without the need to solder.

Two major benefits are time saved and less company liability. A traditionalist at heart, Daniel was not immediately a fan. However, the advantages were hard to deny. “Eventually I was won over,” she says.

LEAK DETECTION

Various smart devices have a mixed record in Daniel’s view, but she is very impressed by the latest smart leak detection.

“The better models can find a leak of one drop per minute,” Daniel says.



▲ Adam Westendorf, technician of Roto-Rooter Plumbers of Savannah, Georgia, prepares a copper press tool at a job site.

In a city like Savannah, with so many homes near or past the century mark, this technology is vital. Finding a leak under the foundation of a house early can save the homeowner large sums of money. The technology can also find leaks in older municipal pipes, something most cities have plenty of.

Daniel discussed additional trends she is seeing in Savannah, including more motion sensors on commercial toilets and faucets. Georgia participates in the EPA's WaterSense program, so she also expects to see growth in residential motion sensors. Following the success of copper press crimping, Daniel believes the next trend in tools is carbon steel crimp fitting for gas lines. Another sensor-related advancement that could cause tankless hot water to grow further is a smart system that learns the household's daily routine of showering, dishwasher use and other hot-water-intensive needs, resulting in higher efficiency operation.


NOT MEETING EXPECTATIONS

Despite the many breakthroughs, Daniel explained that some trends that were hyped upon introduction have not met expectations. Some systems proved to be too complex and expensive for the anticipated benefit and limited practical use. There are simply too many additional parts that can break down, such as the pump for tanks positioned below the seat, that are not found in standard toilets.

While not a fan of the overly complicated mechanics of many smart toilets, a recent advancement that Daniel believes will become ubiquitous is voice activation.

"Will we be telling Siri to flush? I think so," Daniel says. And as copper crimping tools make it easier to choose metal pipes over plastics (which are also improving), the cost of copper can work against that. "There are just more viable options now to choose the best material for the job."

Technology and innovations occur faster than ever, and if the last few years are any indicator, the next 10 are bound to be that much better.

"Any technology that can help is welcomed," Daniel says. 

Frank Ricci is a professional writer with Cecilia Russo Marketing, living in Savannah, Georgia. During his career, he's lent his talents to Mandalay Resort Group, Dell, Gulfstream Aerospace, Root Sports Network, Mirage Resorts and the Savannah College of Art and Design. Originally from New Jersey, Frank is a graduate of American University in Washington, D.C.

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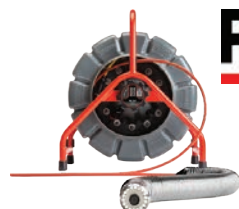


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Randy Lorge

Wet Vent You Using?

Horizontal wet venting codes can vary from state to state, so carefully study which one fits what you are doing before the work starts

By Randy Lorge

In my last column, I reviewed circuit venting and the variations of it to which different codes allow. This month we will “dive” into wet venting.

There are different wet venting systems that both model and state plumbing codes allow. Vertical and horizontal wet vents are the most common of all these systems. For this article, we will discuss the horizontal wet vent.

One of my favorite sayings that I often used while teaching plumbing code and which I’ve shared in the past with you is, “If I can identify it, I can size it!” So, let’s look at how the codes define a wet vent and then throw some sizing at it.

- Code A — “Wet vent” means that portion of a vent pipe receives the discharge from other fixtures.
- Code B — “Wet Vent” is a vent that also serves as a drain.
- Code C — “Vent, Wet” is vent pipe that is sized and arranged in accordance with this code to receive the discharge of waste from a fixture.

As you can quickly recognize from the definitions, a wet vent is part of the plumbing system where a drain from one or more fixtures is sized in a way that allows for a passage of air through the top portion and, in turn, vents other fixture traps.

In Figure 1, you can see how the drain from the lavatory wet vents the shower and the common drain from the shower and lavatory, wet vent the water closet.

In concept, all codes are the same when it comes to this method of venting. However, from that point on, things start to “swish” around differently depending on which code you follow in your state.

Figure 2 illustrates the wet vented portion of the system.

In some codes, the fixtures that discharge into the wet vent shall be a maximum of 1 to 2 DFUs (drainage fixture units) and the water closet shall be the most downstream fixtures vented by the wet vent.

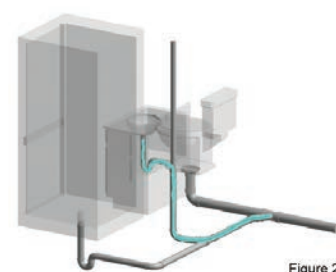


Figure 2

When it comes to sizing the wet vented portion of the system as seen in Figure 2, most codes agree that the size should be sufficient to provide enough air to protect the trap seals involved. What that minimum size should be, however, tends to vary from code to code. From my research of these codes, I’ve found the following sizing requirements:

- Code A indicates: (1) be not less than one pipe size larger than the required drain pipe size for its upstream fixtures, and (2) be not less than one pipe size larger than one-half the size of the largest connected drain

It does amaze me that we can have so many variations to the wording; but at the end of the day, these codes and the plumbers installing the plumbing make it work.

pipng being wet vented downstream.

- Code B mandates: The wet vent shall be sized based on the fixture unit discharge into the wet vent. The wet vent shall be not less than 2 inches in diameter for 4 DFUs or less, and not less than 3 inches in diameter for 5 DFUs or more.
- Code C requires: The wet vent shall be at least 2 inches in diameter. No more than 4 DFUs may discharge into a 2-inch diameter wet vent.

