

# Plumber™

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Photography by Amanda Berg

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# Plumber

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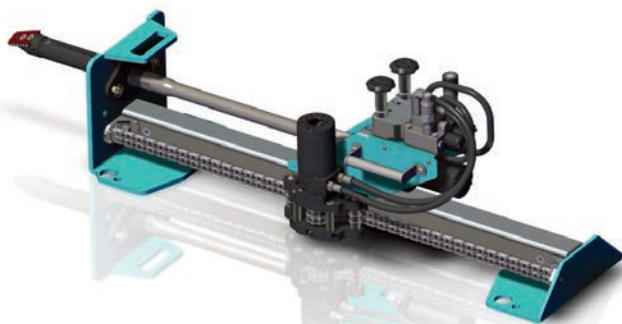
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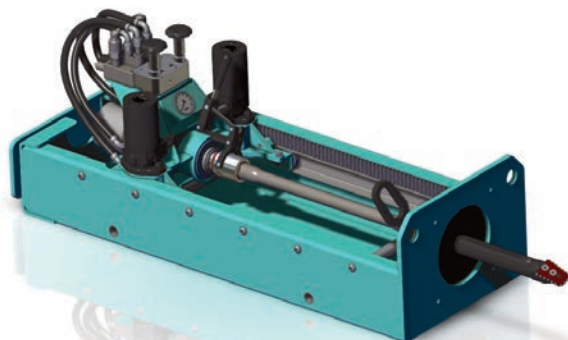
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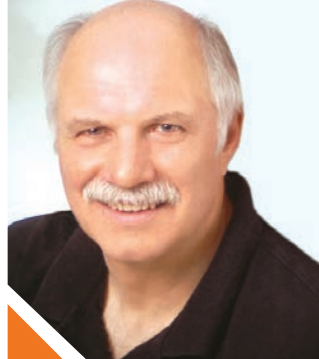
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Ed Wodalski

## Carrying on a Proud Tradition

Taking over as editor gives me the opportunity to learn more about the people who make the plumbing profession great

**Y**ou might notice a new face and name on this page as I slide into the editor's chair this month. Luke Laggis, who guided *Plumber* from its beginnings online and into print, has set a high standard for this publication. And, as he moves on to other assignments at COLE Publishing, I promise to do the same.

Some of you might know me as *Plumber's* digital editor. During the past year, I've gotten to learn about you and the remarkable work you do to keep us safe and healthy. You truly are the superheroes of sanitation.

In the months ahead, I look forward to learning more about the profession and sharing your insights and accomplishments with other hardworking plumbers from around the nation and the world.

This month we travel to New York's Long Island, where we meet third-generation plumbing and hydronic heating specialists Hunter and Roger Botto. Hydronic heating, the theme for this month's issue, has been an important part of Botto Brothers Plumbing & Heating business for almost 80 years.

Hunter and Roger believe in conducting business with professionalism, honesty and integrity — traits I believe all plumbers should strive to emulate.

"We want to ensure every employee understands that we're professional, which means we maintain the highest standards possible by being neat and clean and operating our business honestly," says Hunter, who learned the trade while in the Navy, working on steam and propulsion systems.

Training is ongoing at Botto Brothers. Technicians are skilled in undoing damage done by less skilled workers, which often requires complete system makeovers. Hunter calls them "rescue" jobs.

To create a professional image, technicians wear green

uniforms with the company name and logo — T-shirts and polos in the summer and hoodies in the winter.

What separates you from the competition? Is it your professional image or the quality work you do?

A late friend of mine, while not a plumber, I believe set the gold standard for standing out in a crowd. He always wore a fresh carnation in the lapel of his sport coat and drove a red Cadillac with a white convertible top.

A car salesman by trade, Sam's multicolored jackets were handmade from drapery material he personally selected. They were paisley, plaid — some even had lights or an embroidered landscape. Today, a few still hang in a local museum.

The point is, people remembered Sam — wherever he went. It also made him a superstar among salesmen. Customers might not have known his name, but they remembered the man in the "crazy-colored coat." Sam never lost a deal.

What makes you unique? Is it your name? The way you dress? The new tools you use?

Perhaps it's your smart-looking van that screams professionalism, like the 2015 Sprinter tricked out with the ultimate in space-saving cabinetry by Hing Lai, the subject of this month's On the Road column. Imagine each drawer clearly labeled and each tool hanging neatly in place. There's no digging for equipment or fittings you may have forgotten to stock. What does your service vehicle say about you? Might efficiency improve your bottom line?

We're here each month with ideas and products to help you build your business. You can find even more insight and information at [www.plumbermag.com](http://www.plumbermag.com). We're posting valuable new content every day.

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*"By joining a chamber of commerce, you are sending a powerful sign that your plumbing company is putting down roots in the local community. There is an implication that you want to build relationships and aren't some 'here today, gone tomorrow' company. This is especially important to consider if you are starting a plumbing company from scratch, with no brand recognition. People do business with people, and are a lot more likely to take a chance on an unknown plumber if they can look you in the eye. Putting a face to your business goes a long way towards building trust."*

**SHOULD YOU JOIN A CHAMBER OF COMMERCE?** [▶ plumbermag.com/featured](http://plumbermag.com/featured)



## WAVES OF LOVE

**Florida plumbers build homes, install water filtration systems in Nicaragua**

Members of a Florida plumbing company volunteered to build houses in Nicaragua as part of a four-week mission trip organized by Waves of Love, a Christian faith-based nonprofit dedicated to helping people in need. During its mission, eight members of the Specialized Plumbing Technologies team from Sarasota helped build five brick houses and install individual water filtration systems. "Having the opportunity to give back to a community in need anywhere in the world is a rewarding experience," says Justin Mizell, executive vice president, Aquam Corporation, and former SPT owner. "It allows us to give back, and it challenges our company to work as a team to provide others with basic life necessities."

[▶ plumbermag.com/featured](http://plumbermag.com/featured)



## INVESTING IN APPRENTICES

**Canadian plumbing company makes \$200,000 donation to college's trades and technology facility**

Roger Simpson, owner of Simpson Plumbing in Lethbridge, Alberta, Canada, believes in the need to train future plumbers. When Lethbridge College launched a plumber apprenticeship program in January, Simpson stepped in with a \$200,000 donation in May to create a Simpson Plumbing classroom as part of the school's new trades and technologies facility. [▶ plumbermag.com/featured](http://plumbermag.com/featured)



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▼ Roger (left) and Hunter Botto are third-generation owners of Botto Brothers Plumbing & Heating in Hicksville, New York. Founded in 1937, hydronic heating accounts for about 45 percent of the company's revenue.

# FULL STEAM Ahead

Fixing improperly installed hydronic heating systems keeps third-generation plumbing business in high demand

By Ken Wysocky | Photos by Amanda Berg



**Botto Brothers Plumbing & Heating Inc., Hicksville, New York**

<b>OWNERS</b>	Hunter and Roger Botto
<b>FOUNDED</b>	1937
<b>EMPLOYEES</b>	9
<b>SERVICES</b>	Commercial and residential plumbing, hydronic heating repair and installation, bathroom and kitchen remodeling
<b>SERVICE AREA</b>	Long Island
<b>WEBSITE</b>	<a href="http://www.bottobros.com">www.bottobros.com</a>



▲ A building Hunter and Roger's father, Richard, purchased in 1963 houses inventory, offices and serves as a full-service showroom.



unter Botto and his brother, Roger, know what it takes to run a successful plumbing and hydronic heating business.

"I've been in plumbing since I was 11 years old, so I've picked up a few things along the way," says Hunter, 58, co-owner of Botto Brothers Plumbing & Heating. "I also worked on steam and propulsion systems while I was in the Navy."

Hunter joined the business in 1980 after serving a four-year tour; Roger came on board in 1984 after earning a college degree in occupational studies.

The company's primary services are plumbing and heating — installing, repairing and updating hydronic heating systems for both commercial and residential customers, along with service installations and bathroom and kitchen remodeling.

Hydronic heating has been an important part of the company's business for almost 80 years and accounts for about 45 percent of its revenues.

"Today's (hydronic) heating equipment requires highly technical knowl-

edge of electronics," says Hunter, who designs the systems. "We are very fortunate to have a widely diverse group of employees who possess many specialties ... technicians who are very familiar with many different products."

For plumbers who might consider adding hydronics to their service menu, he suggests taking classes offered by various manufacturers and making use of resources such as local colleges and even other contractors who are willing to provide advice.

Training is ongoing at Botto Brothers, and is especially useful in undoing damage done by less skilled technicians that require complete system makeovers.

"I think we did four last month alone," Hunter says. "Our techs are always sending in photos of badly installed systems. ... If I had the time, I could cover

“ We think that staying smaller and operating more efficiently is more important than exponential growth. We always want to provide our customers with the best possible service.”

*Hunter Botto*

a wall with photos of crazy, improperly installed systems. It's pretty scary out there in the field."

Hunter calls them "rescue" jobs.

One of the toughest the company handled last year involved replacing a modular steam system in a commercial building.

"Controlling the water levels in five steam boilers was a challenge," Hunter says. "But after discussions with outside professional resources, manufacturers' reps and a lot of reading on the internet, the system really works. Another challenging job involved converting a two-pipe steam system to hot-water heat in a large residential home.

"We zoned every room and retained the old recessed, cast iron radiators," he says. "We also installed two condensing wall-hung boilers and two indirect water heaters for domestic hot-water use."

