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A STRONG HERITAGE

SECOND-GENERATION PLUMBER TOMMY PHILLIPS
EMBRACED NEW SERVICES TO CREATE A
WELL-ROUNDED COMPANY / PG 34



BRANCHING OUT

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ON THE COVER // Tommy Phillips started his company, Heritage Plumbing, after growing up around the plumbing industry. He went from specializing in new residential plumbing to broadening into a full-service plumbing house after the recession in 2008-09. But despite the diversification and growth, he never wavers from his roots: "We are still your small-town plumbing company. That was my goal from the start — not to be the biggest company, but to be genuine." (Photography by Kaylinn Gilstrap)



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DIVERSIFY AND PROSPER

Offering a variety of services brings in more work and builds customer trust

SOMETIMES IT PAYS to specialize. We've featured plenty of contractors over the years who stick to one or two services. Becoming the go-to company for trenchless pipeline repair or pipe inspection can be a smart business decision. Honing those skills so you can take on even the most difficult jobs in your particular niche builds your reputation — and can be pretty lucrative.

But then we also feature contractors who seem to do it all, offering such a wide range of services you might wonder how they even manage it. Running a business with multiple service branches is a big commitment, from obtaining certifications and licenses, to training employees, to purchasing and maintaining all the necessary equipment.

The Diversification issue we put out every December aims to help you in that commitment. This month's contractor profiles feature companies that offer multiple services. Their reasons for adding services are different, but what they have in common is a strong commitment to providing the best for their customers.

Sometimes all it takes to fall into more work is buying one more piece of equipment. The founder of Allen Hughes Septic Tank Service purchased a jetter in 1997 and current owner Dale Wilson says the importance of having it "can't be overstated." He has a newer jetter now and won't ever go without one because of the options it provides his company — along with generating 30% of the work.

Of course, you can still have a specialty even if you offer a wide array of services. Wilson's is septic repair work. But the jetting and inspection work and septic pumping all feed that. The company's pump truck operator pays attention to what he sees out on the job and alerts homeowners to any issues. This builds customer trust and leads to more work.

Tommy Phillips, owner of Heritage Plumbing, started out primarily doing new-construction plumbing jobs but those dried up in 2008-09. The transition to full-service plumbing was easy because he already had the philosophy that as a plumber, you should know every aspect of the industry. His services now run the gamut from septic installation to water heater repair and backfill prevention testing, and he has the certifications to back up the work. Obtaining certifications is pricey and time-consuming, but absolutely worth it, Phillips says. Aside from the added knowledge, the certifications win the confidence of his customers.

The pandemic threw another wrench at businesses, and unexpected changes are another reason it's good to provide a diverse slate of services. "Situations like this are one reason we got into learning how to do a lot of different things," Phillips says.

If you're looking to expand your services, check out this month's Product Focus, featuring tools and equipment for both plumbing and septic work. You'll also find articles with tips for working with plastic piping systems and for preventing root intrusion in a customer's septic system.

Whatever services you offer, learning to do the job well is the most important thing, and *Cleaner* strives to be a resource to help you get there.

I hope you enjoy this month's issue. **c**

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JOB COSTS

Why Per Foot Pricing is a Bad Fit for Pipe Lining

For years, builders used a per square foot price for constructing a house when furnishings and trims were all pretty much the same. But as trim options started to come into play, the per square foot price model didn’t work so well anymore. It’s the same with pipe lining jobs. There are often too many variables at play for a per foot method to be a reliable pricing gauge. This online exclusive explains more. >> cleaner.com/featured



FUTURE WORKERS

Pfister’s Doc Series Aims to Inspire

In August, manufacturer Pfister launched a bi-weekly digital docuseries called “American Plumber Stories.” The series features short documentaries showcasing the lives of plumbers throughout the U.S., the goal being to promote the trade to the next generation of plumbing and drain cleaning professionals and hopefully help companies’ workforce development efforts. Read all about it in this online exclusive, then visit www.AmericanPlumberStories.com to check out the latest episodes.

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TOP TECH

Benefits of Machine Control Technology

Machine control offers huge productivity benefits, but smaller contractors are often hesitant to make the investment. Although it doesn’t come cheap, small contractors can still reap the rewards it offers. This online exclusive goes through some considerations to think about to determine if machine control is a good fit for your company. >> cleaner.com/featured



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BRANCHING OUT

SEPTIC PUMPING OPENS THE DOOR FOR WELL-ROUNDED CONTRACTOR'S REPAIR AND INSPECTION WORK // By Giles Lambertson

Photography by Amy E. Voigt



Allen Hughes Septic Tank Service owners Sherry and Dale Wilson at their shop in Harrod, Ohio.