Another point that I find interesting, and varies by code, are the types of fixtures allowed on the horizontal wet vent, how they are intended to be used — be that public or private — and where the fixtures are physically connected to the wet vent.

For the most part, the horizontal wet vent is used in venting bathroom groups. But again, as I mentioned at the start, we must be able to identify it before we can size it. Check out these variations in the definition of a bathroom group:

- Code A — Bathroom Group: A group of fixtures consisting of a water closet, lavatory, bathtub or shower, including or excluding a bidet, an emergency floor drain or both. Such fixtures are located on the same floor level.
- Code B — Bathroom Group: Means a water closet, lavatory and a bathtub or shower located together on the same floor level.
- Code C — Bathroom Group: Any combination of fixtures, not to exceed one water closet, two lavatories, either one bathtub or one combination bath/shower, and one shower, and may include a bidet and an emergency floor drain.

Next, we have to look at these fixtures and determine how they are intended to be used — public or private — to confirm that the horizontal wet vent system can be used. Code A and C allows the fixtures to be located in public and private use bathroom groups.

Code B only allows the fixtures to be located in private use bathroom groups.

Again, these requirements relate to how, or who, will use these fixtures, not the type of building they are located in. For example, while Code B only allows the fixtures to

only be horizontal wet vented for private use, the definition of private use in that code states in part that in the classification of plumbing fixtures, those fixtures in residences, apartments, living units of hotels and motels and other places where the fixtures are intended for the use by a family or an individual to the exclusion of all others.

Shaking your head yet? Personally, I have to chuckle when I read these plumbing codes. It does amaze me that we can have so many variations to the wording; but at the end of the day, these codes and the plumbers installing the plumbing make it work.

The last thing I'll touch on is the where the plumbing fixtures are physically connected to the horizontal wet vent.

Here in Figure 4, the lav connects to the tub/shower located downstream which then connects to the water closet. Don't let the drawing fool you. Some might argue that the tub/shower is located upstream of the lav connection.

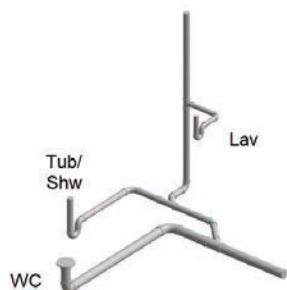


Figure 4

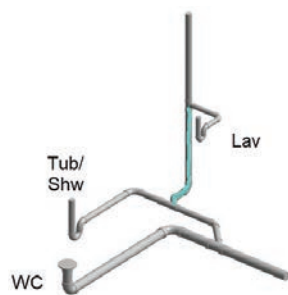


Figure 5

Remember where the wet vent starts. The moment the discharge from the lav enters its fixture drain the wet vent begins. See Figure 5.

In other words, follow the flow. Think of it like the current in a river or stream. The flow from the lav is the start

point, so to speak, and is flowing towards the next drain connection which is the wye connecting the tub/shower. These two fixtures then continue to flow downstream towards the water closet to complete the horizontal wet vent as seen in Figure 6.



Figure 3

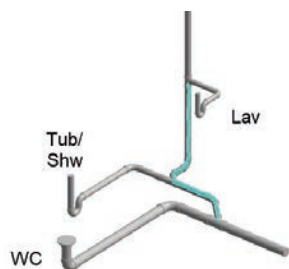


Figure 6

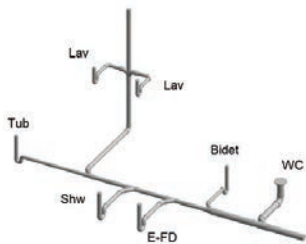


Figure 7

Figure 7 shows how the two lavs are upstream of the tub connection and the remaining fixtures connect downstream with the water closet being the last fixture vented by the horizontal wet vent.

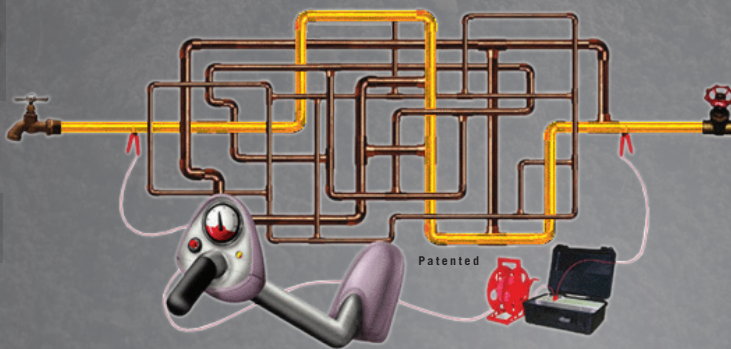
One more thing to add; the fixtures to be vented by a wet vent have low discharge surges or surges that last for a short duration. It has been proven that they do not significantly impact the airflow in the horizontal drain. It is because of this that most codes require the water closet to connect downstream of all other fixture drain connections to the horizontal wet vent. With that said, I would state that not all codes or jurisdictions agree with this and that the water closet isn't always required to be the last fixture.