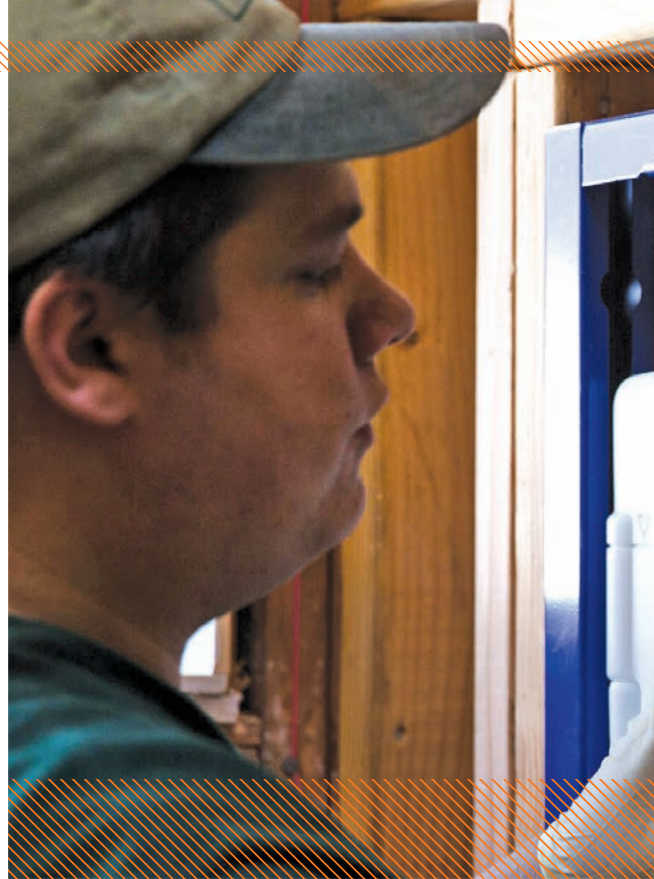
Adhering to professional standards goes beyond product knowledge at Botto Brothers, which strongly believes in taking a customer-centric approach to business. And with about 16,000 clients, the strategy appears to be paying dividends for the third-generation company based in Hicksville on Long Island, New York.

"We want to ensure every employee understands that we're professionals, which means we maintain the highest standards possible by being neat and clean and operating our business honestly," Hunter says. "We always want to respect our clients, since they're the ones who pay our salaries. When we show up at a job, we arrive on time, drive clean and properly lettered trucks and respect our clients' property."

Even the current size of the company, established in 1937 by brothers Irwin and Bob Botto (Hunter and Roger's grandfather and great-uncle, respectively), is the result of a customer-first philosophy.

In the mid-1950s and early 1960s, when the second generation of Bottos — Richard (Hunter and Roger's father) and his cousin, Irv, ran the business, they had about 25 plumbers.

But as the business got larger, efficiency and profitability took a hit. By adopting a less-is-more approach, the company was able to refocus on service



and grow its list of repeat customers.

"When my dad and Irv split up the business in 1963, my father went down to about 15 employees," Hunter says. "And by the time we took over in 1993 after he retired, we were down to about 10 plumbers, and we've stayed between eight and 10 throughout the years.

"Bigger is definitely not always better," he says. "It became more than we could handle in terms of supervision and hours invested — trying to keep a finger on everything. Everything suffered, from our efficiency to our ability to supervise employees, which led to dissatisfied customers and lower profitability. Overtime starts to run away on you and you start losing your ability to make smart purchasing decisions and bids. It took a couple of years of working long, hard hours and not making a lot of money to realize the problems."

*"Our techs are always sending in photos of badly installed systems. ... If I had the time, I could cover a wall with photos of crazy, improperly installed systems. It's pretty scary out there in the field."*

**Hunter Botto**



◀ Christopher Botto, 23, a fourth-generation plumber with Botto Brothers Plumbing & Heating, installs a Geberit wall carrier for a wall-mounted toilet.

▼ Christopher Botto works on a hydronic heating system with Bell & Gossett circulators and Taco zone control.

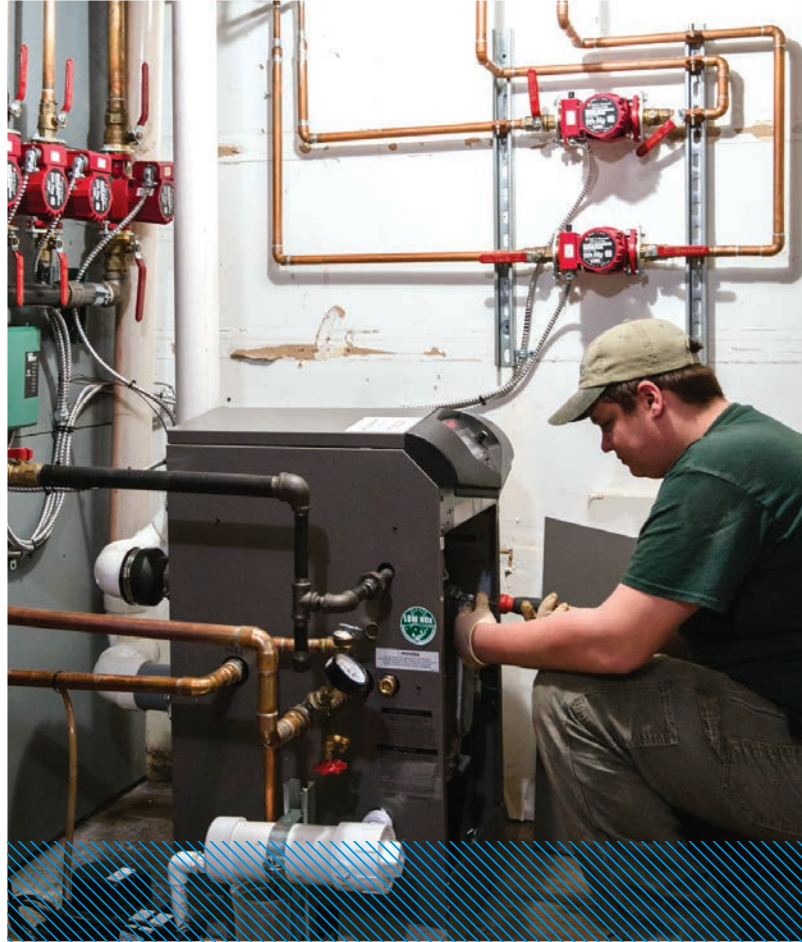
### ▲ Image is everything

To create a professional image, technicians wear green uniforms with the company name and logo. Uniforms consist of T-shirts and polo shirts in summer and hoodies in winter. Technicians can choose their own pants and shoes/work boots.

“We’ve always had uniforms as far back as I can remember,” Hunter says. “Plus, being a Navy guy, I think uniforms are the way to fly. It shows that we’re professional and not just some butt-crack plumber guys. We want a clean, neat and professional appearance. Whether we’re doing remodeling work or boiler work or service work, everyone has to be clean-shaven and in uniform.”

The company buys the uniforms and technicians are responsible for laundering them. Each technician receives eight sets of clothes. Total cost? Roughly a couple thousand dollars a year. Money well spent? Absolutely, he says.

▶ A thermometer from Triple S Specialties Co. in Brooklyn, New York, is used on a hydronic heating system in the basement of an Old Westbury, New York, home.



“Image is everything in this business. Whether the public sees you getting a piece of pizza for lunch or working at a home or walking down the street, uniforms set us apart from other slob out there. It’s just how good companies operate.”

Another benefit: A professional image allows Botto Brothers to charge more for its services. The company also keeps a close eye on finances.

“We monitor our numbers — things such as profit and loss statements, our payables and receivables, health insurance costs and taxes — on a regular basis, so we know for sure that we’re charging enough and bidding properly. We prefer to make money around here,” Hunter says.

### ▲ A fit fleet

The company runs five Ford F-350 walk-in box trucks, with 12- and 14-foot bodies made by Utilimaster.

“Box trucks are a little more user-friendly for our guys because they can stand up inside them,” Hunter says.

A full-time carpenter, whose primary job is remodeling projects, builds wooden storage bins for parts and tools.

“It’s slightly more expensive than buying a (prefabricated) storage system, but this way we can custom outfit each van to fit the needs of the guy driving it,” he says. “We feel like we build a better mousetrap.”

Each truck carries between \$4,000 and \$6,000 worth of inventory, except for those dedicated to remodeling projects. Equipment includes a RIDGID hand-held drain cleaning machine for up to 2-inch lines. The company hires subcontractors for larger drains.

“We used to do mainline rooting, but too many times, a technician would get pretty dirty cleaning a sewer in the morning, then have to go and work inside, say, a million-dollar home after that,” Hunter says.

Technicians have the freedom to modify the interior to their liking.

“We always want to respect our clients, since they’re the ones who pay our salaries. When we show up at a job, we arrive on time, drive clean and properly lettered trucks and respect our clients’ property.”

*Hunter Botto*

## Employee retention 101: Education and equipment



“We like to let them have some input into how to set up their trucks.”

### ▲ Inventory management

Inventory control is essential to the company’s success, improving efficiency and keeping costs down for customers. To maximize productivity, Botto Brothers warehouses pipe fittings, toilets, sinks and water heaters in a facility Richard Botto purchased in 1963.

“The building includes a showroom and offices with a warehouse in back, plus there’s an equipment yard outside,” Hunter says. “The warehouse allows our guys to reload most of their inventory from here, rather than wasting all kinds of hours driving to suppliers and distributors.

“When you do that, you can easily lose a guy for an hour — and that’s on a good day,” he says. “It’s a nightmare. The last place we want to go every day is a supply house. And in those instances when we do have to go, we call ahead and pick up things at a will-call window, so we get in and out in a timely fashion.”



Finding skilled employees with a good work ethic is a struggle for many businesses these days, and the plumbing industry is no exception. Botto Brothers Plumbing & Heating has found a partial solution to that problem: Keep turnover so low that searching for new employees rarely becomes an issue.

To accomplish that, the Hicksville, New York-based company, owned by brothers Hunter and Roger Botto, provide employees with more than just a standard slate of benefits. Beyond competitive salaries, dental, health and life insurance and a 401(k) retirement plan, Botto Brothers also offers continuing education that keeps employees — which Hunter Botto calls the company's most important asset — motivated and strengthens their loyalty.

"There absolutely are benefits to providing continuing education," Hunter says. "The guys always get excited when we try new things. ... Sometimes we all go to school together to learn about specific new products, like high-efficiency boilers, for example — things that are more technically advanced in terms of controls and piping arrangements."