When Dale Wilson isn't cleaning drains, he's pumping. Or repairing. Or inspecting drain and sewer lines to see what needs cleaning or repairing. Septic and sewer systems in western Ohio are keeping his company busy and growing three and a half years after Wilson and his wife bought it.

The company is Allen Hughes Septic Tank Service, which was founded in 1985 by its namesake. Located in Harrod, Ohio, the company started out servicing homeowners' septic tanks in surrounding Allen County and two neighboring counties — Auglaize and Hardin.

The counties largely have a rural population served by septic systems, rather than municipal sewer systems. Though West Central Ohio is dotted with small towns with municipal systems, the towns are scattered among wheat, corn and soybean farms. All the farm homes rely on septic tanks to treat wastewater. Serving these rural systems was the basis for the early success of Allen Hughes Septic Tank Service.

However, in 1997, the company diversified when then-owner Allen Hughes bought a jetter. "It was the only one in the area at the time," Wilson says, "and the company started doing some cleaning as well. The importance of us having a jetter can't be overstated. It gives us lots and lots of options."

Today, 30% of the company's work is generated by its Spartan Warrior jetter, which can produce 4,000 psi at 18 gpm. Powered by an 87 hp Kubota engine, the trailered rig has a 300-gallon water tank to flush clogged sewer lines. Four days out of five, the company's jetter is on the road to a job.



Owner Dale Wilson, with sons Tyler Wilson (left) and Travis Wilson, uses a 2017 Spartan Warrior jetter to clean a drainline running to a 1,500-gallon aeration system at a residence.



Customers are not solely residential property owners. Others include light commercial properties like restaurants and institutional clients such as hospitals.

“We’ll clean anything, beginning with a plain old backed-up service line running from the house to a tank or sewer main. We can jet it or auger it with our RIDGID cable. If tree roots are the problem, we can insert a RIDGID SeeSnake camera to evaluate the problem and see if it has to be dug up.”

The remaining 70% of the business is septic work. A big part of the company’s workweek involves pumping — pumping out septic tanks mostly but also the debris from flushed grease traps. A significant component of the company’s septic work is installing or repairing septic tanks and drainfield pipes.



Allen Hughes Septic Tank Service

HARROD, OHIO

OWNERS Dale and Sherry Wilson

YEARS IN BUSINESS 36

EMPLOYEES 5

SERVICES Septic tank and drainfield installation, repair and pumping, jetting commercial and residential sewer and drain lines, camera inspections

SERVICE AREA Allen, Auglaize, Hancock, Hardin, Logan and Putnam counties in western Ohio

In a busy year, the company might install 15 to 20 septic tanks — Roth high-density polyethylene tanks, for the most part, usually 1,500-gallon units; or concrete tanks if something larger is required.



“A LARGE PORTION OF OUR REPAIR BUSINESS COMES FROM THE PUMP TRUCK OPERATOR PAYING ATTENTION TO WHAT’S GOING ON WITH THE TANK AND BOX AND INFORMING HOMEOWNERS.”

DALE WILSON

But installing tanks is not the core business for the company either. “Repair work is our thing,” Wilson says. A lot of that work is facilitated by the company’s pump truck operator. “When he goes out to pump, he carefully looks at the tank, at its diversion box. Is it corroded? Is a concrete box starting to flake off? If so, he lets the customer know. A large portion of our repair business comes from the pump truck operator paying attention to what’s going on with the tank and box and informing homeowners.”

Septic tank pumping is an almost daily occurrence. “The pump truck is on the road five or six days of the week,” Wilson says. “I’m looking at the schedule right now. Tomorrow he’s pumping four tanks, then three the next day, then three, then four on Friday.” Installing septic systems, on the other hand, is seasonal work. By the first of December, winter cold usually brings such work to a halt till spring.

EQUIPMENT UPGRADES

Wilson is of the school of thought that prioritizes keeping current with equipment, rather than investing in machines and running them till they wear out. While both approaches are defensible, Wilson makes a good argument for operating with updated machinery.

“I do have a philosophy about equipment,” he says. “My wife and I have owned the business for less than four years, but I try to regularly update equipment, for several reasons. You don’t have as much downtime. The appearance of the machines creates a good image for the company. Employees are more comfortable operating newer equipment. So, one of my goals is to keep the equipment up to date. Business has been good for us, so we can do it without struggling.”

Consequently, that pump truck that’s almost constantly on the road is a 2020 Freightliner with a 4,000-gallon Imperial aluminum tank manufactured in Wisconsin. After Wilson decided his operation needed a truck with a hoist, he bought a 2021 Freightliner with a hoist and a 2,100-gallon stainless steel tank.

