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January 2022

# Plumber™

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Mr. Rooter Plumbing of Virginia Beach technicians Shane Pittman, left, and Tim Gaffey feed the line in as the two clean and camera a clean-out at a residential property. Gaffey is watching the screen to look for progress of the epoxy gun. Brian and Deborah Poole started the company in 2016 and offer many services, including sewer, water and gas line installation and repair; drain cleaning and jetting; pipe descaling, cleaning and coating; water fixture maintenance — heaters, purifiers, softeners, boilers; and emergency plumbing repairs.
**(Photography by Kevin Blackburn)**

### Coming Next Month - WWETT Show Issue, Residential Plumbing

- Plumber Profile: Bright Side Plumbing (Overlund Park, Kansas)
- Industry Insider: Anja Smith

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# "NUFLOW IS THE WHOLE PACKAGE."

## PROfile
**NuFlow Certified Contractor**

Mike Lomonaco became a NuFlow Certified Contractor in November 2020. After one year with NuFlow, his business has doubled in revenue.

**"We more than double our monthly revenue on a regular basis, sometimes up to quadruple revenue versus just plumbing work alone. Instead of subbing out lining work, now we are getting calls from other contractors to do the work."**

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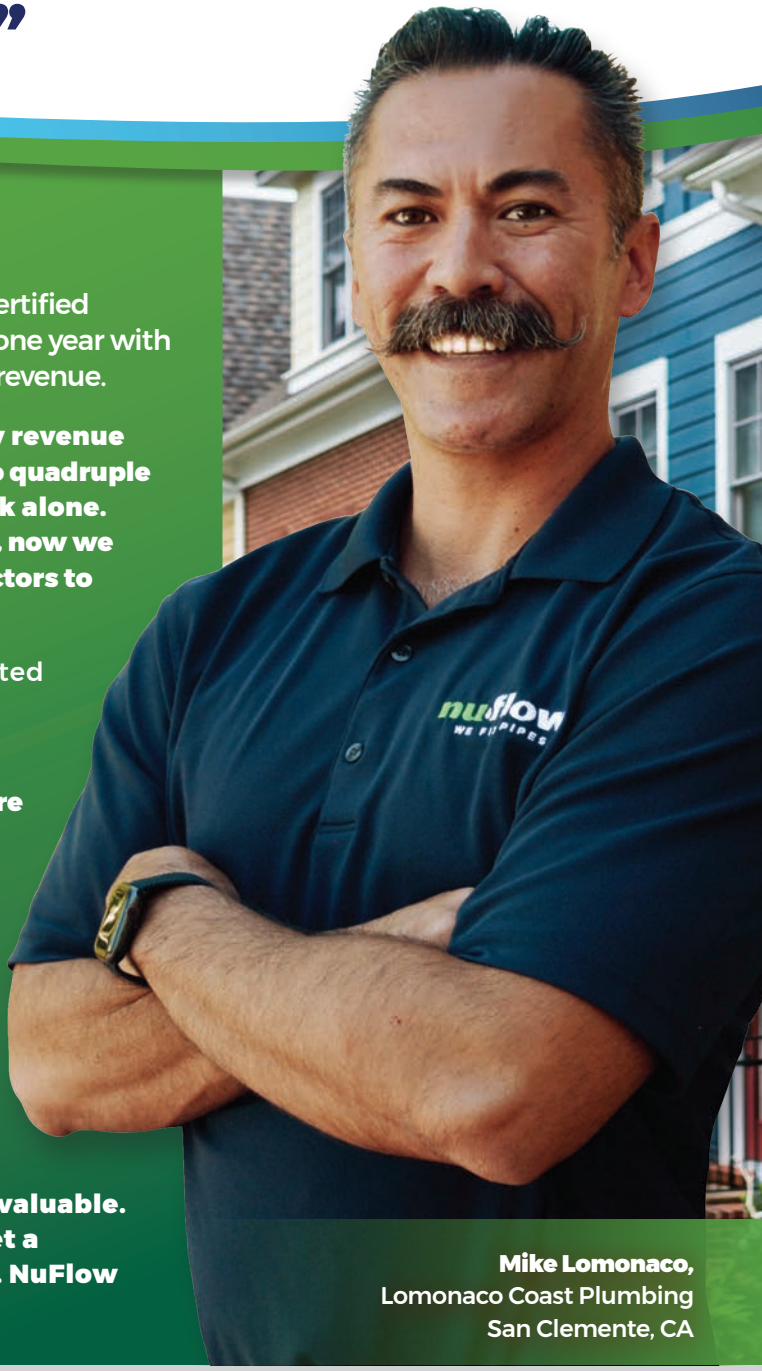


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Cory Dellenbach

# In With the New

## Making subtle changes with your company with a new year can bring a level of freshness to your long-running business

And here we are again, starting a new year. Last year just flew by for me thanks to being so busy between work and family life. Hopefully your 2021 was just as fast because of how your plumbing company was doing.

There are always new things happening every year and some things that remain the same. That can be said about your plumbing company with new hires, new trucks, whatever. It can also be said with *Plumber* magazine this year.

If you aren't changing up little things with your company from time to time it becomes stagnant. Even if you can change up your marketing material it's better than keeping the same ads running for several years. Don't be afraid to change.

We're making some changes with *Plumber* magazine and we hope you enjoy them!

### THE NEW

As with any new year, there's always something new in *Plumber* magazine. This year we're launching a new feature and it's primarily based on some of our discussions with you on your service vehicles.

Our Rolling Billboard feature is a look at some of your service vehicles — trucks, vans, etc. — that you are using for your company.

We are asking you, the plumber or owner of a company, to simply take a photo of the outside of your service vehicle with your company's logo or lettering on the side of it and tell us about it. Tell us the story behind the logo or how you came up with the design of it.

Along with that photo, we're asking for a photo of the storage area of that service vehicle and tell us what you use for storage — is it a build-it-yourself shelving system or did you purchase it from a manufacturer?

We know how you feel about your service vehicles. They are your pride and joy. Why not share that with us and brag about them a little bit? You can email us high-resolution photos and a description of the service vehicle, along with your contact information, to editor@plumbermag.com.

### THE OLD

Of course we're bringing back some of our long-running features also as we start this new year. All three of our Industry Insiders — Randy Lorge, Anja Smith and Anthony Pacilla — are back. This month we're kicking off with Randy.

If you ever have a question for any of them, feel free to email me that question and I'll pass it along to them.

> If you aren't changing up little things with your company from time to time it becomes stagnant.

We also continue our product focus and product news features this year, where we show you the latest in plumbing tools that could help boost your company profits. Flip through the pages and find something that you could use on your service vehicles.

### HIGHLIGHT YOU

Finally, we are still profiling your plumbing companies. If you own a plumbing company, it might be a good fit for a profile in *Plumber*. Reach out to me and tell me a little bit about your company and your story.

I love hearing your stories and sharing them with our readers. You can always reach me at 715-350-8436 or via email at editor@plumbermag.com.

Enjoy this issue and happy new year!

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## LOOKIN' GOOD

### Image is Everything

"A truck's appearance reflects on the kind of work you'll do. You never get a second chance to make a first impression," says Julius Voss, owner of Julius Voss Plumbing & Construction in Cleveland, Mississippi. "I get compliments all the time how neat and clean the truck is." That's one way of portraying an image of professionalism. In this online exclusive, several companies discuss the various tactics they implement to look attractive to customers.

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## TO THE TOP

### Press Fittings Help Plumber Conquer Remote Mountain Job

Press tool technology can be very convenient and effective depending on the type of job you're taking on. Case in point, the job featured in this online exclusive. To replace 44 couplings on a 1,000-foot-long waterline running from a mountaintop tank to a Boy Scout camp and still keep the job profitable, the contractor relied on press tools.

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## OVERHEARD ONLINE

*"The time for compromise is not while you're negotiating the partnership agreement. The time for compromise is after, when you're working together. If you compromise up front, you have to live with it forever."*

*— The Risks and Rewards of Business Partnerships*

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## A HELPING HAND

### Creating a Symbiotic Relationship With the Competition

Either a customer is loyal to one plumbing company or another. You're not supposed to help out the competition, right? Not necessarily. With plenty of work to go around, two companies in Green Bay, Wisconsin, have developed a mutually beneficial bond rather than seeing one another as foes. Read all about it in this online exclusive.

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# IDEAL OPPORTUNITY

Virginia couple finds the right franchise opportunity in Mr. Rooter and have built a successful branch

By Giles Lambertson | Photography by Kevin Blackburn

## Mr. Rooter Plumbing of Virginia Beach, Virginia Beach, Virginia

| | |
|---|---|
| OWNERS | Brian and Deborah Poole |
| FOUNDED | 2016 |
| EMPLOYEES | 15 |
| SERVICES | Sewer, water and gas line installation and repair; drain cleaning and jetting; pipe descaling, cleaning and coating; water fixture maintenance — heaters, purifiers, softeners, boilers; and emergency plumbing repairs |
| SERVICE AREA | Southside Hampton Roads area |
| WEBSITE | www.mrrooter.com/virginia-beach/ |

Brian and Deborah Poole knew that high-quality plumbing services were in short supply in their little area of coastal Virginia and the couple had goals to open their own company.