By now, I'm sure I have a few of you shaking your heads and stamping your feet while mumbling under your breaths that I am out of my mind and have no clue what I'm talking about. Several of you are also pointing fingers at these systems and blurting out things like, "There is no way that would work in my state!" I get it and I can appreciate it. I'm actually laughing to myself as I type this because I did the same thing while doing the research for this article. **P**

Randy Lorge is a third-generation plumber and the director of workforce training and development for the International Association of Plumbing and Mechanical Officials (IAPMO). Lorge is also a member of the planning team for the International Water, Sanitation and Hygiene Foundation (IWSH). This 501(c)(3) foundation has completed water and sanitation projects for those less fortunate in India, South Africa, Indonesia and, more recently, the United States. He enjoys time with his family and spending as much time as possible in his deer stand. To contact Lorge, email editor@plumbermag.com.

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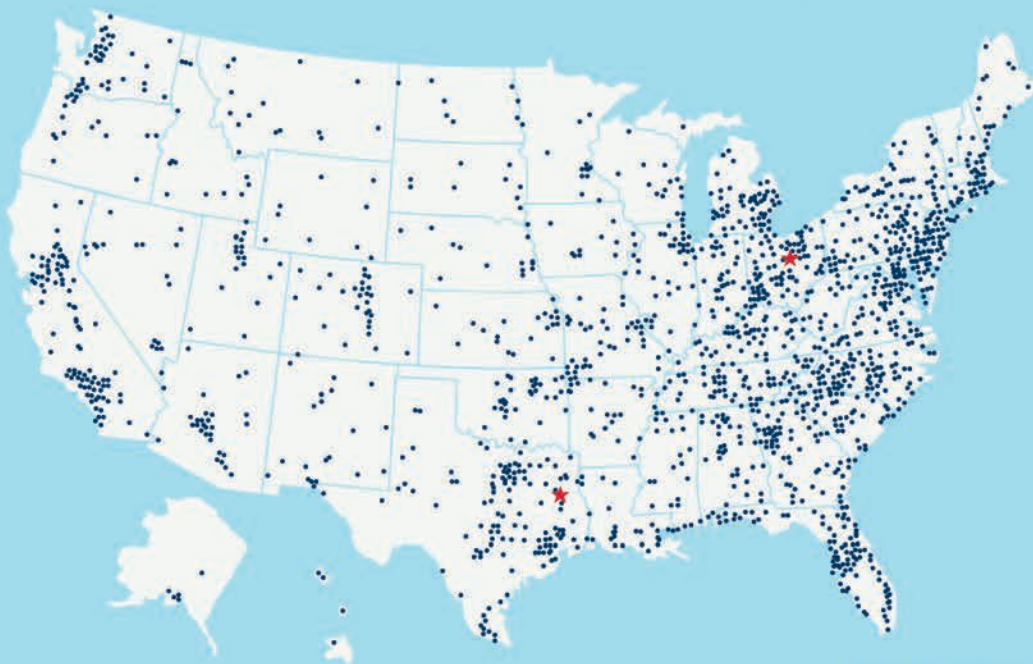
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Product Spotlight

Separator designed to remove impurities in HVAC systems

By Craig Mandli

In an HVAC system, any contaminants in the unit can prevent the refrigerant from doing its job correctly, and cause damage to the equipment. That's why it's important that those foreign contaminants stay out.

Bell & Gossett, a Xylem brand, recently announced an expansion of its CRS coalescing-style air and sediment separator product line. The extended CRS line — available for use in any HVAC system — helps break entrained air and suspended solids out of system fluid, efficiently removing these contaminants and improving heat transfer and energy efficiency.

"This expansion to our CRS product line provides our customers next-level adaptability for commercial systems," says Chris Kerback, Bell & Gossett product line manager, Engineered Specialties group. "Now with even greater variety of sizes, connections and configurations, the Bell & Gossett CRS line improves contaminant control in any HVAC system design."

With lower energy use and a durable design, the CRS helps protect pumps, boilers and other components, improving and prolonging the life of a system. The separator's internal coalescing media efficiently removes up to 100% of fluid contaminants — including entrained and



free air and suspended solids out of HVAC systems, improving heat transfer capabilities and resulting in energy efficiencies.

Benefits of the product include lifting lugs to make moving and installing easier, a threaded connection that provides an optional air vent or can be used for connection to an expansion

tank, an optional skim valve to move large volumes of air during system fill, stainless steel coalescing media that helps break the surface tension within the system fluid to release air and allow bubbles to rise to the top of the tank for removal or direct to the expansion tank, and a tank body design that is twice as large as the inlet and outlet nozzles, providing a reduction in fluid velocity, easing the removal of entrained air and suspended solids.

Separators are available in a number of models to best fit a system's requirements. Models are available for air-only, sediment-only and air/sediment combo separation, with the option for a removable or non-removable coalescing media, and for standard or high velocities. Models are available in 2- through 36-inch sizes, with 2- to 4-inch flange or groove end connections. They have a max 150 psi and 450 degree F maximum working temperature. 847-966-3700; www.bellgossett.com



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periods of non-use. PEX solutions from BrassCraft: the pro's choice in quality a job done right. 877-272-7755; www.brasscraft.com

Franklin Electric NCX series explosion-proof pumps

The new NCX Series of explosion-proof submersible non-clog pumps from FPS, a brand of Franklin Electric, are certified for use in Class 1, Division 1 and Group C and D hazardous location requirements, making them ideal for municipal markets as well as any commercial or industrial



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application that requires an explosion-proof rating. The pumps are available in single- and three-phase power options to accommodate flows up to 625 gpm. Each unit is designed for serviceability and reliability with features including a field-adjustable wear plate, factory-standard dual-silicon carbide mechanical seals and chemical-resistant components. **866-271-2859; www.franklinengineered.com**