When an old jetter gave out a year ago, he bought the Spartan Warrior. “I came across Spartan several years ago. We go to the WWETT show every year and I had talked to some Spartan guys.

So, when the old machine went down, I called around and Spartan got back to me quickly, and brought me a machine. I really like the machine and the guys are very good to work with. I never looked any further.”

He has a John Deere 17G mini-excavator with a variable width undercarriage for getting through tight gates. Wilson is in the process of purchasing a Deere 60G compact excavator. He trailers an excavator to job sites to dig a hole

◀ Travis Wilson (left) helps feed jetter hose to Dale Wilson as he cleans a septic drainline at a residence.

✔ Dale Wilson uses a RIDGID SeekTech SR-20 to locate septic lines.



for a tank, then uses the excavator to unload a poly tank from a trailer and lower it into the hole. Other pieces of machinery in the equipment yard include Bobcat 763H and Gehl 3935 track loaders for moving or loading material and a Ford service van that usually pulls the trailer jetter.

CONTINUED >>

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« Tyler (left) and Travis Wilson install a PVC two-way clean-out for an onsite septic system.

“ONE OF MY GOALS IS TO KEEP THE EQUIPMENT UP TO DATE. BUSINESS HAS BEEN GOOD FOR US, SO WE CAN DO IT WITHOUT STRUGGLING.”

DALE WILSON

His trucks and trailers and trailered machinery roll out to work in six Ohio counties, having expanded from four in the last couple of years. The company’s service area ranges a hundred miles, north and south, from Toledo to Bellefontaine, and almost as far running east and west. Still, about 40% of the company work is in the home county, Allen.

A GOOD REPUTATION

A couple developments spurred business activity for Wilson in recent years. One was the state of Ohio’s revision of septic tank regulations in

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FAMILY BUSINESS IN THE MAKING

When a family-owned business is passed down to a succeeding generation, it usually has done something right. Allen Hughes Septic Tank Service in west-central Ohio appears to be on a second-generation path.

The company founder, Allen Hughes, died unexpectedly in 2014 at age 52. His brother-in-law, Dale Wilson, who had worked with Hughes for years, managed the company for Hughes' widow for several years. It was all in the family.

"I was never a partner with Allen," Wilson says, "but I had worked with him full-time since 2000. For 10 years prior to that, I was his weekend help and on-call guy. I never told him no." In 2018, Wilson and his wife Sherry bought the company from his widowed sister-in-law.

Now a second-generation of Wilsons has begun to stake a presence in the family firm. Dale Wilson has three sons and his oldest and youngest boys have decided to work with Dad. The elder son, Tyler, began with him five years ago. The sons like working outdoors and enjoy the day-to-day challenges involved in the business.

Wilson has experienced the same labor situation that's bedeviling many trades, especially in construction. So many young people are electing not to learn a trade, Wilson says, let alone choosing to work with sewers and septic tanks. Finding and keeping dependable, qualified help is a struggle for him as it is for other contractors.

So, for two of Wilson's children to decide they will follow him into



Travis (left) and Tyler Wilson use a RIDGID SeeSnake system to inspect a drainline through an outside clean-out.

the business is a pleasant development. "All of the guys who are in this kind of business around here, we all know each other. But some of them are retirement age and they have no one to take over their businesses."

Luckily Wilson will have the next generation ready to take over Allen Hughes Septic Tank Service when the time is right.

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➤ The Allen Hughes Septic Tank Service crew includes Travis Wilson, Tyler Wilson, Don Wilson and owner Dale Wilson. Dale plans for Travis and Tyler to take over the business one day.

“ONE THING I STRESS TO MY GUYS IS TO BE HONEST WITH EVERYONE, AS WELL AS WITH EACH OTHER. ... IF YOU CAN BE FAIR AND HONEST WITH PEOPLE, THE REST WILL TAKE CARE OF ITSELF.”

DALE WILSON

2015. Formerly, counties made up local rules as they wished. Now, Columbus is laying down the law and has begun to enforce it. County health departments have been given the responsibility to conduct inspections and determine if a tank and system is in compliance.

“Once they get a letter form the health department, property owners know it’s time to do something about their septic systems,” Wilson says. The upshot for Allen Hughes Septic Tank Service is more runs by his team to rural properties with noncompliant systems.

The other spurt of business for the company in the last couple of years came in the light commercial segment. Wilson attributes some of it to the company’s good reputation among mechanical contractors at such institutions as hospitals and colleges. “If something happens at one of those places that a mechanical contractor can’t handle, he often subcontracts the work to us. The contractor knows he can depend on us. It works out well for everyone.”