Attending manufacturer-sponsored classes and seminars also demonstrates the company is willing to invest in its employees. Moreover, embracing new technologies and processes keep the business competitive and looking

forward — and bolster its chances of remaining a strong, viable firm.

"Making employees a part of that process is exciting to them ... and trying new and innovative products is one thing that separates us from our competition," he says.

As one of two master plumbers in the company (the other one is Roger), Hunter is out on job sites every day.

"I want to be sure that things don't get away from us," he says. "Our customers appreciate that."

But that doesn't mean he micromanages employees, which is another surefire way to drive away good employees.

"I still let them make decisions," he says. "They're the ones with the boots on the ground. The only thing I micro-manage is getting materials where they need to go or getting subs lined up."

There's one more weapon in Botto's employee-retention arsenal: providing quality tools, equipment and vehicles. This strategy not only reduces work downtime and improves efficiency, it also helps promote employee pride.

"When they see we give a hoot about how the company is run, they give a hoot, too," Hunter says. Running nice-looking service vehicles is all part of creating a more professional image, which creates a ripple effect of benefits, including greater customer loyalty and repeat business, which in turn improves job security for employees.

"That's how we guarantee our guys at least a 40-hour week," he says. "We don't jerk them around and put them in bad situations with poor-quality tools and equipment."


Christopher Botto and Matt Forye work on a major bathroom renovation.

Richard Botto also established a full-service showroom as a convenience for customers and as a marketing tool, creating exposure for the company, courtesy of the building's location along a major highway. Since then, the emergence of big-box retailers and competition from suppliers has diminished the showroom's economic importance.

"We don't depend on it for a significant revenue stream," Hunter says. "It's more of a selling tool now. ... Plus we own the building, so it kind of works for us — gives us exposure. And we still can bring in remodeling customers and keep them from going to suppliers and big-box retailers. We can't compete price-wise with them; in fact, we buy from them, so I have to mark up the cost. Customers still

buy from us, but not as much as they used to. But there still are people out there who just don't like big-box stores or feel intimidated by big suppliers."

As for the future of the business, Hunter says he and his brother aren't interested in dramatic growth, especially given the company's previous experience with operating as a larger company. Besides, a dearth of qualified workers would make expansion difficult even if that was the goal.

"We think that staying smaller and operating more efficiently is more important than exponential growth," he says. "We always want to provide our customers with the best possible service." 

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# Meet Super Van

A place for everything, and everything in its place, sums up this ultra-customized service vehicle full of interior innovations *By Ken Wysocky*

**B**y all outward appearances, the 2015 Freightliner 3500 Sprinter van used by Ranshaw Plumbing & Heating is a standard service vehicle: new, clean and nicely lettered. But there's much more than meets the eye.

A look inside reveals a service van that sets the gold standard for organization — a jaw-dropping, productivity-enhancing, space-saving, profitability-boosting, customer-pleasing, time-saving and employee-pride-building warehouse on wheels that wows clients and other plumbers wherever it goes.



▲ Inside the neatly lettered Sprinter van is a space-saving, profit-boosting warehouse on wheels.



“To be honest, I’ve never seen anything else like my trucks,” says Hing Lai, a master plumber for Ranshaw Plumbing & Heating in Whitestone, New York. Established in 1960, the company has 50 employees and serves the New York City boroughs of Queens, Brooklyn and the Bronx, plus parts of Long Island. Blessed with carpentry skills, Lai has handcrafted wooden storage systems for five Ranshaw service vehicles — units as pretty as they are practical. Each one is fashioned from 3/4-inch, cabinet-grade plywood covered with two coats of high-gloss polyurethane varnish.

Each storage unit reflects Lai’s firm belief that well-organized service vehicles, able to carry as many tools and repair parts as possible, are the key to improving productivity and profitability. And there’s no doubt his units accomplish that goal. Built by a plumber for plumbers, the vans he creates can carry almost every tool and spare part imaginable. In fact, Lai believes anyone who examines the storage units — which take him between 185 and 220 hours to build and cost about \$2,500 for materials — would be hard-pressed to find any



▲ The wide center aisle provides room for moving tools, equipment and storing temporary items, like water heaters. Illumination comes from four LED lighting strips, wired into the existing electrical system that powered the dome lights.



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wasted space, thanks to their cleverly configured and clearly labeled bins, slots, cubbies and cabinets.

“I try to standardize them as much as possible, but each one is a little different, customized to the particular truck and the person using it,” he says.

“It’s hard to convince customers that you are a highly skilled professional when you open your van’s back door and everything falls on the floor.”

**Hing Lai**

Since becoming a plumber in 1992 after two years in construction, Lai’s been amazed at how often he sees messy service trucks that are trashed by their drivers, and is grateful Ranshaw owner Rick Bonelli allows him to design his custom-made beauties.

“If you’re in the field of plumbing, you want to excel and give it all you’ve got,” Lai says. “And that all starts with a clean truck, so you know exactly where everything is. That way, productivity goes up – maybe you can do five jobs a day instead of four. And you achieve better inventory control because you know what’s on the truck.”

Moreover, Lai says the custom storage systems are a great source of pride for the company’s plumbers. Because the vans look nice, employees are motivated to keep them clean and neat.

Lai begins his creations using rivets to attach sheets of 1/2-inch plywood to the walls of a van.

“They conform to the slight curve in the wall,” he says.

Then he starts building the sections from the ground up; the rear of each is scribed and cut to fit the curve of the already attached plywood panels, which form the back of the cabinets.

To hold spare parts, Lai uses 45 .50-caliber military ammo cans instead of more conventional bins. The ammo cans are 11 1/2 inches long, 7 inches wide and 9 inches tall. A wood lip on the shelves keeps them in place.

“They’re the perfect size,” he says of the 45 canisters. “Because they’re not as deep (as typical bins), they allow me to provide a 42-inch-wide center aisle, which provides plenty of room for our guys, moving tools and equipment, and storing temporary items like water heaters.”

Illumination comes from four LED lighting strips, wired into the existing electrical system that powered the dome lights, which Lai removes. As for storage, long sections of pipe rest inside a compartment atop one bank of cabinets; 8- and 4-foot ladders are secured against the interior’s front wall behind the cab; two types of hydronic


expansion tanks are securely mounted on the bulkhead wall inside the cab; and cabinets hold RIDGID 300 (with oiler) and RIDGID 690 pipe-threading machines, plus a RIDGID 425 portable tri-stand. A bench with below-seat storage holds hoses, extensions cords and pumps. Spring latches secure the cabinets that hold crowbars, torches and hand-held drain cleaning machines, as well as hoses, faucets, shower bodies and slip elbows. A rug helps make the aisle easier to clean and saves wear-and-tear on technicians’ knees.

“There’s not 1 inch of wasted space,” Lai says, noting that the Sprinter’s tall ceiling really helps. “There’s plenty of floor space in case we need to carry a water heater or one of our larger drain cleaning machines (made by RIDGID and General Pipe Cleaners) or one of our Gen-Eye (General Pipe Cleaners) pipeline inspection cameras.”

The well-stocked vehicles also instill confidence in customers.

“It’s hard to convince customers that you are a highly skilled professional when you open your van’s back door and everything falls on the floor,” Lai says. “Our customers feel confident that they’re paying good money for an experienced tradesperson.

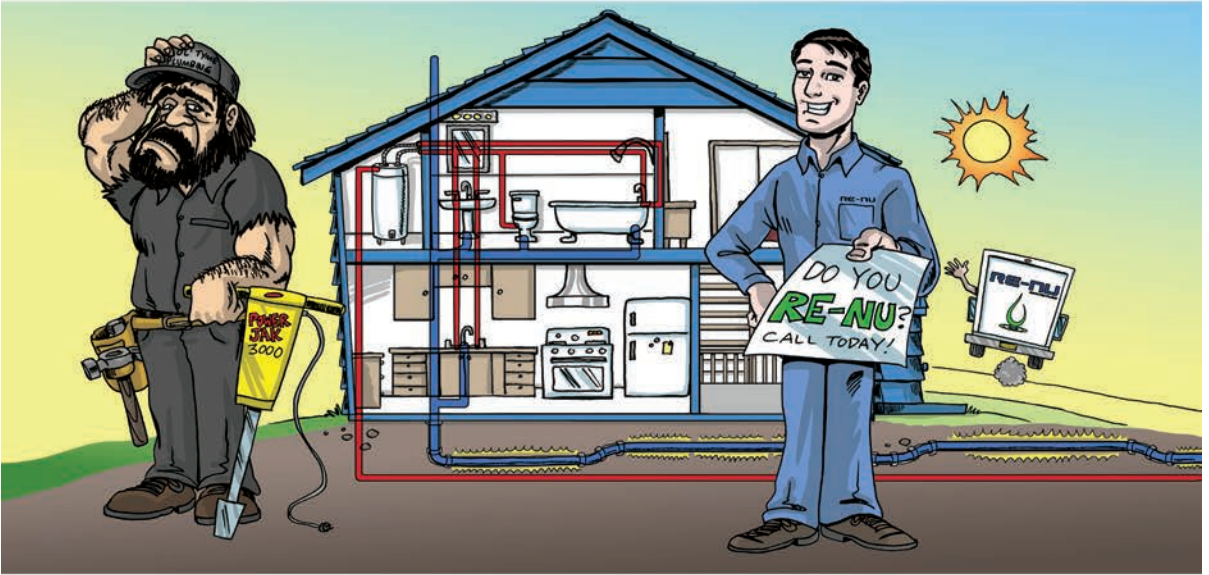
“No one questions what we charge because when we pull up, they figure we’ve got to be good because we have high standards,” he says. “When I open up my truck, their eyes light up and they say, ‘Wow, do all your trucks look like that?’ And I proudly tell them, ‘Yes, they do.’”

For a closer look, check out the video at [www.plumbermag.com/x/ranshaw](http://www.plumbermag.com/x/ranshaw) 

▼ Military ammo cans are used to store spare parts.