Lochinvar reverse indirect water heater

Lochinvar's reverse indirect water heater is currently available in a 125-gallon capacity for a variety of applications, both residential and commercial. Providing up to 30 gpm of continuous hot water delivery, the water heater is designed for multifamily, commercial and large residential water heating applications using a hydronic system. It also features a 316L stainless steel coil, a jacketed and insulated steel tank and 2-inch HCFC foam insulation. The generous hot water supply allows for a dependable hot water source. It is available in ASME and non-ASME construction, providing flexibility to fit most any job. **615-889-8900; www.lochinvar.com**

BainUltra Libra 6632 bathtub

BainUltra celebrates balance and symmetry with their latest freestanding tub design, the Libra 6632. Measuring 66 by 32 by 23 inches, the Libra is generously sized to comfortably accommodate two bathers with identical sloping interior walls. Libra is offered in two configurations. The ThermoMasseur features 42 adjustable air jets, a heated back rest and their signature Geysair system to deliver hot-air hydro-thermo massage. As a soaker tub, Libra includes an optional Warm-TouchShell with heating zones contained in the bath's inner shell. Both versions of Libra are offered with the Illuzio chromatherapy option of soothing colored lights for a sensory bath experience. **800-436-2187; www.bainultra.com**



Noritz EZ Series tankless water heaters

The EZ Series of high-efficiency, condensing tankless water heaters from Noritz America cut installation time and cost when replacing larger, storage tank-type units. The Energy Star-rated EZ98-DV and EZ111-DV join the previously released EZTR40 to provide a wider range of tankless options, covering the majority of residential, tank-replacement



opportunities. Both models include top-mount water connections, maximum venting flexibility and the possibility of reusing the existing tank unit's 1/2-inch gas line. **714-433-2905; www.noritz.com**



Saniflo SANICOMPACT toilet


The SANICOMPACT toilet from Saniflo installs quickly and easily anywhere in the home, with no venting required. In addition to handling toilet waste, the toilet can also pump water away from a nearby sink. This fixture saves space through a sleek design that measures 14.5 inches wide and 21.5 inches deep and combines a macerating pump and a tankless toilet bowl into a single fixture. Operating with only 1 to 1.28 gpf, the self-contained toilet uses approximately 38% less water than a standard 1.6 gpf toilet. **800-571-8191; www.saniflo.com**

Watts Big Bubba home filtration system

The Big Bubba S100 whole home filtration solution from Watts is a certified point-of-entry system reduces 99.62% of lead and 98.26% of PFOA and PFOS in drinking water (at maximum of 4 gpm). It is also certified to reduce cysts, chlorine taste and odors. A volumetric flow monitor alerts the user when filter cartridge changes are due, and a high-capacity 0.5-micron carbon block filter (84,480 gallons) is included. **978-688-1811; www.watts.com**



Bosch Power Tools job site radio

Bosch Power Tools has two new versions of its job site radio: the GPB18V-5C, an 18-volt job site radio with Bluetooth 5.0 and power station; and the GPB18V-2C, an 18V compact job site radio with Bluetooth 5.0. The GPB18V-5C offers convenience and flexibility with four 120V AC power outlets to power lights, tools, electronics and more. Its rugged design provides a protective aluminum and rubber roll cage for the toughest job sites. The GPB18V-2C is the compact version of the radio. For environments where portability is key, the compact radio features handles and a hanging hook, and a dust- and moisture-resistant design. **800-301-8255; www.boschtools.com** 

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Matco-Norca names new sales manager

Matco-Norca welcomed Nora Koesel as its new central region sales manager. She will be managing Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin and Pennsylvania. Prior to joining Matco-Norca, Nora was the electrical account manager for Hilti North America.

Shelley Kiley joins Rinnai as VP of operations

Rinnai America announced Shelley Kiley joined the organization as its vice president of operations. Kiley will help Rinnai continue to grow and expand manufacturing capabilities in North America, including overseeing the completion of its new manufacturing plant in Griffin, Georgia. In addition, Kiley has assumed responsibility over all functional areas in manufacturing, supply chain, distribution and logistics.



RIDGID hosts local high school students for career program

RIDGID, a part of Emerson's professional tools portfolio, hosted students from Elyria Catholic High School at the brand's headquarters and manufacturing center in Elyria, Ohio. The program was part of the high school's Engineering and Technology Career Trek, a week-long initiative designed to introduce students to potential career paths, while broadening their understanding of Lorain County technical and manufacturing companies.

Kyle Thompson joins PMI as technical director

Kyle Thompson was named the new technical director at Plumbing Manufacturers International. Thompson comes from PMI member IAPMO, where he spent more than 10 years working as a standards development engineer. Before joining IAPMO, Thompson worked for a solar design and installation company while working on his degree in mechanical engineering from California State Polytechnic University at Pomona. 