The couple did that by landing a Mr. Rooter Plumbing franchise. The two opened their plumbing shop to serve greater Virginia Beach and the surrounding area of Southside Hampton Roads in 2016.

"My husband and I knew we wanted to start our own plumbing company here and a friend of ours heard of this franchise opportunity and told us about it," says Deborah Poole, who is vice president and concentrates on service, sales and marketing. "It was just the two of us at that point and we thought the franchise was a great way to get into the business."

That company, Mr. Rooter Plumbing of Virginia Beach, has steadily grown in business volume in the ensuing years. Today the company is actively diversifying into related services.

## FINDING THE ONE

The couple already had some experience in the industry. Deborah had previously been employed by a Hampton Roads commercial contractor that focused on large-scale commercial projects, offering HVAC and plumbing services. They met while both worked for a large mechanical contracting company.

Brian earned an MBA in 2014 from the College of William & Mary in nearby Williamsburg, in anticipation of one day running his own plumbing services company. That day arrived two years later after the couple flew to Waco, Texas, to the corporate headquarters of Neighborly, the world's largest consortium of home service brands, including Mr. Rooter Plumbing. "We wanted to see if it made any sense for us," Deborah says of their Texas trip.

There are other franchise opportunities for aspiring plumbers, but the Pooles chose Mr. Rooter "for a couple of reasons." A key one, she says, was the impressive roster of successful home services brands and franchisees under the Neighborly umbrella — it has more than 4,000 franchise-holders in nine countries. "And they already had what we knew we wanted in our business, the culture and customer service emphasis and the value system we wanted to represent at our company."

Mr. Rooter Plumbing of Virginia Beach owners Deborah and Brian Poole standing in front of one of their vans. The two started the company after seeing a need for quality plumbing service in the area.

Tim Gaffey gets the expoxy pump (Picote) ready for a job site at a residential property in Virginia Beach. In the Virginia Beach area, many homes are close together and access to backyards can be difficult so setting up and preparing all the needed equipment saves time and often trips through a customer's home.

Technicians Adem Riecken and Sam Bailie work with the tow-behind Spartan jetter after moving it into a client's garage for better access to the clean-out.

Technicans Bryce Cummings, left, and Joe Hartley discuss a project and what the plan will be to finish it up.

> "I bring to the business a skill set to take care of our employees, to care about and coach them instead of yell at them. But I also am not afraid to push them outside their comfort zone."
>
> ***Deborah Poole***

Neighborly's "code of values" reflects the optimism and positive approach of Don Dwyer, a businessman who founded Neighborly and eventually landed in the Entrepreneurship Hall of Fame. The values are categorized into respect, integrity and customer focus, and range from striving to maximize customer loyalty to communicating honestly to "speaking calmly and respectfully without profanity or sarcasm."

Deborah is the day-to-day caretaker of the company's culture, cultivating and maintaining Neighborly's core values. "I passionately believe in running a family-owned business. I'm the mom. The guys express to me all the time how they would get yelled at in other companies, pushed around, have bad language thrown at them. I bring to the business a skill set to take care of our employees, to care about and coach them instead of yell at them.

"But I also am not afraid to push them outside their comfort zone."

## BUILDING A REPUTATION

The Pooles now manage 15 employees who answer calls in their Mr. Rooter-red shirts across the South Hampton Roads area of Virginia. Three-quarters of this work is residential, the remainder in light commercial establishments such as restaurants.

The company offers some two dozen wide-ranging services, including sewer, water and gas line installation and repair, drain cleaning and jetting, pipe descaling, cleaning and coating, water fixture maintenance (heaters, purifiers, softeners, boilers), and emergency plumbing services.

Emergency work is a calling card of Mr. Rooter franchises: Plumbers are available 24/7 and the emergency runs cost a customer the same regardless of the day of the week or hour of the day. The flat rate reflects one of those aforementioned values — striving to maximize customer loyalty.

The company also repairs pipes damaged during freezes. However, that call rarely comes to the Virginia Beach office

Continued

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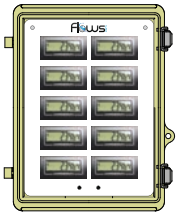

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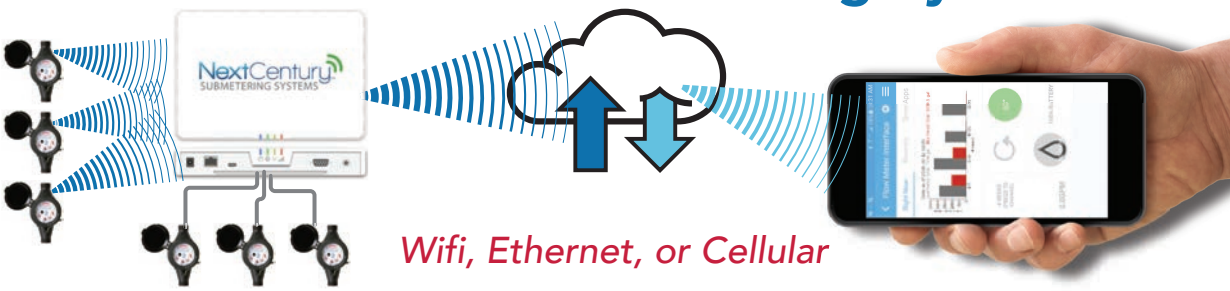


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> "Our reputation is growing and we're getting calls to work on larger pipe."
> **Deborah Poole**

since as the average minimum wintertime temperatures is 34 degrees. On the other hand, between 45 and 50 inches of rain falls each year, which can test sewer and drain systems. Therefore, a more frequent call is to clean and restore clogged drainlines and sewer pipes.

Plugged small lines are cleared and toilet and laundry tub clogs broken up using an assortment of Spartan Tool and RIDGID hand and drum cable machines.

Larger diameter and more gravely plugged lines are flushed with a Spartan Warrior trailer jetter. It is a 74 hp unit with a 300-gallon water tank, producing 4,000 psi at 18 gpm, and can clear lines up to 24 inches in diameter, which is sufficient for most any job the Pooles take on.

For corroded and encrusted pipe that resists clog removal by water pressure alone, company technicians have Spartan Revolution M2 and M4 milling machines, from the line of machines created by Spartan Tool and Picote Solutions.

The Revolution models are specially designed for use in pipelines with traps and multiple bends and feature an especially flexible encased cable. Poole says the M2 and M4 models in the company's equipment yard can clear pipes from 2 inches to 12 inches in diameter, and a larger model handles 16-inch pipe. "Our reputation is growing and we're getting calls to work on larger pipe."

To remotely keep an eye on the thoroughness of a cleaning process, the company uses RIDGID SeeSnake cameras. For some inspection work, it relies on a Quick Sight 40 camera. The video unit from www.draingear.com, an online store for American Pipelining Supplies, weighs 22 pounds and features a 23 mm stainless steel waterproof camera head, wireless keyboard for inputting text and rechargeable six-hour battery.

Seven red vans carry the equipment to the home or business needing plumbing attention. When pipeline installation and similar jobs require excavation work, the company typically relies on its network of subcontractors to perform the work, but sometimes an excavator is rented. When the Spartan jetter needs towing to a site, the trailer is hitched to one of the company's two pickups.

The team at Mr. Rooter Plumbing of Virginia Beach at their company shop along with some service vehicles. From left, Joe Hartley, Shane Pittman, Sam Bailie, Tim Gaffey, David Diggs, Bryce Cummings, Adem Riecken, Caitlin Morgan and Kevin Brown. Front, Michael Poole, Deborah Poole, Brian Poole.

## A durable enterprise

Deborah and Brian Poole did their due diligence before buying a Mr. Rooter Plumbing franchise in 2016. The business is flourishing four years later because they continue to keep a vigilant eye on industry trends, carefully weigh pros and cons of possible new services, and market their company like they mean it.

When the married couple opened Mr. Rooter Plumbing of Virginia Beach, they brought with them years of experience in the industry as well as formal business management training. None of it has gone to waste.

They consciously look to vendors for emerging trends and technology information. They pore over industry literature to stay on top of developments. "We are avid readers," Deborah says. They scrutinize the possible upsides and downsides of any new service they are considering and run financial models to see what it will mean in terms of new customers, additional employees and ROI.

"We carefully monitor each [marketing] campaign and app to understand our customers better," she says. "How our customers are finding us and what they are looking for when they do is critical data that we analyze weekly. We have peers and friends in the business, some of whom are amazing technicians themselves, but they really struggle on the ad and marketing side, the things that make our phone ring."

This methodical approach is building a durable enterprise. "Amazingly, it has gone better than we planned." She says the key to their success has been diligence and patience. "In the beginning, it is important to focus spending to maximize smaller budgets. It is equally important to practice restraint, making smart purchases when the time is right. We knew at the outset we would need a jetter, for instance, but we waited until the right time."

She says financial restraint lets them "pay a great wage to our team as well as give back to the community. It has allowed us to stay cash positive and, during the virus, to not lay off anyone.

"When the virus first appeared and shut down much of the economy, we were nervous. We had daily meetings to keep up with changes and to plan how we would continue to support our employees and their families, and keep them and our customers safe."