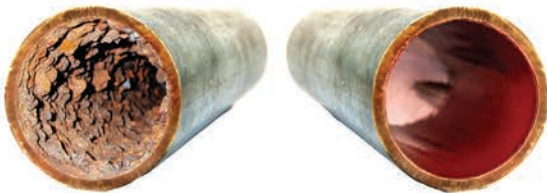
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Judy Kneiszal

## Are You a People Person?

If your plumbing company is big enough to have employees, but too small for a human resources manager, check out these tips to save time and reduce stress *By Judy Kneiszal*

**H**uman resources people are frequently the brunt of jokes in the comic strip *Dilbert*, but if you find yourself having to take care of payroll, benefits, recruiting, hiring, training and legal matters for your employees, you know that human resources is no laughing matter. In fact, it can be a stressful matter. These tasks take a lot of time, especially when they are not your specialty. But what can you do? Hiring a full-time human resources professional is probably not financially feasible, but somebody's got to take care of the people business.

### ▲ Get schooled

You don't need a degree in human resources management, but a little formal training wouldn't hurt. Check with your local technical college, community college or university to see if they offer an introductory course that you or someone in your office could benefit from. There are also online courses in human resources available, as well as numerous lectures on human resources topics available for free on YouTube.

### ▲ Read all about it

If you don't want to take a formal class, articles covering a broad spectrum of human resources topics are available online. The Small Business Administration ([www.sba.gov](http://www.sba.gov)) is a great place to go for basic information before you hire your first employee. Find information on everything from how to write a job description or an employee handbook to an overview of required and optional employee benefits. The site also explains the difference between a contract worker and an employee.

If legal issues regarding employees are what you need information about, the Department of Labor ([www.dol.gov](http://www.dol.gov)) provides answers. It's a great source for keeping up

to date on topics like wages, unemployment insurance, health plans and benefits, health and safety laws, and compliance issues.

For a little levity on the subject, check out the Evil HR Lady at [www.evillrlady.org](http://www.evillrlady.org). This blog promises to demystify human resources. Content skews a little more corporate than small business, but it's so packed full of information, you're sure to find tidbits of wisdom you can put to good use. You can also submit questions and hope the Evil HR Lady answers them. And if you don't find the answers you seek on this site, there are links to dozens of related sites.

### ▲ Tools you can use

As with any task, managing human resources is easier if you have the right equipment. Start at [www.gneil.com](http://www.gneil.com) and check out nifty tools to help manage and motivate people. You'll find everything from Federal Labor Law posters, to training games, to Employee of the Month programs complete with plaques, ready-to-engage nameplates and award certificates.

### ▲ Electronics to the rescue

The right software can also make your human resources tasks easier. Some products are designed to work with your accounting software, like SimpleHR, which works with QuickBooks. There's a product especially for offices that are heavy users of Microsoft products called Microsoft Dynamics. Other programs to check out include People-Trak HR, OrangeHRM and EmpXtrack Starter Edition.

Make sure any software you consider is adequate, but not more than you need for a small business. By that I mean some software is very task-specific and only does one thing, like payroll or benefits administration.

You probably need a good, general personnel tracking software package.

Keep in mind that some HR software is web-based. This might be advantageous to you if you find yourself squeezing in HR tasks at the end of the day at home, or you are on the road a lot but still need to keep up with HR chores. Be sure to read user reviews of the product, and if you are still confused after browsing software options online, talk with owners of similar businesses to see what they use and how they like it. Your accountant may have an opinion as well.

### ▲ Outsource it

Paying someone outside of your company to take over all HR functions is an attractive option, but out of reach cost-wise for small businesses with fewer than 12 employees. Professional employer organizations, or PEOs as they are called, generally charge a fee of anywhere from 2 to 12 percent of total wages paid. But some PEOs might, for small companies with only two to five employees, price their services at a flat monthly fee. If getting HR off your desk entirely is a priority, it wouldn't hurt to look into hiring a PEO.

### ▲ The more you know

It's probably rare for a human resources professional to start a plumbing business, but it's quite common for the owner of plumbing business to do the work of an HR professional. You can either be frustrated by the time and effort you put into these tasks, or realize that your employees are your greatest assets and, as such, they must be taken care of.

Take the time to increase your knowledge and you won't bear the brunt of jokes or get the reputation of being an "evil" HR person. You'll have happier employees, a more compliant business and, hopefully, more of the workday to devote to revenue-generating activities. **R**

*Judy Kneisel has operated her own small business for 20 years and is familiar with the many rewards and challenges of ownership. Write to her with questions, comments or topic suggestions at [thewordhouse@ameritech.net](mailto:thewordhouse@ameritech.net).*

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## Does Your Plumbing Truck Need New Wipers?

Replacing blades and keeping the washer reservoir full might not be high on your priority list, but you'll appreciate a clean, streak-free windshield the next time it rains *By Ed Wodalski*

**W**iper blades are like a leaky roof — you don't think about them until it rains. Equally frustrating is having mud splashed on your windshield and only hearing the hum of the pump when you press the washer button.

Keeping your wiper blades and washer fluid in tip-top condition might not be high on your maintenance list, but like that leaky roof, you'll appreciate a clean, streak-free windshield the next time it rains.

To extend the life of your blades on your plumbing truck or van, wipe off the rubber element with a damp paper towel to clear away dirt or debris when you fill up your vehicle. It's also a good time to look for nicks or tears.

In the winter, pull blades away from the windshield prior to a storm to prevent sticking and use an ice scraper or defroster, not your wipers, to deice the windshield. Wiper manufacturers recommend changing blades every six to 12 months and have adopted Groundhog Day as a reminder date.

When replacing blades, be sure to double-check for the correct size and connector system. A blade that is too short or improperly installed can lose its effectiveness and scratch your windshield. You can find the correct blades for your vehicle online or at your local auto parts store. You might also want to determine if a conventional, beam or hybrid blade is right for you.



### ▣ Blade technology

Conventional blades are best recognized by their skeletal framework and claw-like grips. The more aerodynamic beam blades feature a one-piece design. An encased spring allows the blade to conform to the curvature of the windshield. Small spoilers direct wind up and away from the windshield at highway speed.

Beam blades, which have been on the market for about 10 years, are also less susceptible to snow and ice buildup.

Hybrid blades combine the aerodynamic features and all-weather performance of beam blades with the multiple pressure points provided by the best conventional or bridge-style blades, says Kat Himaras, brand manager for ANCO wiper blades.

▣ Blade manufacturers recommend replacing your blades every six to 12 months, depending on climate and driving conditions. (Photos by Ed Wodalski)



“As a result, you get strong, consistent blade-to-glass contact through the full range of wiper arm motion,” she says.

Another option is to replace conventional blades with winter blades in the fall as part of your annual maintenance. Winter blades, designed for extreme weather, have a rubber cover over the frame to prevent slush from freezing joints.

“The worst thing on a wiper blade is ice,” says Peter Bukaty, group brand manager for ITW Global Brands, maker of Rain-X products. “Ice has a jagged edge and it’s hard. It can shear and cause nicks in the rubber. When you get nicks in the rubber, that part of the squeegee isn’t touching the windshield. You’re going to have a streak where that damage takes place.”

And don’t run wipers across a dry windshield unless your blade is a Rain-X Quantum. Quantum beam blades have a paste-like, semi-wet, water-repellant technology embedded in the lip of the squeegee. The blades also have an indicator dot at the tip that turns yellow, telling you it’s time for a change.

“The winter formulas work in the summer just fine. But the summer formulas do not work in the winter.”

*Ron Fausnight*

### ▣ Choosing a wiper

So, how do you know which wiper blade is best for your vehicle?

“One thing is to copy what came on your vehicle,” Bukaty says. “When original equipment manufacturers develop blades for a particular vehicle, they take the technology into account to make sure it’s what will work best with that windshield.”

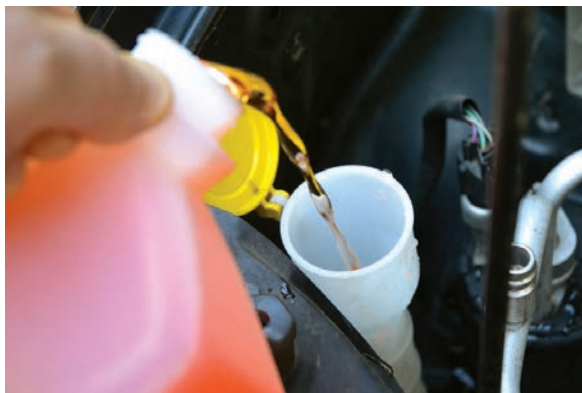
Another determining factor can be price.

“Some people aren’t willing to pay for a premium beam wiper blade that may cost \$15 to \$25. They may just want to pay \$7 to \$12 for a conventional blade,” Bukaty says. “The hybrids are usually priced in the middle, \$14 to \$20.”

Wiper blades used on commercial trucks are similar in technology to those used on autos or pickups.

“The sizing may be different, but it should work fine for either application,” he says.

Squeegee blades are made from either natural rubber or a synthetic blend. While natural rubber provides good wiper quality, it will degrade over time, especially when exposed to UV rays. Most premium blades use a synthetic blend for greater durability.



▲ Match washer fluid to the climate and keep the reservoir topped off to prevent deicing agents from evaporating.

### ▣ Washer fluids

When it comes to washer fluid, there are three basic formulas: summer blend, winter blend and all-season. Some fluids have a bug remover. Rain-X also adds a water repellent to its products and offers an additive that can be mixed with other brands.

Ron Fausnight, ground technical manager for ITW, says the most important thing is to match the washer fluid to your climate. Summer fluids contain mostly water and detergent, while winter and all-season blends have methanol to prevent freezing. If you live where the temperature drops below freezing or drive from a warm to cold environment, Fausnight recommends using all-season or winter fluid year-round.

“The winter formulas work in the summer just fine,” he says. “But the summer formulas do not work in the winter.”

If you have summer fluid in your vehicle, you can gradually replace it with a winter blend as the weather turns colder, although it’s recommended that you simply pump it out on the windshield in fall and refill your system with winter or all-season fluid.