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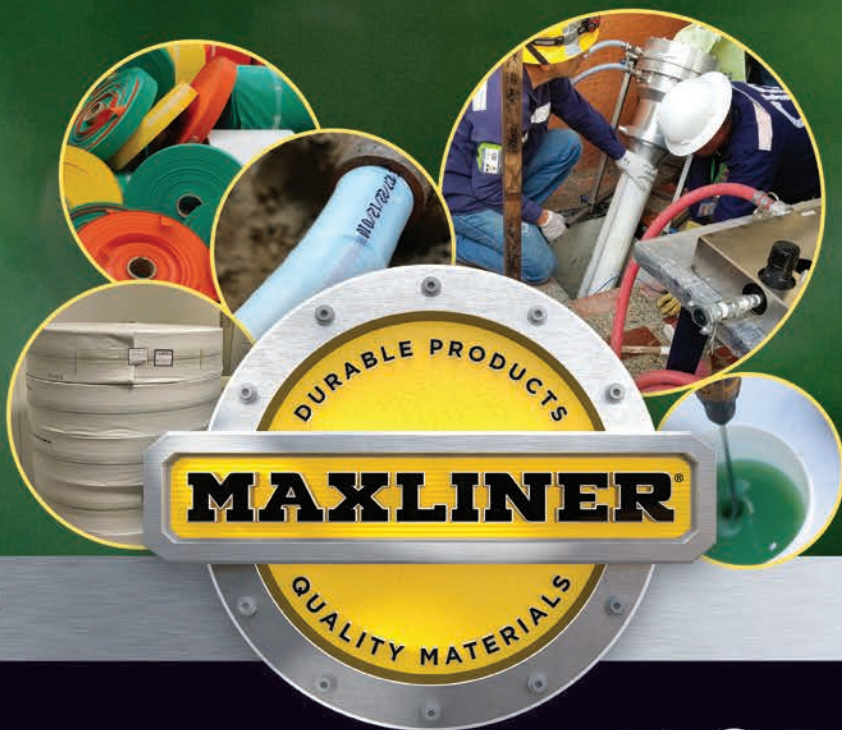
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Industrial and Commercial Plumbing

By Craig Mandli

Alarm

SJE-Rhombus Xpert Alert Wi-Fi

The Xpert Alert Wi-Fi indoor alarm system from **SJE-Rhombus** helps protect a home from costly damage due to flooding, pump failure or freezing pipes, according to the maker. The system monitors and reports residential alarm condition by notifying locally (audible and visual alarms) and remotely via SMS text messages and/or emails. It uses an existing Wi-Fi or Ethernet network to send messages. The design incorporates an LED alarm light ring that illuminates red for alarm 1 and amber for alarm 2. The red low-temperature indicator activates at 40 degrees F to alert for potential freezing conditions, but it can be deactivated for cold climates. It is CSA certified. **888-342-5753; www.sjrhombus.com**



Fixture

ADEY Innovation MagnaClean DRX

Compact and versatile, the **MagnaClean DRX** magnetic dirt filter from **ADEY Innovation** provides an effective solution for removing magnetite from light commercial systems with space-restricted mechanical rooms, and larger systems (above 4 inches) in a side-stream application. It consists of an external magnetic belt containing high-performing neodymium magnets, wrapped around a precision-engineered, 304L stainless-steel canister. As system water passes through the canister, magnetite is captured by the intense magnetic field. The belt unclips, disengaging the magnetite from the magnets, ready to be quickly and easily flushed out of the filter's drain point. Built to ASME standards, it is available in 2-inch (with 48 magnets), 3-inch (64 magnets) and 4-inch (80 magnets) pipe dimensions, and only requires a 6-inch servicing clearance. **844-378-0442; www.adey.com**



Control

Raypak Dynamic Protection

Raypak's Dynamic Protection is an advanced controls system that responds to demand and automatically adjusts to keep the unit at optimum performance. It can be used to continuously monitor operating conditions using a built-in flowmeter. Under low flow conditions, units automatically adjust the firing rate to prevent unnecessary cycling, extending the life of the heat exchanger. It is applicable for hydronic or domestic hot water heating for buildings, schools, multifamily housing and gyms. It is available on XVers, XVers L, XFIIRE and is expanding to future Raypak products. **805-278-5300; www.raypak.com**



Pipe Supports

DA Clip DA-Quick Clip

The **DA-Quick Clip** from **DA Clip** is a two-pipe grommet that secures 1/2- to 3/4-inch pipe and works with different pipe materials such as PEX, copper and CPVC. Using the snap-click attachment method, the clip fits and locks into the existing cutouts in metal studs, eliminating the process of punching/drilling holes which decreases job completion time and increases worker productivity. In wood studs, attach it with a 3-inch nail or screw for the ability to run two parallel supply lines of various sizes in an organized, efficient and clean-looking installation. The QC Bracket gives the contractor another opportunity for several additional applications. **810-623-3181; www.daclipllc.com**



Oatey Full Clamp

Oatey Full Clamp pipe clamps offer updated installation and removal features for fast and easy use. They are built with convenient push-on installation technology, including a lead-in edge that automatically opens the clamp. With a removal wedge and notch, clamp removal is also quick and simple. They provide pipes complete stand-off from the surface, and 360-degree pipe protection allows tubes to expand and contract. Notched nail slots also allow for strain relief and better nail alignment. **800-321-9532; www.oatey.com**



RWC HoldRite 703 In-Slab PEX Pipe Support

Damaged stub-ups can lead to time-consuming, costly repairs and replacements. Now, contractors can benefit from less material damage, fewer job delays and increased safety with the **HoldRite 703 In-slab PEX Pipe Support** from RWC. It helps prevent in-slab tubing damage post pour — a common problem for plumbers on commercial job sites. Available for single or double pipe runs, the tubing support has a cover plate with locator whiskers for easy identification after concrete pour. Its design accepts and protects one or two 1/2-inch PEX tubes or 3/4-inch conduit and is compatible with slabs 7 1/2 inches or greater without field modifications. **877-700-4242; www.holdrite.com**



Pump

Liberty Pumps ProVore

The **ProVore** grinder from **Liberty Pumps** is designed for use in applications where the addition of a bathroom or other fixtures below sewer lines requires pumping. It has the same V-Slice cutter technology used in the Omnivore series, brought down to a more cost-effective level. Powered by a 1 hp motor, this smaller grinder is designed to operate on a standard 115- or 230-volt circuit, requiring only a 20-amp breaker.