Wilson says treating his customers fairly and honestly is important to him. “I try to be honest in my pricing. One thing I stress to my guys is to be honest with everyone, as well as with each other. Ask questions on the job so we don’t do something wrong. If you can be fair and honest with people, the rest will take care of itself.” c

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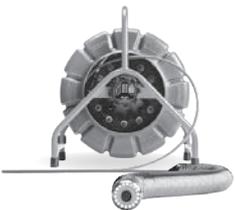


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Jonathan Simon

5 THINGS TO KNOW ABOUT HANDLING PLASTIC PIPE

From water compatibility to temperature and pressure, consider these factors to select a plastic piping system and ensure a successful install // By Jonathan Simon

PLASTIC PIPING SYSTEMS use many different materials, and those differences can impact the installation, performance and longevity of the system. Here are some do's and don'ts to keep top of mind when selecting and working with plastic piping systems.

DON'T: TAKE WATER COMPATIBILITY FOR GRANTED

The disinfectants used to treat water can be incompatible with some types of plastic piping. When working with PEX, plumbers should be aware certain conditions can increase the risk of degradation explained in the Plastics Pipe Institute's Technical Note (TN) 53.

PEX is vulnerable to chlorine degradation, so antioxidants are added during the manufacturing process to counter the effects of chlorine on the pipe. TN-53 discusses three conditions that can accelerate the degradation. Two of these — temperatures above 140 degrees F and pressures above 80 psig — are well known and understood, but the third, ORP above 825 mV, is not.

Oxidation reduction potential is, among other things, a measure of water's ability to break down contaminants. In residential water systems, water disinfection practices increase the ORP to ensure clean, safe drinking water.

When PEX standards were first published over 20 years ago, an ORP above 825 mV was assumed to be rare; but new studies suggest it is more common, particularly with modern water treatment methods such as chlorine dioxide. Plumbers using PEX should research local water conditions to determine whether there is risk that PEX pipes will be carrying water with an ORP above the threshold. Note that ORP can change over time and from point to point in the system — presenting a challenge to ensuring compatibility.

To make your decision easier and provide peace of mind when it comes to water compatibility, consider an alternative to PEX. CPVC is a chlorinated compound that is inherently immune to degradation from chlorine-based water treatment. With CPVC, there are no

water compatibility issues; you can install CPVC regardless of local water conditions.

DO: DOUBLE CHECK CHEMICAL COMPATIBILITY

Just like copper corrodes with dissimilar metals, both CPVC and PEX have chemical compatibility issues that should be considered during installation to prevent premature failure.

While CPVC is compatible with chlorine, there are other materials that can cause pipe damage. Because CPVC has been used in residential plumbing for more than 60 years, these issues have been well researched. Manufacturers, such as Lubrizol Advanced Materials, operate compatibility programs to help plumbers identify both compatible and incompatible building products. Contractors should reference their specific manufacturer's compatibility guide(s) prior to selecting ancillary materials.

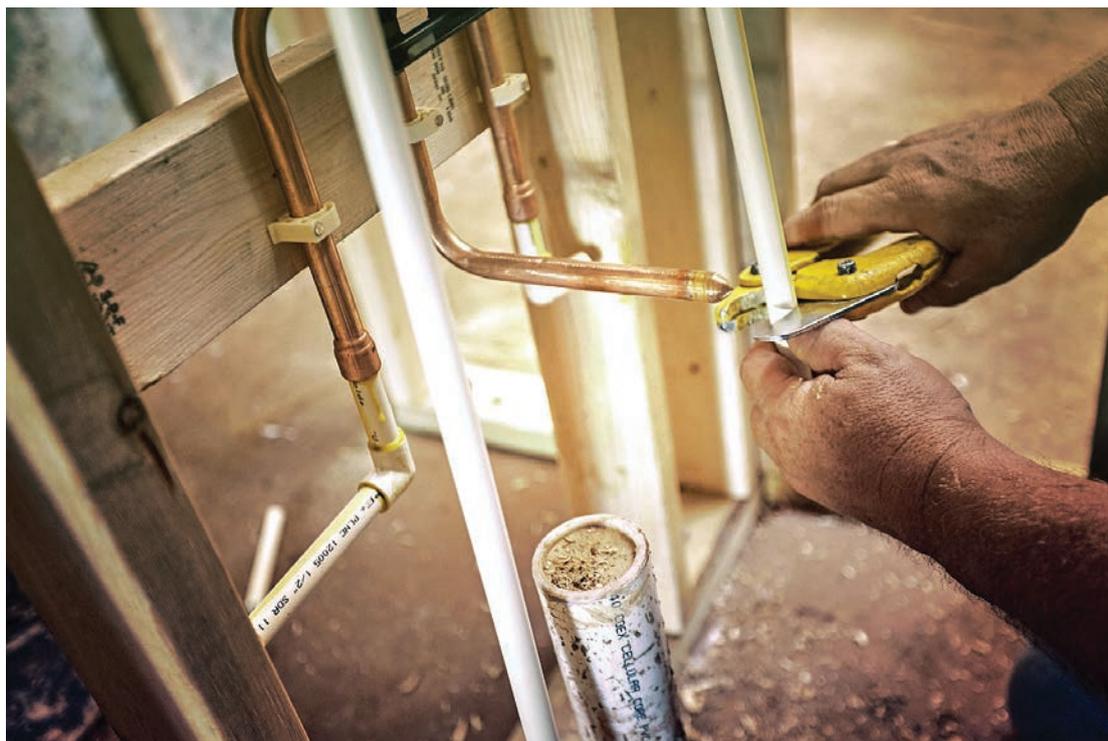
PEX pipe compatibility issues relate to the antioxidants used to protect the material from chlorine. When some materials touch the PEX pipe, the chlorine-inhibiting antioxidants can leach from the PEX pipe to the other material, leaving the pipe with fewer antioxidants to deal with the chlorine in the water. While there are no specific lists of incompatible building products for PEX, the manufacturers typically advise against using adhesive tape, organic chemicals, strong acids or bases, and other detrimental materials.