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Technician Shane Pittman uses duct tape to hold the lines from the camera and epoxy hose to the brush system so it all moves as one unit.

## A DIVERSE TEAM

"We want diversity in our team and our services," Deborah says. "It allows us to support all of our clients' needs. By being able to offer so many services, we can hire apprentices and develop them into experts in different areas — drain cleaning, water heater repairs, water and sewer line repair and replacement.

"So, we enjoy the diversity of our services, but we continue to grow our underground work. We have expanded into pipe rehabilitation, including descaling and coating, and that has really taken off for us. We see it continuing to expand in the commercial world. The technology is just as applicable to large-diameter pipe and chilled waterlines as it is to sewer lines in an apartment building where you can do the work without moving tenants."

Specifically, the company has become a certified Picote Brush-Coating installer. The Picote system uses a range of cleaning tools to prepare an aging pipe for new life. Picote brushes then apply a specially formulated epoxy resin inside the pipe. The coating can range from a single thickness less than a millimeter in depth to several coats that can add up to 4 mm.

> "By being able to offer so many services, we can hire apprentices and develop them into experts in different areas — drain cleaning, water heater repairs, water and sewer line repair and replacement."
>
> **Deborah Poole**

The company will expand its pipe rehab work this year when it will begin to offer pipe lining. "The ability to go trenchless in commercial rehab work is just huge. It opens up a wealth of opportunities. So, we will grow that division of the company, but we won't be getting out of the plumbing repair business."

Three of the seven technicians in the company were certified by Picote — as was Deborah Poole herself. "Some of our customers think it a little strange when they see me out there looking at camera footage for one of our coating jobs. I get super excited about it and I think it is valuable seeing firsthand what is happening."

The next goal is to hire more plumbers — including a female plumber. "Especially for the coating work. The trenchless rehab task is a perfect place to bring females into the trade."

The Mr. Rooter Plumbing team in Virginia Beach may not have women in the field yet, but its crew includes master plumbers, drain cleaning and water-heater specialists and one apprentice plumber. The company is looking for a second apprentice.

"We feel very blessed and honored to be doing well enough to hire another apprentice and bring him or her into the trade." P

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# A Compact Profit Center

## Spartan 100 cable machine keeps drains flowing — and revenue, too

***By Ken Wysocky***

Working for many plumbing and drain cleaning companies taught David Meyers a lot of things that have served him well as the owner of Greenwize Plumbing in Austin, Texas. One chief lesson: You get what you pay for, so don't skimp when you invest in equipment.

That explains why one of the first pieces of equipment Meyers bought was a compact Spartan Tool 100 cable drain machine.

"I bought it about five years ago, right after I started my company," he says. "I've been using them for decades while working for various companies, and there's no doubt in my mind that Spartan drain machines are the best ones out there.

> "It has plenty of power. If you know what you're doing, you're in and out of jobs in 30 minutes or so, which allows us to do more jobs per day."
>
> ***David Meyers***

"It cost just under $3,000, but you have to spend money to make money," he continues. "That machine paid for itself after six months. Some guys just don't want to spend the money, but I figure if a machine gets the job done faster and more efficiently, that's what we go with."

There are plenty of reasons why Meyers likes the Spartan 100. For starters, its compact design (the unit measures 18 inches wide by 17 inches tall by 19 inches deep) and 55-pound weight makes it easy to transport and get into tight spaces.

"If we can't get access anywhere else, we often take out the cable and carry it up onto roofs to go down through a vent," he notes.

| | |
|---|---|
| **COMPANY** | Greenwize Plumbing, Austin, Texas |
| **OWNER** | David Meyers |
| **MACHINE** | Spartan Tool 100 cable drain machine |
| **FUNCTION** | Unclogging lines 1 1/4 to 4 inches in diameter |
| **FEATURES** | Compact design: measures 18 inches wide by 17 inches tall by 19 inches deep; weighs 55 pounds; 115-volt, 1.4-amp electric motor; 25-foot power cord; "smart"-motor feature automatically provides more power when machine encounters a tough clog; comes with either 75 feet of 1/2-inch-diameter cable or 100 feet of 5/16-inch-diameter cable; two-wheeled dolly for easier transport. |
| **RETAIL COST** | About $1,625 |
| **WEBSITE** | www.greenwizeplumbing.net |
| **SPARTAN TOOL WEBSITE** | www.spartantool.com |

The 115-volt, 1.4-amp electric motor provides plenty of power for a smaller drain machines. And when it encounters a tough clog, it senses the need for more power and automatically provides it.

"The motor is badass," he says "I've never had a problem with it."

Furthermore, the unit is very durable and requires little maintenance, he says.

Greenwize Plumbing technician Joe Patten cleans a residential drain line using a Spartan Tool 100 cable drain machine with the cable drum tilted upward toward the raised cleanout for a better working angle for the cable. (Photo courtesy Greenwize Plumbing)

## BETTER PRODUCTIVITY, PROFITABILITY

But the bottom line is it unclogs lines, quickly and efficiently.

"This machine gets the job done without any problems," says Meyers. "It has plenty of power. If you know what you're doing, you're in and out of jobs in 30 minutes or so, which allows us to do more jobs per day.

"I've tried several other brands of drain machines, and this one just makes things so simple and fast."

The Spartan 100 is designed to handle lines from 1 1/4 to 4 inches in diameter. It comes with either 75 feet of 1/2-inch-diameter cable or 100 feet of 5/16-inch-diameter cable. An independent rotating inner drum helps prevent cable kinking and a direct-drive feature offers a cable-saving slip clutch.

But one feature that really pays big dividends is an adjustable drum that can be fixed at any working angle between zero and 90 degrees, Meyers says.

"If you have a cleanout that's located higher off the floor, you can tilt the drum up that way and if the cleanout is really low, you just position the drum completely upright," he explains. "It allows you work at an angle that helps the cable work more effectively," he adds. "It makes you wonder why more drain machines don't offer this feature."

## VERSATILE MACHINE

While Greenwize focuses primarily on residential service and repair work, Meyers — unlike many other plumbers — also embraces drain cleaning to diversify his services and generate an additional revenue stream. He says the Spartan 100 — which he uses mostly on sink, tub and shower drains — is a great entry-level drain machine because of its power, effectiveness and versatility.

But there are times when the Model 100 punches above its weight to handle large clogs in bigger diameter pipes, Meyers notes.

"We keep the 1065 in the shop because it takes up a lot of room in a van," he says. "So sometimes I give the 100 a try first, and if that doesn't work, I go get the 1065.

"I've unstopped a bunch of mainline sewers with the 100 because it's so powerful and the cable is so rigid."

As an example of the machine's capabilities, Meyers cites a hamburger chain outlet that had a recurring problem with grease clogs in 4-inch diameter PVC pipe. After several other plumbers failed, Greenwize got the call, he says.

"It took us about two hours, but we kept going at it with a 'grease spoon,'" he recalls. "There were several two- to three-foot-long sections of the pipe that were clogged solid with grease.

"We could feel it was making progress, so we just kept working it.

"A lot of plumbers will give it one shot, then leave when they can't unclog the line," he continues. "But we kept giving it the old college try and finally broke through."

## SOLID INVESTMENT

The company, which employs three people and serves the greater Austin area, also owns other Spartan equipment, including a compact Traveler pipeline-inspection camera system and a beefier Model 1065 designed for 3- to 10-inch-diameter lines.

To Meyers, owning Spartan equipment is a sign that a plumber or drain cleaner has made it in the industry.

"You know you've made it big-time when you own a Spartan 100 or 1065," he says. "I've used other brands of drain machines, but when I bought that first 100, I never looked back.

"I wouldn't recommend anything else but Spartan machines," he adds. "Why wouldn't you want to work with the best equipment around?"

# Frasier's Plumbing and Heating

## Rhinelander, Wisconsin

When it came time to develop a logo or brand for Frasier's Plumbing and Heating in Rhinelander, Wisconsin, owners Phil and Joanna Frasier got some help from Phil's mom, Joan. She came up with the idea for a rubber duck in 2003. Jared Frasier and another marketing person came up with the scheme after some hard work. There were also conversations about putting the duck in a tuxedo, but the team settled on the duck with a uniform shirt. Phil then developed the slogan "Considerate People, Considerate Service, Consider it Done," which was trademarked in 2003. Joan's idea for the duck was because, as she put it, "everyone loves a duck, especially a little happy duck." The slogan and the duck are on all of the company's 19 service vehicles, including the parts running vehicles and the install trailer. The truck shown here is a Chevy Express 3500 fitted with a 12-foot FRP from BayBridge Mfg. All of the company's service vehicles are also equipped with shelving and storage solutions from American Van Equipment. For more information on Frasier's, go to www.frasiers.com.

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Kate Zabriskie

# When's the Last Time You Scheduled a Meeting With Employees?

Regular one-on-one talks with crewmembers creates a better work environment for everyone

***By Kate Zabriskie***

*There are only two of us in my department. Why should I bother with a formal meeting? We sit right across from each other.*

*I tried meeting individually with my direct reports, but they had nothing to talk about. Besides, we're all adults. We know what we're supposed to be doing at work.*

Without trying too hard, it's easy for managers to compile a long list of reasons not to meet with the people they supervise. And guess what? The volume of reasons does not outweigh the value and importance of a regularly scheduled exchanges with a direct report.