No special wiring is needed. The pump comes with a 2-inch vertical-style discharge and a standard leg pattern matching the LE Series. This allows for an easy retrofit into existing systems. Compact factory-assembled systems are available in both simplex and duplex versions: the ProVore 380 and ProVore 680. **800-543-2550; www.libertypumps.com**

Tools

Disston Tools Blu-Mol Xtreme QuickCore Hole Saw System



Eliminate the wasted time and frustration of removing stubborn cores forever with the **Blu-Mol Xtreme QuickCore Hole Saw System** from **Disston Tools**. The system provides up to 10 times faster core ejection versus conventional hole saws. Its wide diamond slot design allows for increased visibility and cooling while cutting. **800-272-4436; www.quick-core.com**

Koul Tools EZ-ON Hose Press 454

The **EZ-ON Hose Press 454** from **Koul Tools** installs and removes 1- to 2-inch barbed fittings quickly and safely. It has a lead screw system that requires only a ratchet or small impact gun to assemble or remove hoses. Simply secure the fitting in the vice, clamp the hose in the travelling carriage and turn the drive screw system. The press is compact, lightweight and has the power to handle difficult hose assemblies. **928-854-6706; www.koultools.com**



Continued ►

Milwaukee Tool M12 FUEL ProPEX Expander

Milwaukee Tool and Uponor have partnered to deliver the **M12 FUEL ProPEX Expander**. Equipped with RAPID SEAL heads to seal faster at 45 degrees, the tool is part of a complete solution to provide consistent installations. Providing up to 35% faster connections, it has a POWERSTATE brushless motor, delivering sustained peak power even under the toughest conditions, and an extended dual-actuating trigger for better access in tough-to-reach workspaces. The expander comes standard with ProPEX Expander Heads with RAPID SEAL, designed to provide faster sealing connections in colder temperatures while maintaining the expected time to insert a fitting. It is equipped with an auto-rotating head for quick, uniform expansions and built-in LED lights allow for convenient operation. **800-729-3878; www.milwaukeetool.com**



RIDGID RP 350 Press Tool

The **RIDGID RP 350 Press Tool** is an advanced, long-running press tool built for the most demanding job sites, while giving tradespeople even more options for connecting pipe quickly, safely and with less fatigue. Engineered to be 5% lighter and almost 3 inches shorter than its predecessor, it weighs only 8 pounds with the battery. The advanced brushless motor is known for maximizing tool longevity, efficiency and durability. The tool's 360-degree swivel comes paired with bright LED lights to let users access tight spaces and see them more clearly in low-light applications. Ideal for making connections on residential, commercial and industrial jobs, it is compatible with the full line of RIDGID jaws and rings. It also pairs with the RIDGID Link app to track tool usage, service needs, battery life and last known location. **800-474-3443; www.ridgid.com**



Valve

Fisher Manufacturing Ultra Spray Valve Plus

Fisher Manufacturing's **Ultra Spray Valve Plus** is a high performing spray valve that is designed for one million cycles of use, with a knife-edge spray nozzle that uses 1.15 gpm and will effectively remove any leftover food or residue on dishware. A thread-in nozzle requires no O-rings that can leak. It also includes a PTFE disc for smoother action. It is interchangeable with all brands of hoses. It has a solid bronze lever for full-on operation. **800-421-6162; www.fisher-mfg.com**



Water Heaters/Components

Bradford White Water Heaters eF Series

The **eF Series** from **Bradford White Water Heaters** are ultra-high-efficiency gas water heaters with electronic controls, a low-NOx premix modulating power burner, a three-pass fire tube heat exchanger system and versatile venting options. ICON HD controls combine temperature control, diagnostic codes and system ignition functions into a single control board with a digital LCD display. The heaters comply with the latest ultra-low NOx Requirement (14 ng/J NOx Limit) and also feature Vitraglas lining and the Hydrojet sediment reduction system. The series includes the Energy Star rated EF60T125 and EF100T (150,199,250) models. All models incorporate non-CFC foam insulation and protective magnesium anode rod. The Energy Star rated eF120T model uses powered anode rods for protection and includes Building Management System integration. Modulation technology allows users to match burner output to variations in heating demand. **800-523-2931; www.bradfordwhite.com**



CORRO-PROTEC Powered Anode Rod

CORRO-PROTEC Powered Anode Rods

stop corrosion, rotten egg smell and limescale buildup inside hot water tanks. They are a long-term solution that don't require any maintenance. The power supply, plugged on top of the titanium anode rod, provides an electrical current that completely stops corrosion. With that unlimited source of protection, it can double the life of the tank and prevent unwanted reactions like the sulfur smell in hot water and limescale buildup inside the water heater. All anodes are designed to last over 20 years and are easy to install since they are only 12 inches long. 877-466-6660; www.corroprotec.com