**A word of caution:** Since most washer fluid contains methanol, it can irritate skin and burn the eyes. Ideally, gloves and safety glasses should be worn. If you do get some on your hands or splash it in your eyes, be sure to rinse the area with water. Methanol can be toxic if ingested in large amounts, so keep open containers away from pets and children. Methanol vapor is also flammable. If you have an open container or spill a large amount in a closed environment, it’s best not to light a match or do grinding or welding until the vapor has dissipated.

**A final tip:** Keep your washer fluid reservoir full and tightly capped, especially in winter, to prevent the methanol from evaporating and reducing the fluid’s effectiveness. 📌

# Trenchless Tool Saves the Day

Georgia plumber installs new waterline without disturbing swimming supply store parking lot *By Paul Nicolaus*

**A**t a swimming pool products and supply store, water is often your friend, except when it floods the parking lot.

This was the scenario when Adam Barnes, owner of Barnes Plumbing and Septic, received a Saturday call from Georgia Pool Supply in Stockbridge, Georgia. The owner thought a swimming pool had sprung a leak before determining the water was coming from another source.

“He said, ‘I think I’ve got a busted waterline,’” Barnes recalls.

“When it comes to weekends and nights, there is no emergency to a plumber unless it’s an emergency to a customer,” Barnes says, and there were plenty of factors that turned this into crisis mode for the store owner.

With a flooded lot on the busiest day of the week and no running water — it was shut off to stop the flow — help was needed in a hurry. Within about two hours Barnes was digging into the problem.

From previous jobs at the site, Barnes knew the waterline was located under the parking lot. Along with Heath



**Jackson, Georgia**

<b>COMPANY</b>	Barnes Plumbing and Septic, LLC
<b>OWNER</b>	Adam Barnes
<b>LOCATION</b>	Jackson, Georgia
<b>YEAR FOUNDED</b>	2008
<b>SPECIALTY</b>	Service plumbing and septic

Rogers, who helps out part time on weekends and on large jobs, the pair noticed asphalt had been removed at some point where the waterline entered the store.

When they turned the water back on — out it flowed. Digging down with a shovel, they found the line but not the source of the leak. To keep from tearing up the asphalt, they went to the water meter, dug down and located the line.

“I have a trenchless waterline replacement tool for the old poly pipes,” Barnes says. “We used it to replace the waterline with 1-inch pipe from one end of the parking lot all the way to the other without digging up any of the asphalt.”

The Wedge, made by Footage Tools Inc., is designed for 3/4-inch to 1-inch trenchless service



▲ Owner Adam Barnes (left) and his assistant, Heath Rogers, used a trenchless pipe replacement tool to install a new waterline under an asphalt parking lot at a swimming pool product supply store in Georgia.


▼ The Wedge trenchless service line replacement tool from Footage Tools.



line replacement. A cable is run through the old pipe and connected to the head of the bullet-shaped wedge. The new pipe is connected to the rear of the tool and pulled along.

“You basically slide the cable through the old pipe from one end to the other,” Barnes says. “I use my mini-excavator (a Kubota U25) to pull the cable. The tool splits the old pipe and pulls the new one through at the same time.”

Tackling the repair job in this manner helped minimize property damage, while saving time and cost to the customer. Barnes estimates without the trenchless tool, it would have cost the property owner three times as much in asphalt and plumbing repair work.

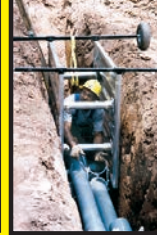
“What would’ve been an eight- or 10-hour job we turned into a three-hour job with this one tool,” he says. “I was able to pass those savings along to the customer and, being it was a Saturday, I was able to get back to my family.” 

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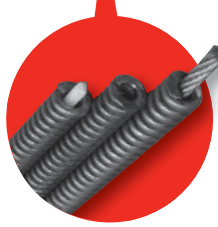
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Ken Wysocky

## Image Matters

Tie-wearing plumbers stand out from the competition

By Ken Wysocky

**W**hen plumber Brham Trim decided to form Action Auger in 2001 in Calgary, Alberta — a very competitive market for plumbers — he figured differentiation from other companies would be critical to growing his business.

So he readily agreed when his father, Marty (now retired from plumbing), suggested Trim require his servicemen to wear uniforms and clip-on ties. Eventually, his customers renamed the business by asking if Action Auger was the company with “the gentlemen plumbers.”

Today, it’s one of the largest plumbing companies in Canada. A primary factor in that growth is a professional image that rejects the public stereotype of slovenly plumbers whose pants hang, well, a little too low.

### Q: Why is it important to make a good first impression?

**A:** If you come to a customer’s home and look and act professional, people will think you’re professional. It’s all about perception. If you look and act like a dirtbag plumber, you’ll be treated like a dirtbag plumber. If you look and act like a professional, you’ll get treated like one.

When I was growing up and working for my dad, I saw a lot of plumbers at (parts) warehouses that looked real dirty and grubby. As a group, they looked so nasty. And I always heard the jokes about plumbers, and we were always the punch line. I never liked that. So I wanted to create a perception that would help build a better name for plumbers as a whole. If the first impression you make is positive, it helps build trust and likeability.

It also helps our marketing efforts. When your company name is The Gentlemen Plumbers and your servicemen wear a tie, it all comes together. People remember the ties. They not only create a good impression, they also serve as a great marketing tool. If it’s just Joe Smith Plumbing, there’s no differentiation.



“It’s all about perception. If you look and act like a dirtbag plumber, you’ll be treated like a dirtbag plumber. If you look and act like a professional, you’ll get treated like one.”

**Brham Trim**

### Q: What are your uniforms like?

**A:** Our plumbers wear clip-on ties for safety reasons. They don't take them off while they work; they usually just tuck them inside their shirt buttons. You get used to it — after a while, it's not an issue. We also wear light-blue button-down shirts with button-down collars, dark-blue cargo pants and steel-toed, black slip-on dress shoes.

If it's snowy outside, we take off our shoes and use another pair for working inside. We roll out a small mat that we stand on when we change shoes to make sure nothing from the outside gets inside. When the weather is nice, we use floor saver shoe covers. We don't consider a job finished until the job site is completely clean.

### Q: How strict are you about enforcing this dress code?

**A:** Some guys don't like wearing the tie, especially when they first start working for us. Sometimes I see a guy without a tie and he says it's on the dashboard of his truck. But if I see you without a tie, you go home for the day. That tie is important — it's how people connect with us. So when the shirt goes on, the tie goes on, too.

Our customers named us, and if our guys don't dress the same as when they first saw us, it leaves a bad taste. We want our servicemen to look the same every time.

Also, their willingness to wear a tie tells us a lot about them. If they do well with little things, like being required to wear a tie, it sets them on a path toward doing well with the big things. And if they can't do the little things, they're probably not doing all the other things we ask them to do to differentiate us as the premier plumbing company in Alberta.

### Q: Have competitors copied your uniform-and-tie concept?

**A:** No one has copied it yet. Some companies put a picture on their websites that show a plumber wearing a tie, but their plumbers don't actually wear ties, which must be a bit of a letdown for their customers.

### Q: Do you use a uniform service that provides the shirts, pants and ties?

**A:** We used to have a company supply and clean the uniforms. But now we buy them and our guys wash their own uniforms. Some even press them so they look really sharp. We replace the uniforms and shoes every six months. ... They do get dirty and stained and we want them to be nice and clean.

### Q: Doesn't that get expensive?

**A:** Well, each guy has seven uniforms, so with 25 guys, it adds up. It costs us about \$45,900 a year to keep the guys in uniforms and shoes. (That's in Canadian dollars, which converts to about \$34,650 in American dollars.)

But I think it's worth every penny. The number of times that people comment about the ties and uniforms makes it all worth it. I think it's definitely a big part of why we have so many repeat customers. ... I'd estimate that 60 to 70 percent of our business comes from previous customers. And I believe that the value of a customer is about \$25,000 during a lifetime of service. So you can see how important it is to develop relationships with customers and get them to like and trust you — that's what builds a business. At least that's what has worked for us.

### Q: So it's safe to assume that off-color jokes and sophomoric humor have no place in your company?

**A:** Yes. I'm a religious guy, so I don't allow any coarse language or swearing. We have a 100 percent customer satisfaction guarantee, and if a customer ever told me that one of our employees was swearing on the job, I'd refund their money.

It all goes back to the things I didn't like about the industry when I was growing up as a young man. Anyone can make a difference in this world, and this is how I'm doing it — making a difference in our trade by improving our image. 📧

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# Getting a Grasp on Lost Objects

Cloverleaf Tool's pneumatic GRIPPER navigates 90-degree bends in 4-inch pipe *By Craig Mandli*

**T**here are numerous ways to clear pipe blockages. Water blasters and powerful pressure washers can break up and push out material, while cutters can dislodge, chop or even pulverize roots or other obstructions. However, as most parents of young children can attest, occasionally something valuable ends up lodged in the sewer drain or ventilation system — a blockage that requires a more specialized tool to dislodge and even save the object. The Pipe GRIPPER Tool, featured in the Cloverleaf Tool booth at the 2016 Water & Wastewater Equipment, Treatment & Transport Show, is just such a product.

The Swiss-made pneumatic tool is designed to help plumbers and drain cleaners grab objects in sewers and ventilation systems.

"This is a tool that's strong enough to dislodge large, heavy objects, or gentle enough to rescue animals from inside the pipe," says Gary Ulfers, president and owner of Cloverleaf Tool. "It can be used in 4-inch or larger pipe, which makes it a great fit for plumbers, industrial drain cleaners, municipalities or HVAC contractors."

The tool uses 15 psi and can work up to 82 feet from the operator, with extensions available for longer runs. Sold in the United States exclusively through Cloverleaf Tool, it can navigate 90-degree bends in 4-inch pipe.

"I heard about this tool from a friend who works in the trade in Germany," Ulfers says. "We actually went to Switzerland to see it in action, and came away extremely impressed. There's just nothing like this over here."