If used correctly, over time managers and employees can enjoy many benefits by meeting one on one.

1. **Visible appreciation:** Time is currency. If managers carve out time for their people and are prepared when they meet, they show they value employees.
2. **Better thinking:** Regular one-on-one meetings give managers and employees space to step away from the urgent and immediate and to think more holistically and strategically about work, goals and development opportunities.
3. **Stronger results:** Accountability tends to improve when people have an opportunity or a requirement to report on their progress.

## TAILOR THE MEETING

Once a manager has bought into the value of one-on-one meetings, the next step is to execute them in a way that works for the manager and the employee. Good one-on-one meetings are not one-size-fits-all activities. That said, there are a few guidelines that can make a one-on-one meeting successful.

1. **Pick a schedule and stick to it.** One-on-ones shouldn't regularly disappear from the calendar simply because something else suddenly comes up.
2. **Choose a frequency that makes sense.** For some people, meeting once a month may be enough. For others, meeting weekly may be more appropriate. Every relationship is different. Furthermore, circumstances evolve. Depending on what's happening inside and outside of the business, an employee's needs could change drastically. Meeting frequency should be looked at from time to time. If the rate of meetings is correct, managers and employees should not routinely find themselves with no reason to meet.
3. **Follow a written agenda.** Well-run one-on-one meetings are not free-for-all conversations. They follow an agenda just as any other good meeting does. A meeting agenda might include such topics as current projects, progress on yearly development goals, current challenges and so forth.
4. **Put employees in the driver's seat by having them manage and document the agenda.** As a manager, you may create the initial agenda format. But once you do, your employees should take ownership of the documents associated with their one-on-one meetings.

## OVERCOME OBSTACLES

One-on-one meetings rarely go from nonexistent or dysfunctional to perfect overnight. For that reason, managers should prepare to overcome a variety of obstacles.

**Obstacle 1: Employees question the new meeting.**

Solution: Reduce the surprise factor. If a manager has never held one-on-one meetings, they might come as a surprise to employees. To avoid feelings of uncertainty, confusion, or worse, mention the idea before loading the calendar with unexpected surprises."*This year, I would*

*like to focus more on individual development. Within the next week or two, please expect to see a meeting request from me. I believe we will all benefit if I spend time with each of you individually at regularly scheduled intervals. How often we will meet will depend on each of your needs and what we decide together."*

**Obstacle 2: An employee doesn't take charge of the meeting.**

Solution: Show them how. A good agenda can go a long way toward making the conversation flow. Although employees should have ultimate responsibility for keeping the agenda, this may take time. In the beginning, managers may have to explain what they want to see. *"For our first few meetings, I'll prepare the agenda. Once we've found our groove, my plan is to turn it over to you to own. This means you'll add to it between meetings and bring a copy for you and me when we meet."*

**Obstacle 3: An employee gives short or general answers to questions.**

Solution: Get specific. The more focused a manager's questions are, the better the conversation tends to be. For example, instead of asking, *"What are you working on?"* a manager might say, *"Tell me about the project that is going best right now and why that is."*

**Obstacle 4: An employee seems unresponsive.**

Solution: Leverage silence. When managers don't get immediate feedback, they sometimes mistake silence for non-responsiveness. It's important for managers to remember they already know the questions. The employee is hearing them for the first time and may need some time to digest and think about what's being asked. Instead of rephrasing questions that don't produce an immediate answer, managers need to get comfortable with letting silence sit in the room.

## KEEP ON TRACK

Like anything, one-on-one meetings can get stale. It's important to look at the format and frequency from time to time and to solicit feedback regarding what's working and what isn't.

If you've fallen out of the habit of holding regular one-on-one meetings or if you're not getting all you could from them, now is the time to take another look. After all, can you really afford not to?

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*Kate Zabriskie is president of Business Training Works, a Maryland-based talent development firm. Reach her at www.businesstrainingworks.com.*

# Cut With Caution

## Chain knockers and cutters are powerful tools but need to be used correctly to avoid damaging pipe

*By Tim Dobbins*

The last thing you want from a tool designed to fix problems is for it to create new ones. Unless you take the time to knowledgably choose and operate the right chain knocker or chain cutter for your next pipe cleaning job, that could be exactly what happens.

When used correctly in the right applications, the capability of these tools to power through the toughest clogs, roots and blockages provides a gift to the pipe cleaning industry. Paying attention to the details of the environment and understanding the material options and specs of your individual system is key. Being careless can break equipment and damage pipes, making a seemingly simple job difficult and expensive.

### Choosing a chain cutter

After 15 years as a part owner and engineer for Arthur Products, Richard Rauckhorst says there are a lot of things a contractor should think about when buying a chain cutter.

> "The operator needs to know first and foremost what they are going to be cutting. Are they cutting roots, or are they cutting grease?"
>
> *Reinhart Laimer*

"You need to know what your objective is. Consider your environment and equipment to start off with and be very selective."

Obviously, the environmental conditions are going to vary with every job, but consider what you will most likely be handling and choose equipment accordingly. That sometimes means picking a tool built to adapt. "Every situation is unique. Customization when it comes to any nozzle is important, but when it comes to a chain cutter, it is ultimately important because there are a lot more moving parts to deal with," Rauckhorst says. "Also, don't get your expectations up too greatly as far as speed goes because you don't know the exact environment this is going to be in. It could be hair roots, which are easy to clean, or trunks that aren't so easy to clean."

SewerProShop owner and 30-year veteran of the chain cutter and drain cleaning industry Reinhart Laimer agrees. "The operator needs to know first and foremost what they are going to be cutting. Are they cutting roots, or are they cutting grease? Grease can be as soft as butter or as hard as a rock."

Once you've established the general conditions in which you will be working, take a good look at your equipment and understand that the effectiveness of a chain cutter is completely dependent on the pressure and flow you're able to produce. Without enough gpm or psi, a cutter can easily become another blockade in the pipeline.

"I need to know four technical parameters when helping a customer choose a cutter," Laimer says. "First, what is the flow rate of the pump? Second, [what is] the operating pressure? It is very important to know this information because if you don't use the right nozzle inserts with the right orifices, the cutter won't go up the line properly. Next is the hose size in diameter and then the length. This allows you to calculate friction loss."

Rauckhorst also talks of the importance of using a suitable amount power for any cutter or knocker. "When you have chain or cables or anything on a rotating head, you're adding mass," he says. "To get that mass to rotate, it requires more power, and that power comes from your system's water pressure and flow."

It boils down to knowing that the distance and effectiveness of any cutter or knocker is directly influenced by the specific system behind the head and what materials it is going through.

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## Material matters

A lesson we all learned at a young age is if you're not sure what something is, don't touch it. The same holds true when using chain cutters and chain knockers. Make sure you know what the pipe is made from and match the material of the cutter or knocker properly to avoid damage to both equipment and pipes. Do some research before pushing in a tool and revving it up to full throttle.

"We supply a cable system, a rower chain and link chain option based on the primary type of pipe you are going to be in whether it be PVC, clay, cast or steel," Rauckhorst says. "Let's say you are in PVC pipe with light hair roots, I would recommend the cable. The cable is very effective, and it can loiter and not damage the PVC. If you stopped a chain and let it spin in one spot, it would erode away the PVC."

Rob Broccolo Jr. began his career in the industry over a decade ago and he has owned and operated Professional Drain Services of Southern New England for the past four years. Through servicing the variety of drains the New England area has to offer, he has learned a thing or two. "I try to use non-carbide tipped chains in older pipes the first time around to make sure nothing breaks, but nine out of ten times, I'm using a carbide cutter," he says.

Manufacturers like RIDGID have readily available documentation for their chain knockers showing which of their products should be used in specific pipe materials. When in doubt, contact the manufacturer of your particular chain cutter or knocker and ask.

## Size according to the job

Choosing the proper size of cutter or knocker depends on the diameter of pipe to be cleaned. If you're unsure, ask the manufacturer. They will be able to provide assistance when purchasing and have documents to help contractors choose a model according to pipeline inside diameter.

The end goal is obviously to clean wall to wall, but Broccolo says that sometimes it's smart to start with a chain that is smaller than the diameter of the pipe. "A smaller cutter can help you to navigate through and give yourself an opening for the right size chain afterwards," he says. "You don't want to go too small because it could flip on you, but with some experience you get the feel for when to use that technique."

## Tricks of the trade

All three experts agree that with any chain cutter or knocker, it's best to proceed with caution. Knowing the details of the environment and materials you'll be working with is the first step, but even after that, they all mentioned other strategies to make sure their equipment lasts and the jobs get done.

"I always tell people to use a nozzle first to actually clean out the line from debris such as sand, silt and rocks before running the cutter through," Laimer says. "Our cutters spin at 4,000 rpm; if they hit rocks in the line, it can severely damage the cutter and the pipe. It is a root cutter, not a rock or concrete cutter."

Broccolo adds that he uses a camera for visual inspection to help him decide which cutter or knocker he should use or at least which one to start with. Camera visuals can also inform contractors if there are multiple types of blockages in the line such as wipes and roots. In that situation, Broccolo opts for a different style head on his cutter. "Penetrating heads are nice for when you're going into wipes or a soft blockage," he says. "They provide a little grab to the front so they can grab and twist, allowing the chains to get in there and start spinning wall to wall."