Lochinvar ARMOR Condensing Water Heater

The updated line of **ARMOR Condensing Water Heaters** from **Lochinvar** is available in a total of 10 models, ranging from 399,000 to 4 million Btu/hr. The larger input models are constructed with 316L stainless-steel, which reduces heat loss and provides a greater performance of up to 99% thermal efficiency and reliability for large commercial applications. This flexible line of condensing water heaters features a 10-1 turndown ratio and direct vent flexibility up to 150 feet in floor mount, wall mount, indoor, outdoor and indoor/outdoor convertible options, making it suitable for a variety of installations. 615-889-8900; www.lochinvar.com **P**



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Industrial and Commercial Plumbing

By Craig Mandli

Fertilizer producer replaces boilers with multiple-unit tankless water heater systems



Problem: Industrial fertilizer manufacturer Wedgworth's Inc. uses approximately 35,000 gallons of hot water daily at its operations in Clewiston and Lake Placid, Florida. The company had previously used a gas-fired boiler system to meet these massive hot-water needs. But in recent years, management grew weary of their tendency to run short of hot water. The company wanted to find a system that would meet their hot-water needs on a consistent basis, even when servicing is required, while also maximizing fuel savings and environmental stewardship.

Solution: In 2017, Wedgworth's chose to install 15 **Noritz NC380** tankless units. Fifteen months later, having found this solution even more efficient than anticipated, management relocated seven units to the larger Lake Placid operation, combining them with 10 **Noritz NCC300** heaters to create a new tankless system. Among the attractions of tankless are the operational advantages of unit redundancy: If any tankless unit needs servicing, the others will continue to deliver the required volumes of hot water to support Wedgworth's production processes.

Result: The tankless systems have consistently met the hot water needs of both facilities in an energy-efficient, environmentally responsible manner with minimal maintenance. But director of liquid operations Ken Bruce is not overly concerned about service costs: "I could easily replace 10, maybe more, of those tankless units annually, and still finish below my former expenses for boiler service. Add the required monthly and yearly boiler inspection fees to keep the old units safe and operational, and the savings with tankless are tremendous." 714-433-2905; www.noritz.com

Compression-sleeve fitting system supports hotel's long-term investment strategy



Problem: Fairfield Inn & Suites at Harrisburg International Airport is a 123-room, Marriott-branded property located directly adjacent to Pennsylvania's third largest airport. With gate areas only a short walk away, the hotel is a welcome addition to the airport, which serves more than 1.2 million travelers each year. Vice president of design and construction Bill Hoy needed to ensure the building systems he specified would last long past the sparkle and excitement of the hotel's grand opening. "We don't build and sell our properties; we're in it for the duration. When it comes to building systems, the cheaper alternatives can really hurt long-term profitability," Hoy said. "That's why we chose **REHAU PEXa** plumbing systems for this property."

Solution: According to Hoy, in addition to its strength and durability, a main reason for choosing the REHAU PEXa plumbing system is that Shaner Hotels is steering away from copper plumbing in their properties. "We really want to avoid the higher risk of leaks, corrosion and buildup inside copper pipe that can happen over time," he said. "With RAUPEX plumbing pipe and EVERLOC+ fittings, we're not worried about long-term performance issues, and the plumbing contractor was happy with the smooth installation process."

Result: Darrin Fahnstock, commercial plumbing manager at Brubaker, agreed. During his 23 years at Brubaker, he has had experience with many large commercial installations using various types of materials. "Even though this was our first time using the REHAU PEXa plumbing system, we were able to get started relatively quickly once we arrived on the job site. The EVERLOC+ system didn't take much time to master; all of the components are designed to work

together to create solid connections,” he said. Compared to a similar-size copper installation, Fahnestock says the REHAU PEXa installation went much faster. “It was easier to get the pipe routed, connections were made quickly and I felt very confident that the system was solid and secure once we were finished,” Fahnestock said. **800-247-9445; www.everlocplus.com**

Bathroom trailer manufacturer chooses above-floor macerating and grinder solutions for Super Bowl



Problem: Ameri-Can Engineering, a portable restroom and shower manufacturer, was charged with supplying units for Super Bowl LV in February of 2021. They were asked to build portable restroom trailers that were wheelchair accessible and in compliance with ADA regulations. Technicians were in search of a reliable and durable plumbing solution that could maintain the heavy commercial usage and allow for wheelchair accessibility.

Solution: Ameri-Can chief operating officer Keegan Campbell chose **Saniflo's** above-floor plumbing technology five years ago. According to Campbell, “Saniflo products are the best solution for heavy commercial usage because they eliminate chances of clogging and pump failures.” **Sanicompact** was the ideal solution for this event because it's a self-contained unit with a built-in macerator perfect for small spaces. Simultaneously, the dual-flush toilet system works to macerate toilet wastewater and discharge graywater from a sink. With the use of Saniflo Sanicompact through Mid-City Supply, Ameri-Can was able to build custom portable pods for the 2021 Super Bowl LV in just two weeks with a timely setup of 15 minutes on site. The pods included ground level ramps with connected systems that tied into waste tanks through 1-inch flex discharge pipes.