Plastic PEX fittings are made from other materials — typically polysulfone (PSU) or polyphenylsulfone (PPSU). Both of these materials are extremely incompatible with acetone, which is commonly found in PVC cements and primers. Special care should be taken to ensure drips of cement or primer do not contact plastic PEX fittings.

DO: CONSIDER VELOCITY AND PRESSURE EFFECTS ON PIPE SIZING

All PEX fittings are inserted into the pipe, reducing the internal diameter of the pipe at each fitting. This is true even with expansion fittings. This restriction can drain 2-3 psi of water

» A contractor cuts CPVC to the correct length during a home installation job. CPVC systems can be sized the same as copper and deliver similar flow rates and water pressure at fixtures. (Photo courtesy Lubrizol Advanced Materials)



pressure for each 1/2-inch, 90-degree elbow. This pressure loss gets more pronounced at small diameters and with higher water velocities.

Additionally, in PEX hot water recirculating systems, the maximum water velocity as prescribed by multiple manufacturers (and some codes) is 2 feet per second due to concerns over accelerated chlorine degradation. Because of these factors, a PEX system will likely need to be upsized in order to ensure adequate water pressure and volume, while staying within the maximum velocity limit.

CPVC uses solvent welded socket fittings that go around the outside of the pipe. As a result, CPVC systems can be sized the same as copper and deliver similar flow rates and water pressure at fixtures.

DON'T: EXCEED TEMPERATURE AND PRESSURE SPECIFICATIONS

Most plumbers are familiar with the concept of temperature and pressure ratings — the code requires that all products be rated for at least 100 psi at 180 degrees F and both PEX and CPVC meet that requirement for burst strength. However, at lower temperatures a difference does emerge.

The room temperature burst pressure rating of PEX is 160 psi, while that figure for CPVC is 2.5 times higher at 400 psi. CPVC systems de-rate faster than PEX as temperatures increase but remains at least double the pressure rating of PEX up to 120 degrees F and retains a pressure rating advantage all the way up to the code requirement.

Because CPVC is immune to chlorine degradation, only the burst temperature and pressure ratings apply to CPVC systems. However, for PEX systems the burst temperature and pressure rating are only half of the issue. When used in chlorinated water, the limits of 140 degrees F and 80 psi apply independently —

CPVC AND PEX USE DIFFERENT INSTALLATION PROCESSES AND TOOLS, BUT THERE ARE ALSO DIFFERENCES BETWEEN MANUFACTURERS OF THE SAME MATERIAL.

meaning that either temperature or pressure above the limit can each increase the risk of chlorine degradation in PEX pipes.

DO: FOLLOW MANUFACTURER INSTALLATION RECOMMENDATIONS

CPVC and PEX use different installation processes and tools, but there are also differences between manufacturers of the same material. Familiarize yourself with the specific instructions from the manufacturer and never assume processes and tools are the same among manufacturers of the same material. Some manufacturers also provide training resources that can be valuable refreshers, such as webinars and field support.