## Lessons learned

Experience is always helpful when operating any tool, for any job. Taking a few extra minutes to get things done right the first time will always be more efficient than the time it takes to clean up mistakes. "I've heard of people that either break the cable or flip the chains over inside the line and get it stuck," Broccolo says. "Let's say they're using a 102 or 204 from RIDGID and not using the clutch properly. A lot of times if you have too much exposed cable, it gets a chance to flip over on itself and next thing you know it jams and you end up snapping your cable."

Breaking a cable and leaving a knocker stuck in a line is usually not a quick, easy fix. "If you're lucky, you're able to get it out. But if you are in a deep line and you didn't take the time to set it up properly and use it properly and you happen to make that mistake, the next thing you know, you're fixing your machine on site wasting time and money and it's embarrassing in front of your customers," Broccolo says.

Cleaning with cutters and knockers is about evaluating each situation and knowing your equipment well, because when used correctly, their effectiveness as a cleaning tool will boost your profitability and efficiency.

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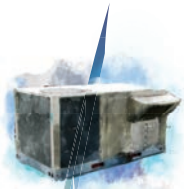
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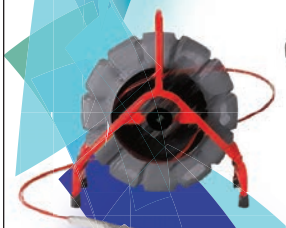
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Randy Lorge

# Totally Loaded

## Taking a closer look at the sizing of the water distribution system

***By Randy Lorge***

In September of 2020, I wrote an article for *Plumber* ("Size Matters") related to sizing water distribution systems and retrofitting them with tankless water heaters and/or water treatment equipment.

The goal of that article was to give you a heads-up, so to speak, that simply replacing a tank-type water heater with a tankless type, was more than making a couple cuts in the piping and splicing in a new unit. I shared some insight on the amount of pressure loss and possible consequences the water distribution system could incur from installing these types of heaters and water softeners if not properly sized.

In this article, we'll take a step back and look at how to properly assign the total loads to the entire water distribution system. My following articles will pull everything together and eventually size the entire system properly.

As I love to point out in my articles, there are different codes and differently written definitions, yet in the end we, as plumbers, are required to understand them and install safe plumbing systems in accordance with our local code and the Authority Having Jurisdiction (AHJ).

**Step 1: Define the water distribution piping.**

- **Code A:** In a building or premises, a pipe that conveys potable water from the building supply pipe to the plumbing fixtures and other water outlets.
- **Code B:** A pipe within the structure or on the premises that conveys water from the water service pipe, or from the meter when the meter is at the structure.
- **Code C:** "Water distribution system" means that portion of a water supply system from the building control valve to the connection of a fixture supply connector, plumbing fixture, plumbing appliance, water using equipment or other piping systems to be served.

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**Step 2: Determine the use of the fixtures to which water will be supplied.**

- **Private or Non-Public Use Fixtures**
  - **Code A:** Applies to plumbing fixtures in residences and apartments, to private bathrooms in hotels, hospitals and health care facilities, and to restrooms in commercial establishments where the fixtures are intended for the use of a family or an individual.
  - **Code B:** In the classification of plumbing fixtures, "private" applies to fixtures which are not public.
  - **Code C:** Nonpublic means, 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.

**Public Use Fixtures**

- **Code A:** Public or Public Use. Applies to plumbing fixtures that are not defined as private or private use.
- **Code B:** Public or Public Utilization. In the

Table 1

**Water Supply Fixture Units for Nonpublic Use Fixtures**

| Type of Fixture[a] | Water Supply Fixture Units (wsfu) | | |
|---|---|---|---|
| | Hot | Cold | Total |
| Automatic Clothes Washer | 1.0 | 1.0 | 1.5 |
| Bar Sink | 0.5 | 0.5 | 1.0 |
| Bathtub, with or without Shower Head | 1.5 | 1.5 | 2.0 |
| Bidet | 1.0 | 1.0 | 1.5 |
| Dishwashing Machine | 1.0 | | 1.0 |
| Glass Filler | | 0.5 | 0.5 |
| Hose Bibb: | | | |
| 1/2″ diameter | | 3.0 | 3.0 |
| 3/4″ diameter | | 4.0 | 4.0 |
| Kitchen Sink | 1.0 | 1.0 | 1.5 |
| Laundry Tray, 1 or 2 Compartment | 1.0 | 1.0 | 1.5 |
| Lavatory | 0.5 | 0.5 | 1.0 |
| Manufactured Home | — | 15 | 15 |
| Shower, Per Head | 1.0 | 1.0 | 1.5 |
| Water Closet, Flushometer Type | | 6.0 | 6.0 |
| Water Closet, Gravity Type Flush Tank | | 2.0 | 2.0 |
| Bathroom Groups: | | | |
| Bathtub, Lavatory and Water Closet–FM[b] | 2.0 | 7.5 | 8.0 |
| Bathtub, Lavatory and Water Closet–FT[c] | 2.0 | 3.5 | 4.0 |
| Shower Stall, Lavatory and Water Closet–FM | 1.5 | 7.0 | 7.5 |
| Shower Stall, Lavatory and Water Closet–FT | 1.5 | 3.0 | 3.5 |

[a] For fixtures not listed, factors may be assumed by comparing the fixture to a listed fixture which uses water in similar quantities and at similar rates.
[b] FM means flushometer type.
[c] FT means flush tank type.

Table 2

**Water Supply Fixture Units for Public Use Fixtures**

| Type of Fixture[a] | Water Supply Fixture Units (wsfu) | | |
|---|---|---|---|
| | Hot | Cold | Total |
| Automatic Clothes Washer, Individual | 2.0 | 2.0 | 3.0 |
| Automatic Clothes Washer, Large Capacity | b | b | b |
| Autopsy Table | 2.0 | 2.0 | 3.0 |
| Bathtub, With or Without Shower Head | 2.0 | 2.0 | 3.0 |
| Coffeemaker | | 0.5 | 0.5 |
| Dishwasher, Commercial | b | b | b |
| Drink Dispenser | | 0.5 | 0.5 |
| Drinking Fountain | | 0.25 | 0.25 |
| Glass Filler | | 0.5 | 0.5 |
| Health Care Fixtures: | | | |
| Clinic sink | 2.0 | 7.0 | 7.0 |
| Exam/treatment sink | 0.5 | 0.5 | 1.0 |
| Sitz bath | 1.5 | 1.5 | 2.0 |
| Surgeon washup | 1.5 | 1.5 | 2.0 |
| Hose Bibb: | | | |
| 1/2″ diameter | | 3.0 | 3.0 |
| 3/4″ diameter | | 4.0 | 4.0 |
| Icemaker | | 0.5 | 0.5 |
| Lavatory | 0.5 | 0.5 | 1.0 |
| Shower, Per Head | 2.0 | 2.0 | 3.0 |
| Sinks: | | | |
| Bar and Fountain | 1.5 | 1.5 | 2.0 |
| Barber and Shampoo | 1.5 | 1.5 | 2.0 |
| Cup | | 0.5 | 0.5 |
| Flushing Rim | | 7.0 | 7.0 |
| Kitchen and Food Preparation per faucet | 2.0 | 2.0 | 3.0 |
| Laboratory | 1.0 | 1.0 | 1.5 |
| Service sink | 2.0 | 2.0 | 3.0 |
| Urinal: | | | |
| Syphon Jet | | 4.0 | 4.0 |
| Washdown | | 2.0 | 2.0 |
| Wall Hydrant, Hot and Cold Mix: | | | |
| 1/2″ diameter | 2.0 | 2.0 | 3.0 |
| 3/4″ diameter | 3.0 | 3.0 | 4.0 |
| Wash Fountain: | | | |
| Semicircular | 1.5 | 1.5 | 2.0 |
| Circular | 2.0 | 2.0 | 3.0 |
| Water Closet: | | | |
| Flushometer | | 6.5 | 6.5 |
| Gravity Type Flush Tank | | 3.0 | 3.0 |

[a] For fixtures not listed, factors may be assumed by comparing the fixture to a listed fixture which uses water in similar quantities and at similar rates.
[b] Load factors in gallons per minute, gpm, based on manufacturer's requirements.

classification of plumbing fixtures, "public" applies to fixtures with unrestricted exposure to walk-in traffic.

- **Code C:** "Public" means, in the classification of plumbing fixtures, those fixtures which are available for use by the public or employees.

Remember, I didn't write the codes. I'm just writing about them! Haha!