The tool is available with an optional camera, and is fed into the pipe using fiberglass pushrods, cable or sectional rods. It is 2.16 inches in diameter, 9.45 inches long and weighs 10 pounds. The tool features teeth-grabber pliers for


a strong grip on even grimy, slippery objects. Cloverleaf began marketing the Pipe GRIPPER a few months before the WWETT Show, and according to Ulfers, there was a definite buzz.



▲ Cloverleaf Tool sales manager George Goins (right) explains how to operate the Pipe GRIPPER Tool to a family plumbing tandem at the 2016 WWETT Show. The pneumatic tool is designed to help plumbers and drain cleaners grab objects and clear blockages in sewers and ventilation systems. (Photo by Craig Mandli)

"To tell you the truth, we ran out of fliers to give out," he says. "I knew that this crowd would like it, but the interest exceeded my expectations. The response has been tremendous."

Cloverleaf is a longtime exhibitor at the WWETT Show, and Ulfers believes the 2016 show had some of the best traffic flow he's seen in a long time.

"Our big goal for this show is to get people picking up our catalogs and talking to us about what product lines we offer," he says. "This show is really our target market. We obviously cater to a pretty niche business, and all those people are here." **800/365-6583; [www.grippertool.com](http://www.grippertool.com).** 



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# Hydronic Heating Systems | *By Craig Mandli*

## Boilers



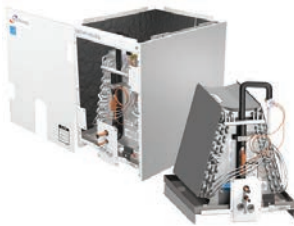
### LAARS Heating Systems NeoTherm

Commercial NeoTherm boilers from LAARS Heating Systems have an easy-to-navigate color touch screen for quick access to the control's full functionality. A variable-speed boiler pump control option, VARI-PRIME, optimizes total installed efficiency

by matching boiler input modulation to pump flow. The fully packaged, 95 percent efficient unit is available in 285 through 1,200 MBH sizes as a modulating boiler or volume water heater. It is a direct-vent, sealed-combustion boiler or volume water heater that modulates with a 5-1 turndown ratio. Zero clearance to combustibles and consolidated connections (horizontal or vertical direct vent) make it suited for tight installations. **800/900-9276; www.laars.com.**

### Modine geothermal systems

AHRI-certified geothermal systems from Modine are available with stand-alone A-coils for use with split ground-source heat pump systems that can be matched with furnaces by other manufacturers for dual-fuel installations. The coils are available in cased and uncased configurations for easy application. Features include stainless steel drain pans, condensate overflow switch, TXV, and 18-gauge aluminized, powder-coated steel cabinet (cased only). The air-handling units include 4-inch-thick filters and supply duct flanges. The 048 Model motor has been increased to 1 hp. Horizontal models can be installed with either right- or left-side return. **800/828-4328; www.modinehvac.com.**



### NAVIEN NHB Series

The NHB (NAVIEN heating boiler) Series from NAVIEN is available in four sizes (NHB-55, NHB-80, NHB-110 and NHB-150) with turndown ratios of 7-to-1, 10-to-1, 11-to-1 and 15-to-1. The 15-1 turndown ratio in the NHB-150 is achieved with the burner system, which includes a dual venturi gas delivery system. The boilers carry the ENERGY STAR 2015 Most Efficient rating and include smart control features for high-efficiency installation. **800/519-8794; us.navien.com.**



### Noritz America CB Combi Boiler

The CB Combination (Combi) Boiler from Noritz America uses high-efficiency condensing technology to deliver hot water for both plumbing and hydronic heating applications, meeting two needs with a single appliance. The unit delivers hot water at 95 percent efficiency, earning it the highest Energy Star rating. Delivering up to 9.2 gpm of domestic hot water, it can be used for radiator, baseboard or in-floor radiant hydronic heating as well as HVAC systems using water-to-air heat exchange with an air handler and pavement snow melting. The CB180DV has a maximum Btu per hour of 180,000 for hot water and 100,000 Btu per hour for heating. The CB199DV has a maximum Btu per hour of 199,000 for hot water and 120,000 Btu per hour for heating. **714/433-2905; www.noritz.com.**

### Slant Fin Corp. CHS

The gas-fired CHS line of condensing, high-efficiency, stainless steel boilers from Slant Fin Corp. is available in eight wall-mount models. Each boiler modulates up to a 5-1 turndown ratio with sizes ranging from 85,000 to 399,000 Btu per hour. Inputs can be installed with top or bottom supply





and return connections, top or bottom gas connections, vent runs of up to 150 feet and five vent termination options. The ASME-certified fire-tube exchanger is made from 316L stainless steel for corrosion resistance. **516/484-2600; www.slantfin.com.**

### U.S. Boiler Company K2 Firetube

The high-efficiency **K2 Firetube** boiler from **U.S. Boiler Company** has a stainless steel vertical fire-tube heat exchanger and is available in six sizes, from 85 to 270 MBH. A combi version is also available at 155 MBH. It has an ergonomically angled touch-screen display, which interfaces with the Sage2.2 boiler control system and outdoor reset control. It comes with a three-in-one vent connection, top or bottom supply/return/gas connections, a split-voltage junction box with fused connection boards and a full-height side access panel. **717/397-4701; www.usboiler.net**



tion system to provide complete control over when hot water is needed. It includes a three-speed high-performance stainless steel pump fastened to an electronic control box, and can be located at the hot water heater on a dedicated return line. **800/200-1956; www.gothotwater.com.**

### HBX Control Systems Wi-Fi Zoning System

The **Wi-Fi Zoning System** from **HBX Control Systems** features a zone control, programmable thermostats and Wi-Fi communication module. Each zone can be viewed or configured from a smartphone or tablet device, enabling the user to control comfort any time, any place. The ZON-0550 can control up to four zones plus fan coil control (W-Y-G) per module. Designed for quick and simple installation, it connects to a two-wire THM-0300 programmable thermostat, making it suited for retrofits and new installs. **403/720-0029; www.hbxcontrols.com.**



### Utica Boilers MAC

The **MAC** high-efficiency, wall-mounted modulating condensing boiler from **Utica Boilers** has artificial intelligence controls that self-commission and continuously calibrate to ensure maximum efficiency at all times. It has the ability to automatically set up the boiler during initial startup, recognizing whether propane or natural gas is being used. The control measures water temperature, flue gas temperature and pressure that can impact boiler operation and carbon monoxide levels. The control shuts down boiler operation should levels exceed normal operating values. It is available in Combi or space heating models. The Combi model operates at a high of 153 MBH during a call for domestic hot water. During a call for central heating, both models operate at a high of 126 MBH. **315/797-1310; www.utica boilers.com.**



### See Water HLA liquid level alarm

The **HLA liquid level alarm series** from **See Water** is designed to warn of potentially threatening liquid level conditions. The UL-listed series includes the HLA type 1 (indoor rated) liquid level alarm, the HLA-4X liquid level indoor/outdoor robust alarm, and the HLA-4X-X (models monitoring two to 10 liquid level alarm points). Applications include tank monitoring, sewage pump chambers, sump pump basins, lift stations and other liquid level monitoring. **888/733-9283; www.seewaterinc.com.**

### SJE-Rhombus MySpy WiFi Messenger

The **MySpy WiFi Messenger** indoor alarm system from **SJE-Rhombus** monitors and reports any residential alarm condition (contact closure), including sump high water level or over/under temperature alarms. When the contact closes, the alarm notifies the user both locally (audible and visual alarms) and remotely via SMS text messages and/or emails to a smartphone, tablet or computer using the existing Wi-Fi network (or Ethernet). It will notify up to four contacts (two email, two text contacts) for alerts, including alarm, power lost, power restored, low battery and alarm offline. **888/342-5753; www.sjehombus.com.**



## Controls

### ACT, Inc./D'MAND Kontrols S3-100

Designed to operate with tank or tankless water heaters, the **S3-100** from **ACT, Inc./D'MAND Kontrols** incorporates advanced on-demand technology into a home's hot water distribu-



## Fittings

### Eclipse Tools North America BoilerMag XT

The **BoilerMag XT** industrial boiler filter with stainless steel housing from **Eclipse Tools North America** is designed to prevent the buildup of ferrous oxide and scale in central heating systems. As water circulates through the system, magnetic rods attract the iron oxide and removes particles down to sub-micron size. **800/260-2124; www.eclipsetoolsinc.com.**



### John Guest reducing coupler

The **reducing coupler** from **John Guest USA** is available in 1/2- by 3/8-inch, 3/4- by 1/2-inch and 1- by 3/4-inch CTS sizes for use in the domestic plumbing market. Manufactured from high-quality engineered plastic with an EPDM O-ring, the coupler satisfies both hot and cold water plumbing/remodeling and hydronic heating applications. It is suitable for use with any combination of copper, PEX or CPVC pipe and does not require tools to make a leak-proof connection. The coupler incorporates Twist-and-Lock technology for extra security. It is both lead- and corrosion-free, and is NSF- and IAPMO-approved for domestic plumbing in the U.S. and Canada. **973/808-5600; www.johnguest.com.**

The **reducing coupler** from **John Guest USA** is available in 1/2- by 3/8-inch, 3/4- by 1/2-inch

### REHAU Construction RAUPEX SPEED

The **RAUPEX SPEED** radiant fastening system from **REHAU Construction** enables contractors to install heating pipe in over-pour and concrete installations up to 30 percent faster. The 1/2-inch O2 barrier pipe with hook-and-loop wrap is walked onto the 3 mm thick RAUPEX SPEED mat without the use of specialized tools. The mat has an adhesive backer that attaches to thermal insulation, concrete and plywood materials without penetrating the surface, protecting thermal, vapor and sound insulation properties. The pipe can be detached and repositioned, saving time and reducing waste. The pipe is available in 300- and 1,000-foot coils and the mat is available in 3.1- by 52.9-foot rolls. **800/247-9445; www.na.rehau.com.**