Having success with any plumbing material requires paying attention to material compatibility, sizing and recommended installation practices. Plastic materials are no exception. When these considerations are properly taken into account, plastic plumbing systems can deliver excellent performance and reliability.

c

ABOUT THE AUTHOR

Jonathan Simon is the North American residential plumbing manager for Lubrizol Advanced Materials, the parent company for FlowGuard Gold Pipe and Fittings. For 60 years, FlowGuard Gold Pipe and Fittings has provided reliable hot and cold water plumbing systems to residential and commercial buildings. For more information, visit www.flowguardgold.com.



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Joan Koehne

PREPARE FOR THE UNEXPECTED

You can't predict the future, but creating an emergency plan will help you face it if disaster strikes // By Joan Koehne

BECKY PELTZER JUST GOT HOME from work when she received an emergency phone call. She needed to get back to the office right away. Waste Solutions of Iowa was on fire. The company, based in Des Moines, Iowa, provides portable restrooms, commercial grease and interceptor cleaning, and residential and commercial roll-off container services in central Iowa.

Becky and Tim Peltzer, owners of WSI, never expected a catastrophe like this. The singlewide job trailer that served as their office was destroyed in a fire in April 2021. The Peltzers also lost three heated and air-conditioned restroom trailers and two flushable toilets. Thankfully, the fire didn't extend to the shop and the yard; other restrooms, trucks, trailers and equipment were spared.

A fire or other type of catastrophic event throws business operations into chaos. Stress goes through the roof as the company deals with the aftermath. Preparing for catastrophes before they occur makes disaster recovery easier.

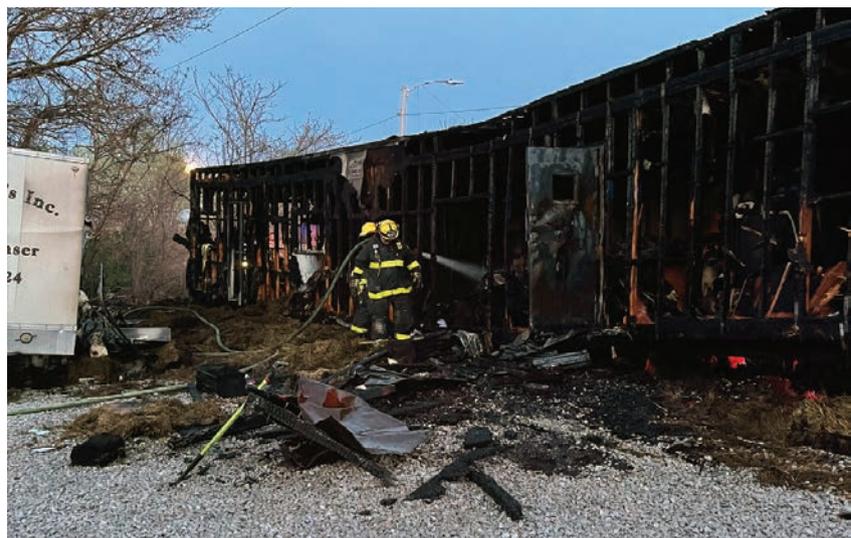
WSI took a number of proactive steps so that the company could pick up and move on quickly after the fire. Most important, WSI had critical operating systems in place, limiting the impact of business disruptions. For example, the company used cloud-based bookkeeping software and a cloud-based dispatching and routing system with a customer-database component.

"The next day, we bought new laptops and the office was running as if nothing happened," Tim says.

They forwarded their business lines to their cellphones, and customers saw no disruptions. All of the employees came to work as usual, while office personnel worked from the Peltzers' home until moving into a rented office space about a week after the fire.

The fire started when a person at a neighboring property cut down a tree, causing a power line to fall on the trailer. After Becky arrived at the fire scene, she began taking photos.

"Do not rely on others," she advises. She documented as much as she could with her camera on the night of the fire. Her foresight was a godsend. "By the next morning, everything was cleaned up," she says.



Becky and Tim Peltzer, owners of Waste Solutions of Iowa, lost their office in a fire in April 2021. The Peltzers say that proactively preparing for a catastrophe helps companies who experience a disaster get through it with less stress and face less disruption to day-to-day business.

DOCUMENT EVERYTHING

The Peltzers also recorded the names and phone numbers of the fire chief and investigators. Additionally, Tim talked with neighbors and eyewitnesses, collected their contact information and wrote down their comments. Becky and Tim provided all of this information to the insurance company.

In addition to the photos from the fire, WSI was lucky to have photos from the inside of the office before the fire. They had recently rearranged the desks and took photos of the new workspaces. They shared these photos with the insurance company and referred to them often.

"We take for granted the power of the cellphone in our hands," Tim says. "Take photos of your office once a month."

"We're not thinking about what's in the closet, the drawers, the layout of the office and what's on our desks," Becky says.