**Step 3: Assign the Water Supply Fixture Units (WSFU) to the plumbing fixtures**

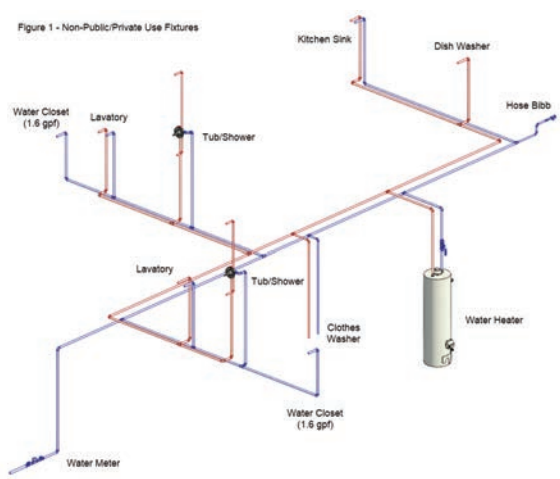
All plumbing codes have developed a table which indicates the WSFU values for various plumbing fixtures and appliances. These values can be traced back to the original research of a gentleman from the 1940s by the name of Roy B. Hunter. I'm not going to attempt to explain who he is and the incredible impact he has had on the industry it in this article, but I encourage you plumbing history buffs to do a Google search about him for more info.

Following is an example of the WSFU tables from Code C: *(see tables above)*

Notice that the top of each table indicates whether the fixture use is public or non-public. We will discuss this more in the future, but for now, let's focus on non-public use fixtures (Table 1).

Next let's break the table down a bit. The first column indicates the type of fixture or appliance. The second column (WSFU) is broken into three sub-columns: hot, cold, and total. For this next step, we need to gather the total loads and assign them to the following drawing

Figure 1 is a simple two bath home which we will use for this discussion.




For Code C, total loads would be as follows: 1/2-inch hose bibb/outdoor faucet (3.0), kitchen sink (1.5), dishwasher (1.0), clothes washer (1.5), 2-bathroom group (includes flush tank water closet, lav, and tub/shower combo) (four each at 8.0), for a total of 15.0

As I often try to do in my articles, here is a comparison of the total loads from Code A and B:

**Code A – Total Load**

| | |
|---|---|
| 1/2" Hose Bibb/Outdoor Faucet | 2.5 |
| Kitchen Sink/ Dishwasher | 1.5 |
| Clothes Washer | 4.0 |
| Lavatory x 2 | 2.0 |
| Bathtub/Shower x 2 | 8.0 |
| Water Closet 1.6 gpf x 2 | 5.0 |
| **Total** | **23.0** |

**Code B – Total Load**

| | |
|---|---|
| 1/2" Hose Bibb/Outdoor Faucet | 4.0 |
| Kitchen Sink | 1.4 |
| Dishwasher | 1.4 |
| Clothes Washer | 3.0 |
| 2-Bathroom Group (Includes Flush Tank Water Closet, Lav, and Tub/Shower Combo) 3.6 Each | 7.2 |
| **Total** | **17.0** |

It still amazes me that Codes A, B, and C, are very reputable plumbing codes in the United States, but still are not uniform!

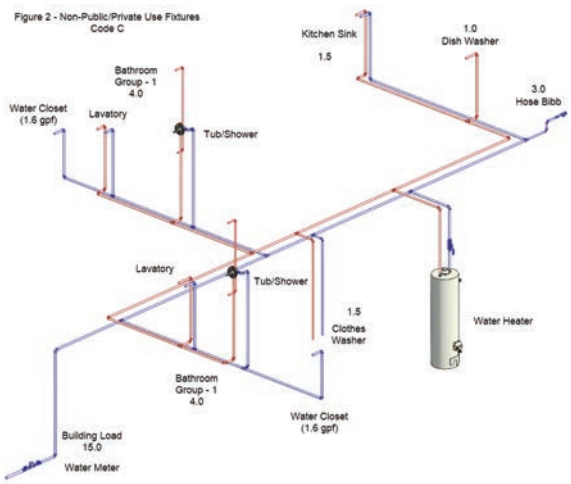
The thing I truly love about our industry is that it is ever changing. We learn new things and work together to adjust the way things get done. Due to the pandemic, many public buildings were shut down or barely occupied and an increase in stagnant water led to a spike in cases of *Legionella* in the past two years. This has caused great safety concerns in the way that water distribution systems are designed. As I write this article, I am coming off of the tail of a recent summit on the development of a public use version of IAPMO's Water Demand Calculator (WDC).

The thing I truly love about our industry is that it is ever changing. We learn new things and work together to adjust the way things get done.

A "think tank" is being put together with some of the plumbing industry's brightest people to take part in the next step in the development of a public version of the WDC. I'll keep you advised as things develop.

You can check out the residential version of the WDC at www.iapmo.org/water-demand-calculator/. This calculator is a game-changer when it comes to sizing and I encourage you to try it out. I hope to have more info in coming articles for you on it as well as a look at how to apply it to designing a water distribution system.

As you look at Figure 2, you'll see that the total loads of the fixtures have been applied to both the fixtures or groups of fixtures (aka bathroom groups) and to the building. This step may seem basic or even useless to some, but trust me, it's the basics that build the system correctly.




In my next article we'll get into sizing but for now, you can see that the water distribution is "totally loaded."

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*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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# Product Spotlight

## Valve designed to stop leaking water heaters

*By Craig Mandli*

A leaking water heater has the potential to cause a lot of water damage to a client's home. Even a small, slow leak can soak into the subfloor and cause it to decay. And because water heaters are designed to automatically refill as they empty, a leaky water heater can cause untold damage if not caught quickly.

To combat the issue, WAGS Valves from Aquaguard can stop a leaking water heater tank from continuously refilling and dripping, or until tank fails catastrophically. The shut-off valve halts the incoming water supply, and on gas-fired units, shuts off the gas supply to ensure the home's safety from water heater failure.

"What sets the WAGS Valve apart is it is the only fully mechanical tank water heater safety shutoff valve on the market," says Aquaguard President Steven Fielding. "It uses no electricity, no batteries, need no wireless signal, and requires no maintenance, which results in no worries for the property owner."

WAGS Valves are mechanically operated. They sit in a drip pan under the water heater and are activated when leaking water accumulates to a predetermined level in the pan. Once activated the industrial-duty, one-shot safety valve shuts off the water and gas supply if so equipped. A red tab pops out to indicate valve activation. Professional installation normally adds between 15 to 20 minutes to a new tank installation. According to Fielding, the valve serves as a way for homeowners to continue using traditional tank hot water heaters in new construction.

"Tank Water Heaters are the 'tried and true' versus new tankless water heaters, which are typically more expensive to install and maintain due to their complexity and scale buildup in the heating tube," he says. "Most homeowners want a low cost and a safe water heating solution, and want to get the maximum bang for their buck. The WAGS Valve allows property owners to get the maximum useful life out of their investment since they can allow their tank to run to failure safely, and don't have to replace it prematurely."

Fielding speaks from experience, as he's also a customer. "I have a finished basement for my kids, and I'm on my third water heater with a WAGS Valve," he says. "The prior two were run to maximum life of 14 years and 11 1/2 years, and the WAGS Valve worked flawlessly. It may sound corny, but I love the product so much, I bought the company!" **844-438-9247; www.wagsvalve.com**

### Milwaukee Tool leveling tripod chain vise

Milwaukee Tool's 6-inch leveling tripod chain vise has a fold-flat design and a centered carry handle that enable balanced, briefcase-style transportation and compact storage in vehicles and job boxes. With only two simple steps to deploy, the chain vise eliminates multiple setup hassles and delivers a quick and painless set up. Equipped with STABLE LOK, contractors can easily adjust the tension of the deck to maintain steadiness throughout the life of the stand. The tripod features an adjustable leg, allowing the deck to be pitched plus/minus 3 degrees for level alignments. With a multimaterial chain vise, a larger work surface, and optimized tool storage, the stand can serve as a portable work desk while on the job site. **800-729-3878; www.milwaukeetool.com**

## Cherne larger-sized I-Series line of test plugs

Cherne Industries added larger test plug sizes within its I-Series line of Test-Ball, Muni-Ball and Air-Loc pipe plugs. The new plugs are available as large as 24 to 48 inches. Manufactured robotically, each plug's natural rubber core is mechanically bonded to its aluminum end plate, ensuring precision and consistency while eliminating failures that can result from chemical-bonding processes. In addition, I-Series plugs feature corrosion-resistant aluminum base plates with laser-etched identifiers, replacing the use of raised rubber markings that eventually wear away with usage. The plugs are lightweight, short and flexible, while offering back pressure to accommodate the range of plug sizes offered. Protective sleeves are also available for the full range of I-Series plugs, helping further preserve the plugs for extended use. **800-843-7584; www.cherneind.com**

## HammerHead Trenchless HydroGuide HG550 cable winch

The HydroGuide HG550 cable winch by HammerHead Trenchless enables operators to precisely match tonnage and speed to a job's specific requirements. The winch is ideal for slitting plastic gas pipes and pulling back new product in lines ranging from 1/2 to 2 inches in diameter. The HG550 provides infinite, proportional control of up to 5.5 tons of pulling force at payout/pullback speeds ranging from 3 inches to 110 feet per minute. It features a data tracking system to record performance information, and documentation can be used to meet reporting requirements, support operator training programs or for internal project tracking, assessment and more. The easy-to-read, Precision Digital Job Data Recorder keeps track of line speed, distance, force and pressure, and a USB flash drive makes it easy to store and download data. **800-331-6653; www.hammerheadtrenchless.com**