### Webstone Valves Isolator

The **Isolator** with round flange from **Webstone Valves** has a round shape and bolt patterns designed to accommodate high-efficiency variable-speed pumps. It is available in three flange designs with FIP, SWT or PRESS connections in 1 1/2- and 2-inch sizes. All valves have a uni-body design, eliminating a leak path at the flange. **800/255-9529; www.webstonevalves.com.**



### Zurn Industries PEX QickCap

**PEX QickCap** crimp rings from **Zurn Industries** have a positioning end cap for connections in plumbing and radiant heating applications. The ASTM F1807 fitting system delivers a 360-degree seal for leak-free connections. Suitable for commercial and residential plumbing, the rings are available in 1/2-, 3/4-, 1-, 1 1/4-, 1 1/2- and 2-inch sizes. **814/875-1252; www.zurn.com.**

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## Polyethylene Pipe

### Uponor PEX pipe

**Uponor PEX** (cross-linked polyethylene) pipe is available in 2 1/2- and 3-inch sizes and includes Wirsbo hePEX oxygen-barrier pipe for hydronic heating and cooling applications. It is available in various coil lengths and straight lengths to meet any hydronic heating application. The pipe is designed to be a highly durable, cost-effective option for transporting water to HVAC terminal units, such as chilled beams and fan coils. **800/321-4739; www.uponor-usa.com.**



## Pumps



### Armstrong Fluid Technology maintenance-free S&H circulators


Maintenance-free S&H circulators from **Armstrong Fluid Technology** eliminate the need for oiling. An option for traditional sleeve bearing designs, they are compatible with most circulator models that require maintenance. The universal module that services 2, 3, 4 and 5 Series S&H circulators is compatible with installed SBAs. **800/356-9845; www.armstrongfluidtechnology.com.**

## Caleffi North America HYDROFILL

The **HYDROFILL** portable water-treatment filling unit from **Caleffi North America** produces demineralized water for use in closed hydronic heating and cooling systems. Salts and other soluble minerals are mostly eliminated to prevent premature equipment malfunction due to lime scale formation. The portable filling unit is designed for easy on-site connection. **414/238-2360; www.caleffi.com.**



## Taco 00e VR1816 circulator

The ECM, wet rotor **00e VR1816** circulator from **Taco** has up to 18-foot shut-off heads and 16 gpm flow. With the turn of a dial, it provides self-sensing variable-speed operation in three different modes, including infinitely variable fixed speed for zoning with circulators, and constant pressure, self-adjusting, variable speed for zone valve applications. The circulator maintains a constant pressure differential in the system as heating load increases or decreases, and proportional pressure, self-adjusting, variable speed for panel radiators with thermostatic valves. Its LED displays operating mode and error code diagnostics. Other features include an easy-to-use dial to set operating speed or pressure control, an integral flow check (IFC) and dual electrical knockouts. **401/942-8000; www.taco-hvac.com.** 



## Goolds Water Technology, a Xylem brand e-SV

The **e-SV** range of stainless steel vertical multistage pumps from **Goolds Water Technology, a Xylem brand**, has an EISA-compliant motor for maximum efficiency in municipal, agricultural, HVAC, water treatment and light industry applications. Its design enables the mechanical seal to be removed without detaching the motor. A reduced impeller axial thrust ensures longer motor bearing life. The hard intermediate bush bearing increases the ability to withstand heavy-duty applications. The pump has a head up to 1,200 feet and flow rates up to 725 gpm. Its optional i-ALERT monitor continuously measures vibration to reduce damage and support optimum performance. It is interchangeable with SSV Series pumps for added flexibility. **866/325-4210; www.goolds.com.**



The **e-SV** range of stainless steel vertical multistage pumps from **Goolds Water Technology, a Xylem brand**, has an EISA-compliant motor for maximum efficiency in municipal, agricultural, HVAC, water treatment and light industry applications. Its design enables the mechanical seal to be removed without detaching the motor. A reduced impeller axial thrust ensures longer motor bearing life. The hard intermediate bush bearing increases the ability to withstand heavy-duty applications. The pump has a head up to 1,200 feet and flow rates up to 725 gpm. Its optional i-ALERT monitor continuously measures vibration to reduce damage and support optimum performance. It is interchangeable with SSV Series pumps for added flexibility. **866/325-4210; www.goolds.com.**

## Rhomar Rho-Flush 1000

The **Rho-Flush 1000** from **Rhomar** features ultra-high fluid flow to accelerate the cleaning process of hydronic systems clogged with corrosion. The 39 gpm flow rate provided by the IP55-rated pump motor enables cleaning fluids such as Hydro-Solv and Skale-X to quickly dislodge debris from walls of pipes and heat exchanger surfaces. The acid-resistant tank has a 15-gallon capacity. It can withstand 167 degrees F and has a maximum head of 78 feet. It is equipped with an instantaneous flow reverser, 110-volt electrical connections and comes with hoses and fittings. The pump can be connected in series with the Rho-Mag, which helps remove magnetic materials recirculation. It can also be used to fill/purge hydronic systems. **800/543-5975; www.rhomarwater.com.**



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# Hydronic Heating Systems

By Craig Mandli

## Space-saving combination boiler provides heat, hot water



**Problem:** A 2,000-square-foot single-family home in southern New Hampshire had a forced air heating system. The homeowner decided to upgrade to hydronic heat but needed a system that was compact and easy to install.

**Solution:** Buderus panel radiators and a Greenstar floor-standing gas-condensing combination boiler from **Bosch Thermotechnology Corp.** provide heat and on-demand hot water. The combination units are designed for applications where wall-mounting options are not available or a floor-standing unit is preferred. All models have a 95 percent ENERGY STAR Most Efficient rating.

**Result:** “I’ve installed a lot of Buderus oil-fired floor boilers, but this is my first Greenstar installation,” says installer Jason Wetherbee. “I’m impressed with how compact and relatively easy to place it is. The integrated low-loss header is pre-piped so there’s no need for primary/secondary piping, and venting is simplified with polypropylene, PVC or CPVC.” 800/283-3787; [www.boschheatingandcooling.com](http://www.boschheatingandcooling.com).

## Smart circulators improve energy efficiency by 85 percent



**Problem:** When St. John University in Minnesota set out to retrofit its heating system, part of the project involved replacing the old heat pumps in the Peter Engel Science Center.

**Solution:** Local wholesaler, Ferguson Enterprises, recommended installing **Grundfos Pumps MAGNA3** smart circulators to both increase energy efficiency and improve building comfort. The circulator pumps learn the varying energy-usage patterns of an application and operate only to the extent required. The intelligent technology improves energy efficiency up to 85 percent and saves utility costs by continuously fine-tuning power consumption, discharge head and flow rates to meet the system’s dynamic needs.


**Result:** Operators anticipate \$693 in annual energy savings and a system payback in less than three years. After the coldest winter in 20 years, facility managers noted the circulators were operating at 25 percent of the total head of the old pumps, while maintaining comfort levels. In other words, the circulators are running at the original flow rate, using less power, less energy and at less cost. **800/921-7867; us.grundfos.com.**

## Drain-tempering valves limit discharge temperatures



**Problem:** Balboa High School, part of the public school system in San Francisco, California, needed new low-pressure steam boilers that limited maximum drain discharge temperatures.

**Solution:** Guttman & Blaevoet Consulting Engineers designed the project, with Tünde Munz, P.E., LEED AP and Principal of G&B, initiating the solution. As required by code, these low-pressure boilers must have relief valves. Due to safety concerns about venting steam near where students are congregating, the designer chose to vent the relief valves into suitably sized piping, which runs to a floor drain inside the boiler room. To comply with plumbing codes limiting maximum drain discharge temperatures, the designer chose to add self-operating, thermostatic, drain-tempering valves that only inject cold water into the vent lines when the relief valves activate. These drain-tempering valves from **ThermOmegaTech** automatically detect when the drain temperature is above allowable levels and discharge just enough water to temper drain flow below the allowable 140 degrees F.

**Result:** The drain-tempering valves require no outside power or signal, which made the installation efficient, clean, relatively simple and cost-effective. **877/379-8258; www.thermomegatech.com.** 

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## Product Spotlight

Link Manufacturing ramp swings out of the way when not in use *By Ed Wodalski*

**T**he swivel ramp from Link Manufacturing, introduced at the 2016 NTEA Work Truck Show in Indianapolis, pivots 180 degrees when you need to load or unload cargo, and swings back in when you're ready to roll.

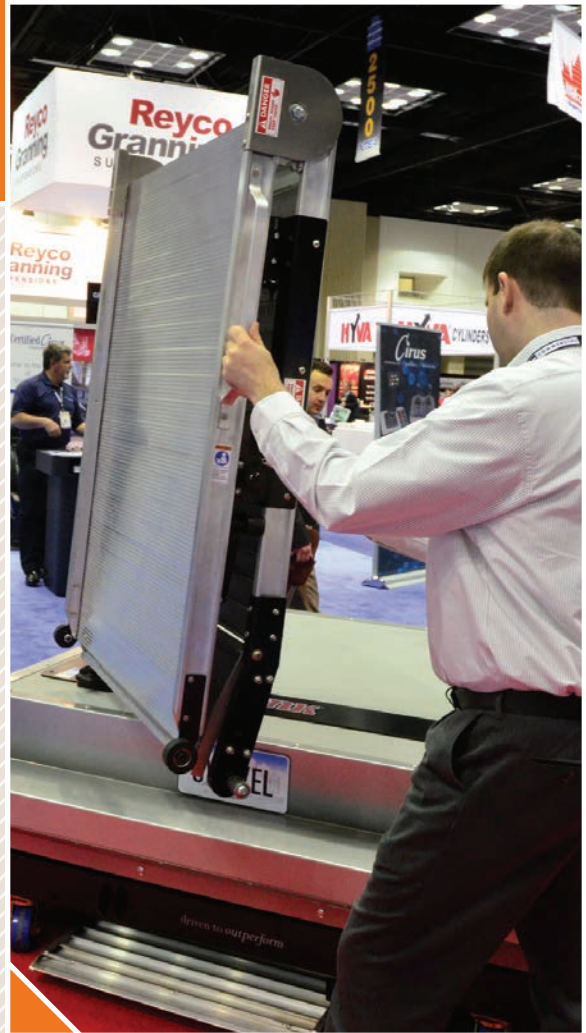
"We've had folding ramps for a long time, and customers asked for a swivel option," says Michael Hof, vice president of sales and marketing.