Result: Overall, labor time decreased. With the result of a clean, time-efficient installation, Campbell stated with satisfaction in completion of the project that, “Saniflo units

really hold their own when faced with high-volume usage in a large public gathering,” says Campbell. “Besides combining this benefit with ADA compliance, the company also offers a broad range of reliable options for us to meet customer needs. The customer service and warranty support are also outstanding.” **800-571-8191; www.saniflo.com**

Snow melt system installed on campus pedestrian bridge

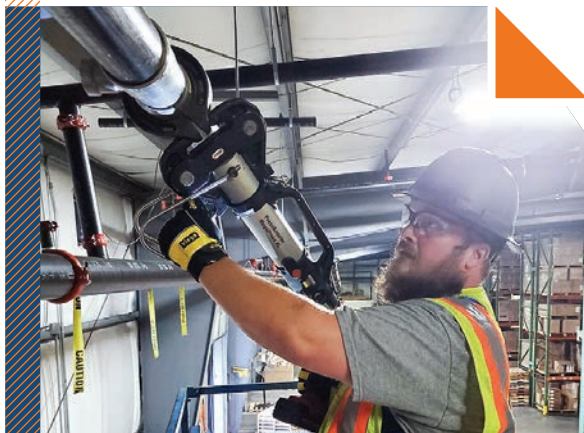


Problem: At 15 feet wide and 970 feet long, spanning across an interstate highway, a street and railroad tracks, the UVU Pedestrian Bridge on the Orem campus of Utah Valley University provides safe, cross-campus access to 5,000 students daily. University officials sought a solution to safely remove snow from frequent storms in the area. The structure's height (22 to 35 feet above ground) presented its builders with a major construction challenge.

Solution: The original specification called for the hydronic-distribution piping on the bridge's underside, feeding the snow melt grid, to be built with 4-inch steel pipe. Installers would be assigned to weld the steel pipe to feed the snow melt grid on the bridge's underside. Mechanical contractor Thermal Engineering persuaded the engineer to specify **PP-RCT** from **Uponor** instead. The lightweight, noncorrosive plastic polymer would be easier and safer to handle, even while using heat-fusion machinery to make pipe connections 30 feet in the air. The PP-RCT weighs only 63 pounds.

Result: A total of 1,900 linear feet of PP-RCT, from 2 1/2 inches to 4 inches, performs a supply-and-return function, transporting a warm glycol solution to-and-from a boiler to the snow-melt grid. The bridge is designed to move up to 18 inches in all directions, according to Thermal Engineering's Aaron Frailey. “I was concerned about the joint integrity of a steel piping system with all that movement, and I really liked the flexibility of PP-RCT to handle it.” **800-321-4739; www.uponor-usa.com**

Retrofit in active warehouse possible with press fittings



Problem: A warehouse in Grantsville, Maryland, needed to retrofit 1,340 feet of gas line without closing the busy facility. Going from a dry sprinkler system to a wet one meant the warehouse had to be heated. Workers needed to get in and out quickly while avoiding heavy forklift traffic.

Solution: BYCO Enterprises was picked to run the gas line and install 12 Reznor heaters in the 120,000-square-foot facility. Installers ran about 200 feet of 3-inch gas pipe and 420 feet of 2-inch pipe. The lines transitioned down to 1 1/4, 1 and 1/2 inch in different locations. Four forklifts move constantly throughout the warehouse, so project foreman Wesley Brenneman explained that his crew would shut down an aisle when needed, then get in and out as quickly as possible so they weren't holding up the warehouse workers any more than necessary. The warehouse job was BYCO's first use of **MegaPress**. Brenneman said BYCO first got to know **Viega** products when the company started using ProPress for exposed fire-suppression systems a few years ago. Once they realized the speed afforded by press fittings, BYCO visited Viega's New Hampshire Seminar Center and got certified for PureFlow PEX systems, too.

Result: Traditional methods, such as threading or welding, could have potentially closed the warehouse for a couple months. BYCO was instead able to allow the warehouse to stay open while wrapping up the job in only about three weeks using press technology. 800-976-9819; www.viega.us





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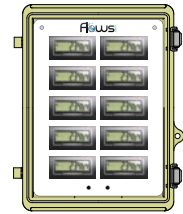


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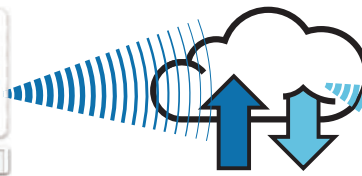


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Visit www.mcaa.org

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Kansas City Marriott, Kansas City, Missouri.
Visit www.phccweb.org/connect

Oct. 21-23

National Hardware Show,
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Visit www.nationalhardwareshow.com

Nov. 3

Canadian Institute of Plumbing & Heating (CIPH) Exhibition West,
Pacific National Exhibition, Vancouver,
British Columbia, Canada. Visit www.ciph.com

Nov. 12

Southeast Wisconsin Plumbing Seminar,
Comfort Suites, Johnson Creek, Wisconsin.
Visit phcc-wi.org/plumbing-seminars/

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Wisconsin Plumbing Seminar,
virtual only.
Visit phcc-wi.org/plumbing-seminars/

January 12-13, 2022

Wastewater Equipment (WEQ) Fair,
TIAA Bank Field, Jacksonville, Florida.
Visit weqfair.com

Jan. 31-Feb. 2

AHR Expo, Las Vegas Convention Center,
Las Vegas. Visit ahrexpo.com

Feb. 8-10

National Association of Home Builders (NAHB)
International Builder's Show,
Orange County Convention Center, Orlando.
Visit www.buildersshow.com

Feb. 8-10

Kitchen & Bath Industry Show (KBIS),
Orange County Convention Center, Orlando.
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Feb. 21-24

Water & Wastewater Equipment
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