## General Pipe Cleaners Gen-Eye X-POD Plus sewer camera

The Gen-Eye X-POD Plus sewer camera system from General Pipe Cleaners now includes the Gen-Pack battery adapter, Wi-Fi transmitter and an on-screen distance counter as standard equipment. Depending on battery type and settings, the built-in battery adapter allows for up to 12 hours of operation in remote locations with limited access to power. The built-in Wi-Fi transmitter lets you view and record work on a cell phone or tablet. And using the system's USB port, you can also archive activity on flash drives. The new on-screen distance counter also shows how far the camera has traveled down a line in feet or meters. And for optimum accuracy, settings can be adjusted for full-size or mini-reel configurations. A 7-inch LCD color monitor with a sunscreen provides easy viewing in any location, and the camera has a one-touch recording for speed and convenience. **800-245-6200; www.drainbrain.com**

## HamatUSA Chelsea workstation sink

HamatUSA's Chelsea workstation sink integrates a classic modern farmhouse apron front with a unique work ledge that accommodates a range of accessories. The drop ledge greatly expands the functionality of the sink, making it easy to meet the demands of today's busiest kitchens. Accessories flow seamlessly between the upper and lower level to be positioned precisely where needed, or conveniently slide out of the way. The workstation measures 33 by 20 inches with a center drain and a deep single basin. The sink includes a colander for rinsing produce and pasta, a rubberwood cutting board for prep work, a multipurpose roll-up mat, a bottom grid and strainer basket. It's offered in an array of classic colors, including white, matte black, matte grey and biscuit, and it is completely lead-free. **833-334-2628; www.hamatusa.com**

## Picote Solutions battery-powered miller systems

Picote Solutions has launched two of its latest easy-to-use and easily transported miller options in a battery-powered format. The two new units are the battery-powered Mini Miller and Mini Cleaner. The Two units are totally cordless when operating and feature a new dedicated brushless motor. The Mini Miller is designed for cleaning and descaling as well as root removal in pipes between 2 to 4 inches in diameter. The units can also be used for cutting and reinstatement work in pipes from 2 to 3 inches. The Mini Cleaner is designed for cleaning, descaling, root cutting and brush coating operations in pipes from 1 1/4 to 3 inches in diameter. Both the Mini Miller and the Mini Cleaner can be retrofitted or upgraded to operate with the Picote +C option, which allows operations to viewed in real time via an onboard CCTV camera. **708-267-6366; www.picotesolutions.com**

## U.S. Boiler SteamMax gas-fired steam boiler

U.S. Boiler's SteamMax is a cast iron, gas-fired, steam boiler that has been designed to specifically overcome the challenges presented by poor water quaility and design necessitated by efficiency standards. A completely new, steam-specific cast iron heat exchanger design provides corrosion resistance in a wide variety of water conditions, along with an efficiency rating of 82% AFUE. The heat exchanger includes a larger steam chest with an increased steam disengaging area, a highly stable waterline, and wider internal pathways. Cast iron sections are joined via leak-free metal push nipples instead of gaskets. Additionally, the boiler's steam risers are placed on intermediate sections to promote smooth steam flow. Precut, near-boiler piping kits are available for residential models between 75 and 250 mBh. **717-397-4701; www.usboiler.net**

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## RIDGID awards four PHCC scholarships

RIDGID awarded scholarships to four plumbing and HVACR apprentices as part of its partnership with the Plumbing-Heating-Cooling Contractors Educational Foundation and its apprentice contest. Each winner received a $1,000 education scholarship, plus $1,500 of tools from RIDGID and special recognition at PHCC Connect 2021, held Oct. 20-22, in Kansas City, Missouri. The 2021 scholarship recipients included Tyler Earle, Forestdale, Massachusetts; Martin Gorman, Belmont, Massachusetts; Paul Kwiecinski, Chicago; Christopher Friendly, Anchorage, Alaska.

## bluefrog Plumbing + Drain to expand in Arizona

bluefrog Plumbing + Drain announced plans to award 12 franchise agreements in 2022 with two locations in Phoenix and Tucson, Arizona, at the top of the list. As part of the network's planned expansion, the plans are part of bluefrog's larger goal to open 50 new locations in the U.S. over the next five years.

"First and foremost, the two things that are most important to us are that we leave a legacy behind for our children and the second is that our employees would benefit from that legacy and they too would have something to pass on to their children."

Kelli Frank
Four Star Plumbing
San Clemente, California

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## Viega's Daniel Rademacher wins leadership award

Viega manager Daniel Rademacher has won the PMG Leadership Award from the International Code Council for his work in training and educating plumbing professionals around the world. Rademacher, who is the Trades Education Network program manager for Viega, was given the award at the ICC's annual meeting in September. The award is given each year to an individual or organization for exceptional service to the plumbing, mechanical, fuel gas and swimming pool/spa industry.

## Matt Kozak receives AIM/R Golden Eagle Award

Matt Kozak, vice president of sales for Bradford White Water Heaters, was named the 2021 recipient of the Golden Eagle Award by the Association of Independent Manufacturers' Representatives. The AIM/R Golden Eagle Award, presented annually at the group's conference, recognizes senior-level plumbing manufacturing executives who have actively supported independent reps and their important role in the supply chain.

## Western Drain opens new store in Anaheim

Western Drain Supply opened a new location in Anaheim, California. Shoppers can quickly find the brands they prefer in exclusive brand rooms stocked with tools and supplies from Picote, RIDGID and APS. The store also features a try-before-you-buy pipe wall where customers can put equipment to the test before purchasing. A new training center allows the company to host on-site seminars and demonstrations for new product releases, pipe lining, patching and descaling.

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# Pulsar 2000 Line Tracer

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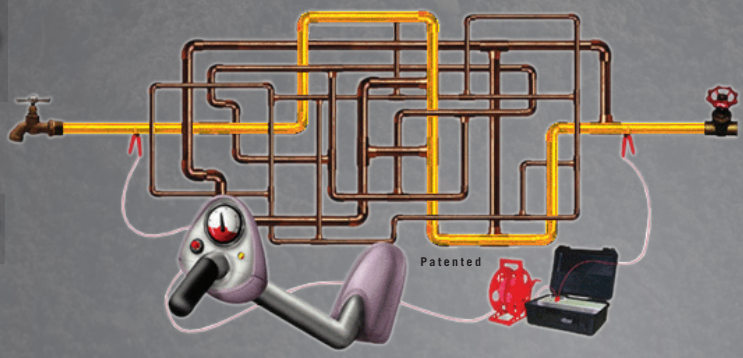


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# Hydronic Heating Systems, HVAC

*By Craig Mandli*

## Boilers

### Bradford White Water Heaters Brute FT

**Bradford White Water Heaters' Brute FT** wall-hung boiler and combination boiler/water heater has modulating technology that automatically adjusts fuel usage to match heat demand, saving up to 20% on heating utility bills. It is Energy Star rated for ultrahigh efficiency of up to 95% AFUE. It includes advanced, easy-to-use integrated controls with an outdoor reset, built-in gas leak detection and an integrated indirect tank for domestic hot-water performance. It is environmentally friendly with low NOx emissions and can be vented up to 100 feet in PVC, CPVC and polypropylene. It is available as a combination heat/water heater or space heating only, in either natural gas or propane. **800-523-2931; www.bradfordwhite.com**

### Laars Heating Systems FT Series Combination Boiler and Water Heater

The **Laars Heating Systems** floor-standing **FT Series Combination Boiler and Water Heater** is a residential combination boiler that delivers uninterrupted home heat and on-demand hot water simultaneously. It employs an integrated domestic hot water mini-indirect tank to supply stable hot water on demand. Advanced smart technology coordinates uninterrupted space heating with domestic hot water demand and ensures continuing hot water supply for multiple heating events. It can deliver 6 gallons per minute of hot water in the first minute and 5.2 gpm continuous delivery at a 70 degrees F temperature rise. It is domestic hot water recirculation compatible, includes a built-in low loss header for ease of installation and includes a stainless steel fire-tube heat exchanger, top piping connections for flexible installation and large front access for service and maintenance. **800-900-9276; www.laars.com**

### Noritz Residential Combination Boiler

The **Noritz Residential Combination Boiler** (NRCB) allows for simultaneous residential, domestic hot water and space heating. The unit's simultaneous capabilities are easy to control and especially beneficial for applications that do not store or deliver heat energy efficiently. Performing at a 95% AFUE (Annual Fuel Utilization Efficiency), the unit is EPA Energy Star certified. Its 316L copper primary and secondary heat exchangers have high corrosion resistance. The unit can adjust to either PP or CPVC venting without the installer needing to make any programming changes. The venting can also easily be reconfigured to use room air. **714-433-2905; www.noritz.com**

## Ductwork

### Flow-Liner Systems CIP-DUCT

**CIP-DUCT** from **Flow-Liner Systems** is a trenchless system that expands the benefits of CIP lining to include HVAC applications, specifically underground duct lining. It eliminates infiltration inside of pipes, conduits and ducts. The liner has an impregnable membrane that stops liquid and gas infiltration. Systems has been evaluated by IAMPO and found to be in accordance with Uniform Evaluation Service (IAPMO ER #484). It is engineer tested to a minimum life expectancy of 50+ years and helps protect against dangerous asbestos materials and mold growth. **800-348-0020; www.flow-liner.com**