Designed for cargo vans and box truck applications, the 30- to 47-inch-wide aluminum ramp offers up to 1,500 pounds of loading capacity. Available in 99-, 108- and 117-inch lengths, the ramp mounts in the rear stored position like a traditional folding ramp, but can also be stored behind the wheel well. A quick-release lever enables the bifold ramp to be unlatched without requiring the user to bend, lift or enter the vehicle.

"By swiveling, you get easy access to the back of your vehicle," Hof says.

The primary latching module can be easily removed to provide open floor space for loading and transporting oversized cargo.

Predrilled bolt holes provide easy installation in Promaster, Nissan, Transit and Sprinter vans. Ramps can be installed by an upfitter or in the shop — instructions and hardware are included. **800/248-3057; [www.linkramps.com](http://www.linkramps.com).**



### Milwaukee Tool adaptable pipe wrench

The Cheater adaptable pipe wrench from Milwaukee Tool features a three-length adaptable design, giving users the versatility on jobs that previously required multiple sizes of traditional wrenches. The wrench comes with two interchangeable handles that enable it to operate in three lengths: 10 inches for access in tight spaces, 18 inches for general-purpose use and 24 inches for additional reach and maximum leverage. **800/729-3878; [www.milwaukeetool.com](http://www.milwaukeetool.com).**



### Grohe shower water thermostat

The Grotherm 2000 shower water thermostat from Grohe features an outer surface that never exceeds the temperature of the water. A cooling channel and special couplings where the hot water enters the thermostat creates a barrier between the hot water and chrome surface to prevent scalding. The thermostatic valve senses and controls the water temperature, while a pressure-balance valve senses and controls the ratio of hot water to cold water. **800/444-7643; [www.groheamerica.com](http://www.groheamerica.com).**





### BJM SKG Series shredding pumps

The SKG Series of high-performance shredding pumps from BJM Pumps are available in three sizes with two impeller trims for lower head requirements and the ability to handle industrial liquids with gravities higher than water. Features include RAD-AX dual shredding technology

to chew through difficult solids, hardened 440C stainless steel shredding elements, and large-solids-size passage through the impeller and volute coupled to a high-torque, four-pole motor (2, 3 and 5 hp). **877/256-7867; www.bjmpumps.com.**

### A.Y. McDonald bottom suction pump

The bottom suction pump from A.Y. McDonald is designed to provide maximum drawdown in cisterns or tanks. Available with a 1/2 or 3/4 hp, 115-volt motor, it pumps 15 gpm. Features include quiet operation and corrosion-resistant material for clean and dirty water, rainwater, or pond water. **800/292-2737; www.aymcdonald.com.**



### CUES portable inspection system

The MARK 3 portable CCTV pipeline inspection system from CUES operates all CUES mainline cameras, condition assessment software and transporters in 6- through 72-inch pipe. The inspection system can be mounted in trailers, Ford Transit, ATV or used as a stand-alone system. It can be outfitted with a soft mount and carrying handles to transport the MARK 3 between inspection platforms. Features include built-in diagnostics, variable speed control reel, automatic payout and an emergency shut-off. **800/327-7791; www.cuesinc.com.**

### Clean-Fit Blue Monster drain opener

Blue Monster Drain Banger professional-strength drain opener from Clean-Fit Products, a division of The Mill-Rose Co., devours hair, grease, soap and organic matter in less than 60 seconds. Available in three sizes, the hot-water activated cleaner is odorless and will not harm plumbing fixtures, porcelain or septic systems. It can also be used for preventive maintenance to eliminate hair, grease, soap and oil buildup. The blue-flake drain cleaner is available in 1-, 2- and 6-pound easy-pour containers. **800/321-3598; www.cleanfit.com.**



### Reelcraft spring-retractable cord reels

Series L 70000 cord reels from Reelcraft Industries are designed to accommodate up to 100 feet of 12-gauge cord. The heavy-duty base, all-steel construction and a baked-on

powder-coat finish combine to produce a rugged, corrosion-resistant product. The redesigned latching mechanism provides longer service life of the latch components. The containerized drive spring offers safer and easier handling during maintenance. Two sealed ball bearings produce a smoother spool rotation and easier operation. **800/444-3134; www.reelcraft.com.**

### Watts dual outlet overflow roof drains

The RD-700 epoxy-coated, cast iron, dual outlet combination roof drain/overflow from Watts Water Technologies provides primary and overflow drainage in a single roof penetration, requiring half the total roof penetration typical drains demand. The combination drain has a flashing clamp, integral gravel stop and 4-inch-high internal overflow standpipe. It also has a secured ductile iron dome and no hub outlets. **978/688-1811; www.watts.com.**



### DPL Telematics GPS tracking system

The Trackall OBDII vehicle tracking system from DPL Telematics has no external wiring or antenna and plugs into the existing OBDII port of most vehicles, enabling managers to wirelessly monitor vehicles from an internet-based software package and mobile app. Anti-tamper features include a backup battery that delivers immediate disconnection notifications with location, as well as GPS jamming detection. **800/897-8093; www.dpltel.com.**

### PIP protective rain gear

Falcon protective rainwear and liquid splash protection from Protective Industrial Products is designed to defend against heavy rain and provide splash protection for industrial pressure washing applications. **800/262-5755; www.pipglobal.com.**



## Isuzu Commercial Truck of America names president



Isuzu Commercial Truck of America named Shaun C. Skinner company president. He replaces Hisao Sasaki, who returns to Isuzu Motors Limited in Japan. Skinner joined American Isuzu Motors in June 1987, and moved to the company's commercial vehicle division in 2002. He was named ICTA's executive vice president and general manager in January 2008. Skinner also serves as president of Isuzu Commercial Truck of Canada.

## Dwyer Group celebrates 35th anniversary

Dwyer Group celebrated its 35th anniversary in March. Founded in 1981 by Don Dwyer Sr., Dwyer Group has grown to include 11 different commercial and residential franchise service brands, including Mr. Rooter. Today, these service brands account for more than \$1.3 billion in annual systemwide sales.

## Uponor increases investment in Upstream Technologies, names officers

Uponor completed a second-round investment in Upstream Technologies to support the launch of the company's new Modified Philip Dunne (MPD) Infiltrometer. In August 2014, Uponor purchased a minority position in Upstream Technologies to support the SAFL Baffle, a stormwater management product.

Uponor North America promoted Tony Radcliff, former vice president of marketing, offerings and engineering, to vice president of group technology for Uponor Corporation, UNA's parent company, headquartered in Vantaa, Finland. Rusty Callier, former director of operations for Uponor North America, was named director of sustainability and corporate responsibility for Uponor Corporation.

## Ferguson gains market share, appoints chief marketing officer

Ferguson's parent company Wolseley plc, distributor of plumbing and heating products to professional contractors, reported overall growth of 6.5 percent for the first half of the 2016 fiscal year, increasing its revenue 4.3 percent on a like-for-like basis, which measures growth of Ferguson's existing stores or branches that have been open for at least one year. Acquisitions contributed 2.1 percent of additional revenue growth. The company's trading

margin was 7.9 percent, consistent with last year, and trading profit was 5.5 percent ahead of last year. Ferguson also named Mike Brooks chief marketing officer. He has led the company's e-business efforts since 2007 as vice president of e-business for the North American region. In his new role, Brooks is responsible for expanding on new business development and meeting the rapidly changing needs of customers.

## Caleffi selects Excellence winner



▲ Patrick Driscoll right, of Ironclad Mechanical Plumbing & Heating receives the Caleffi monthly Excellence Award from Stephen Sawatsky of Mechanical Systems 2000.

Patrick Driscoll of Ironclad Mechanical Plumbing & Heating Inc. in Edmonton was chosen as a Caleffi Excellence winner for his design of a hypo-allergenic, low-load heating and cooling system for a 3,500-square-foot bungalow. Driscoll used TwistFlow radiant manifolds and manifold mixing stations to distribute heat evenly to seven radiant zones servicing the home, garage, patio and indirect water heater. As determined by most audience votes received during a Coffee with Caleffi webinar, Driscoll will receive an iPad mini and is a contender for the grand prize trip to Italy. After 12 months, the grand prize winner will be chosen from the 12 monthly winners by a panel of industry experts and Caleffi executives.

# Plumber

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## Ranger Design receives Work Truck Show Innovation Award



▲ Steve Milizia left, regional sales manager, and Jay Crowe center, product manager, Ranger Design, receive The Work Truck Show 2016 Innovation Award for its Max View safety partition from Steve Carey, executive director, NTEA.

Ranger Design received The Work Truck Show Innovation Award for its Max View safety partition. The partition's see-through feature enhances cargo space visibility, reduces blind spots, permits more light into the cab and creates the feeling of a more wide-open, less claustrophobic cab space.

## Quality Service Contractors elects officers, trustees



▲ Quality Service Contractors (QSC) board of trustees.

Quality Service Contractors (QSC) elected new officers and trustees at its March Power Meeting. QSC is an enhanced service group of the Plumbing-Heating-Cooling Contractors – National Association. Jeff Kuhn, S & K Pump and Plumbing, Brookfield, Wisconsin, was elected chair of the QSC board of trustees. Deidra McElroy-Och, Magnolia Plumbing-Heating-Cooling, Washington, D.C., will serve as vice chair. Newly elected trustees were Dan Callies, Oak Creek Plumbing, Oak Creek, Wisconsin; and Jeff Heger, Nixco Plumbing, Mason, Ohio. Both will serve three-year terms.

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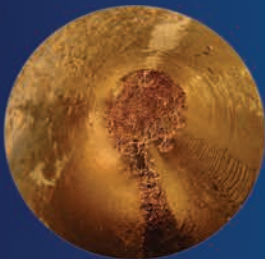
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