In addition to taking office photos, they advise taking photos or videos of trucks, equipment and inventory. The company owns about 2,000 restrooms, five service trucks and two pickup and delivery trucks.

“Keep an asset list,” Becky says. WSI keeps essential papers, like truck titles, in a fireproof safe.

“Document. Document. Document,” Tim says.

Whenever he speaks with investigators and insurance representatives, Tim takes notes to refer to later. His notes include the date, people he talked with, the subject of the conversation, and any follow-up that is planned. He also records phone conversations pertaining to the fire. Everything is stored in Microsoft OneNote, so he has one place to find photos, emails and recorded conversations.

“It helps because you’re constantly getting passed from investigator to investigator and insurance agent to insurance agent. I don’t have to recreate what they need every time,” he says.

“You are your own advocate,” Becky says. Even though their insurance agent had visited their office and used their services, he wasn’t aware of all of their products and their uses. Following the fire, the Peltzers spent several days with their agent correcting deficiencies in their policy.

“WE TAKE FOR GRANTED THE POWER OF THE CELLPHONE IN OUR HANDS. TAKE PHOTOS OF YOUR OFFICE ONCE A MONTH.”

TIM PELTZER

From the moment of the disaster, WSI used a dedicated credit card for purchases and saved all receipts. An ongoing frustration for the Peltzers is a shortage of equipment they desperately want to replace. Plus, the replacement cost is up to double what they originally paid. Months after the fire, WSI was still trying to replace its restroom trailers. Becky and Tim kept records of the replacement costs, plus the income lost from not having these restrooms available.

Along with the business challenges after a

disaster, there is an emotional toll as well. Losing their office was devastating, and dealing with the aftermath was stressful. Instead of feeling sorry for themselves, the Peltzers forged ahead.

“You basically just pick up and move on,” Becky says. “We just made the best of it.”

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"If you're going to fall, fall forward and do the next right thing," Tim says.

Becky and Tim kept their attitude positive, knowing that their employees looked to them for leadership and direction after the fire. They remained calm when interacting with their staff, knowing that hysteria wouldn't help anyone deal with the loss.

Finalizing an insurance settlement is a lengthy process, expected to last 12-18 months for WSI, requiring a lot of back and forth with the insurance company and mounds of patience. Becky recommends not bearing every burden yourself.

"Let people know when you need help. They want to help and support you."

CRAFT A PLAN

A solid emergency preparation plan can help companies pick up the pieces and recover quickly like the Peltzers did.

A major element of an emergency preparation plan is to identify risks, like floods, hurricanes or tornadoes, that may be likely to occur in your area. Companies often have advance warning of pending weather emergencies but WSI of course had no indication that a fire would occur.

You can still prepare by correcting fire and safety hazards. Regularly check your fire prevention and safety systems to be sure they're operating correctly.

Create an evacuation plan to show exits, evacuation routes and meeting places to gather to make sure everyone evacuated safely. Sometimes it's safer to shelter in place, and staff members should be ready to go to their assigned shelter at a moment's notice. An emergency kit comes in handy. Equip the kit with bottled water, snacks, a flashlight and batteries, first-aid supplies and a battery-powered radio.

WSI used cloud-based storage, which provided easy access to records and business operations the day after the fire. Businesses not using the cloud should create a backup of critical data and programs, then store the backup files in an offsite location. Vital business documents should be stored in a fire-proof safe.

By proactively preparing for a catastrophe, companies who experience disasters face less disruption to day-to-day business. To prepare, write an emergency preparedness plan and asset list, protect critical documents, and take photographs of the office, shop and yard. Document the aftermath of a disaster with photos and notes, and keep good records of the investigation and purchases made after the event. A successful recovery from a disaster takes time and patience. A positive mindset helps to lighten the mood, so you can calmly navigate the setbacks and challenges.

"Stay grateful and positive," Becky says. "Know it's going to be OK." **c**



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KEEPING IT WATERTIGHT

These tips will help prevent root intrusion from knocking out a customer's septic system

// By Jim Anderson

SEP TIC SERVICE PROFESSIONALS often recount stories of some of the problems they encounter while inspecting or troubleshooting systems. Lately I have had several people contact me with stories of opening part of a system to find that roots have filled or nearly filled the supply or drainfield piping. Obviously if the piping is filled with roots, sewage will not flow between parts of the system as it should. Over time this results in sewage backups or surfacing.

System piping, sewage tanks, distribution and drop boxes should all be watertight. That means water is not allowed to flow into the system from outside or flow out into the soil from system components except in the soil treatment area. If water is infiltrating the system through a non-watertight component, the excess water can hydraulically overload the system and cause failure. It can also be a source of sewage leaving the system before the soil treatment area, presenting a health or environmental hazard.