## Fixtures

### ADEY Innovation MagnaClean Professional 2XP

The **MagnaClean Professional2XP** from **ADEY Innovation** comes with 1-inch copper and 1 1/4-inch NPT iron pipework, suitable for protecting 150,000 to 300,000 Btu boiler ranges from damaging black sludge, i.e. magnetite. The magnetic filter has a rare-earth magnetic core and two non-magnetic capture zones for capturing both magnetic and non-magnetic debris. Installed on the return pipe to the boiler/circulator, the filter contains no moving parts. It has bi-directional, 360-degree isolation valves meaning the filter valves can be rotated to adapt to pipework at any angle. The system can remain switched on while the filter is being serviced. **844-378-0442; adey.com/us**

### 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**

### Supply Smart Clear Blue Advanced

With more and more people working from home, the demand put on home HVAC systems has skyrocketed. Cleaner air and HVAC efficiency are top priorities among homeowners and contractors alike. **Clear Blue Advanced**, a 16-inch germicidal coil cleaner from Supply Smart, utilizes natural UV light to safely improve both air quality and system efficiency. This product is easily installed by contractors into existing HVAC systems and is rated for up to 2,000 square feet. In addition to adding life to HVAC systems, it improves overall quality of life by destroying mold, bacteria and viruses as well as reducing allergens traveling through the air. This in turn minimizes related health issues, such as headaches, asthma attacks, allergies, sinus problems and fatigue. **800-631-7793; www.supplysmart.com**

## Geothermal Heating

### Total Green Mfg. Waterless Geothermal

Waterless direct exchange (DX) geothermal systems **Total Green Mfg.** offer multifunction capabilities such as forced air heating and cooling, as well as a hydronic heating circuit. This added hydronic circuit can be used to provide 100% hot water, or to provide the comforts of radiant heat throughout the house. It can even be utilized as a comfort zone to heat a smaller area of the house such as the master suite. This refrigerant based (water-free) geothermal heat pump is an improved combination of many older DX geothermal designs that still capitalizes on the simplicity and efficiency advantages of using a copper ground loop. It features simplified refrigerant controls that deliver higher capacities, higher efficiencies and better reliability (even during extreme cold climate conditions). **888-678-2032; www.waterlessgeotheramal.com**

## Hydronic Heating

### Northwestern Ohio Foam Products BarrierEZ

The **BarrierEZ** insulated floor system is an integrated insulation and tubing technology that utilizes hook-and-loop material to secure the tubing to the insulation in one easy step. It combines the energy saving properties of foam coated with a vapor barrier loop film and a PERT tube covered with a hook tape that allows for rapid and secure placement of hydronic radiant floor heating systems. It was designed to simplify the process of installing tubing for in-floor hydronic radiant heat applications. It has an expanded polystyrene core, which insulates radiant heating projects from heat loss and retards moisture migration through concrete. The core has vapor

retarding films bonded to both sides, as well as a self-taping edge and overlapping flange providing a seam free installation. **800-339-4850; www.nofp.com**

### REHAU, Building Solutions Division RAUPANEL

The **RAUPANEL** panel system from **REHAU, Building Solutions Division** is suitable for residential retrofit applications in colder regions where mechanical system upgrades are needed to boost comfort and efficiency. A choice of 6- or 8-inch on-center spacing results in precise pipe layouts, creating an evenly heated home all season. The built-in air pocket and wide contact surface directs heat upward for efficient heat transfer and energy savings. Low fluid temperature requirements allow it to work with low temperature radiant heating and geoexchange systems for additional energy conservation. The 270-degree contact between pipe and highly conductive aluminum panel delivers quick response, enabling nighttime setback without sacrificing warmth. For homeowners who want radiant comfort without altering existing floor coverings, it elevates the performance over piping alone in joist-space applications. **800-247-9445; www.na.rehau.com**

## Pipe (PVC, Copper, Polyethylene, PEX)

### Asahi/America Asahitec PP-RCT

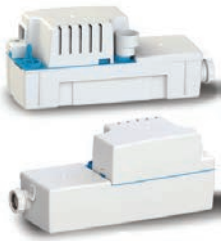
Certain challenges can arise during steel pipe installation and performance, including rust, corrosion, inefficient pumping, welding sparks, fire watches, and sometimes dangerous handling conditions. The **Asahitec PP-RCT** plumbing and HVAC piping system from **Asahi/America** can ease the challenges associated with the installation and process performance of steel piping systems. It will not rust, scale, pit, or corrode, and can provide 50 years of maintenance-free performance. Its smooth bore will maintain a pump's maximum efficiency for the life of the system. It is one-quarter of the weight of steel pipe, making it easy to transport. Additionally, it can be easily fabricated and manipulated into position. The system is welded through socket or butt fusion welds that are fast and easy-to-make. Factory training and certification is available and convenient, allowing installers to make welds on the same day as they are trained. **800-343-3618; www.asahi-america.com**

### Uponor PP-RCT

**Uponor PP-RCT** is a polypropylene pipe that is a lightweight, durable product that resists corrosion, rust, and scale buildup, making it suitable for mechanical HVAC piping applications, such as hydronic heating, hot water and chilled water. It provides elevated temperature and pressure ratings compared to PP-R piping products, allowing for use in a wider range of hydronic distribution applications. It features a middle fiber layer to limit expansion and contraction. The product is available in sizes from 1/2 to 12 inches. **800-321-4739; www.uponor-usa.com**

## Pump

### Saniflo Sanicondens Best Flat



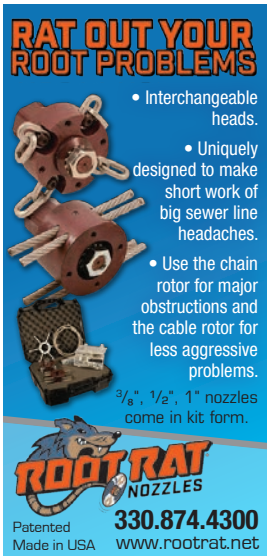
The **Sanicondens Best Flat** from **Saniflo** combines a condensate pump with pH-neutralizing pellet tray into a single, space-saving, environmentally friendly solution for today's ultra-high-efficiency condensing equipment, both residential and commercial: boilers, water heaters, air-conditioning and refrigeration systems, and other appliances. Condensing technology saves energy by maximizing the amount of heat energy transferred to the water during the combustion process. A byproduct of this high-efficiency process is water, or condensate, that tends to be acidic because of the chemical reaction caused by the heat of the gas burner. The higher the efficiency rating, the higher the acid level in the water runoff. It uses a built-in neutralizer to boost the pH of the acidic condensate before it can be discharged into a drainline, thus preventing corrosion. Its streamlined design incorporates two 1-inch inlets: one on the side and the other on the top near the neutralizer tray. **800-571-8191; www.saniflo.com**

## Valve

### Viega ProPress Automatic Recirculation Balancing Valve

**Viega's ProPress Automatic Recirculation Balancing Valve** ensures balanced domestic water recirculation by changing with varying conditions. It keeps water temperatures more uniform by adjusting flow with changes in temperature. The results are faster hot water delivery, minimized waste energy and water and less stagnation and chance of contamination. Temperature can be set once and be maintained automatically. Settings can be changed easily, if needed. It can be installed on risers or branches. Remote monitoring is possible with a temperature sensor. An optional thermometer provides visual indication of valve setting. Threaded ends allow use with ProPress or PureFlow fittings systems. It includes a bypass for thermal disinfection. **800-976-9819; www.viega.us**

## MARKETPLACE



**Jan. 31-Feb. 2**
**AHR Expo,** Las Vegas Convention Center, Las Vegas. Visit ahrexpo.com

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**Feb. 8-10**
**National Association of Home Builders (NAHB) International Builder's Show,**
Orange County Convention Center, Orlando. Visit www.buildersshow.com

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**Feb. 8-10**
**Kitchen & Bath Industry Show (KBIS),**
Orange County Convention Center, Orlando. Visit www.kbis.com

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**Feb. 21-24**
**Water & Wastewater Equipment Treatment & Transport (WWETT) Show,**
Indiana Convention Center, Indianapolis, Indiana. Visit www.wwettshow.com

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**March 13-17**
**Mechanical Contractors Association of America (MCAA) Annual Convention,**
Marriott Marquis San Diego Marina, San Diego, California. Visit www.ilphcc.com

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**March 18**
**Illinois PHCC Expo and Education Day,**
Drury Lane Conference Center, Oakbrook Terrace, Illinois. Visit www.ilphcc.com

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**March 28-30**
**ACCA 2022 Conference & Expo,**
St. Louis Union Station Hotel, St. Louis, Missouri. Visit: www.accaconference.com

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**April 5-7**
**National Hardware Show,**
Las Vegas Convention Center, Las Vegas. Visit www.nationalhardwareshow.com

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**April 13-14**
**Wastewater Equipment (WEQ) Fair,**
Tempe Diablo Stadium, Tempe, Arizona. Visit weqfair.com

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**May 10-11**
**7th Emerging Water Technologies Symposium,**
Westin Riverwalk, San Antonio, Texas. www.ewts.org

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