The presence of roots in any part of the system indicates a problem due to some defect or poor installation or maintenance activity. The first location to evaluate root penetration is the supply line from the house to the septic tank. If roots have entered the supply line it will lead to blockages and backups into the house.

ROOT OF THE PROBLEM

Roots can be present in the supply line if the piping was not properly bedded and it was cracked or broken during installation. Other potential causes are poor connections, which could include improper gluing of the piping or the use of inappropriate connections such as couplings not designed to be watertight.

This is something a neighbor of mine experienced last summer. She had some work done on her system a year ago and apparently the contractor had problems matching up the piping and used a flexible coupling. Roots from nearby conifers entered the pipe, creating a blockage. Since it takes the roots some time to enter and block the pipe, it would finally occur during the most inopportune time over the July Fourth weekend when it was difficult to get a

hold of her service provider and there was a house full of company with nowhere to go.

Roots can enter the system through the septic or other sewage tanks. Again if they are in the tank they can eventually block either the inlet or outlet, creating backups to the house or potential for sewage at the surface. Any penetrations or joints in the tanks should be checked for watertightness and root penetrations.

As we all know, roots can get through what seems to be the smallest crack or opening and then once inside the tank expand and grow very large. You've probably seen photos of a tiny, flattened root going through a small opening between the lid and tank wall and then once inside the tank, forming a huge root ball.

During tank installation, self-sealing gaskets should be applied where the tank lid meets the walls, or better yet, use a tank constructed with a tongue-and-groove connection along with the gasket. These days many tanks come with cast-in-place gaskets at the inlet, outlet and where the manhole riser will attach to the tank.

If these gaskets and connections are not already cast in the tank, it is important that seals and gaskets be fitted to these openings during installation. Simply resting smooth wall plastic pipe on the concrete opening and then applying mortar into and around the opening will not create a watertight connection or keep roots out.

DISTRIBUTION ISSUES

Risers added to bring the manhole to the surface for tank maintenance also need to be watertight. Plastic and concrete sealants are available to make connections between riser sections and must be used.

Another place where roots are likely to enter the system is through distribution or drop boxes. Once in these boxes, roots can grow into the piping and create blockages at the inlet, outlet and even in the system distribution piping. Distribution boxes, whether plastic or concrete, usually have flexible gaskets built in



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during the manufacturing process. If they are not precast, gaskets need to be installed. Lids on the boxes should have a self-sealing gasket where the lid meets the walls.

The supply pipe from the house, piping between the tank and distribution boxes, or from the boxes to sewage treatment trenches are areas where roots can penetrate if the piping is broken during backfilling, connections are not done correctly, or soil has settled in, around or under the pipe leading to connections breaking. An indicator of settling at the surface would be dips or low areas around the supply line. There is often wetness in this area as well because sewage is leaking out of the piping.

Distribution pipe in the soil treatment area can also have root problems if the piping was damaged during backfill. The other major cause of roots in the soil treatment area is planting vegetation on or near the system that will aggressively grow into the system. This vegetation could be a variety of types depending on where you live. Where I reside, white pines, willows, basswoods and cottonwoods would be problems. In southern areas palm trees and similar vegetation can be problems. **c**



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ABOUT THE AUTHOR

Jim Anderson, Ph.D., is an emeritus professor at the University of Minnesota Department of Soil Water and Climate. He works with the National Association of Wastewater Technicians and is a recipient of the pumping industry's Ralph Macchio Lifetime Achievement Award.

A STRONG HERITAGE

SECOND-GENERATION PLUMBER TOMMY PHILLIPS EMBRACED
NEW SERVICES TO CREATE A WELL-ROUNDED COMPANY

// By Giles Lambertson



» The team at Heritage Plumbing includes (from left) head plumbing tech and journeyman plumber Victor Lavallee, owner Tommy Phillips, apprentice plumber Mitchell Phillips and assistant Leland Martin.

TOMMY PHILLIPS GOT INTO PLUMBING BECAUSE HE GREW UP AROUND IT AND ENJOYED THE TRADE.

He got into septic tanks and cleaning drains and “whatever else you could think of in the service department” after the economy collapsed in 2008-09 and new residential plumbing jobs dried up. The transition to becoming a full-service plumbing house was easy for him.

“I believe when you are a plumber, you should know every aspect of the industry,” he says, looking back. “So, we just started adding to our plate any specialties that other companies in the area weren’t doing.”

Today Heritage Plumbing, located in Ball Ground, Georgia, tackles a host of residential and commercial plumbing jobs, as well as septic tank installation and maintenance, drain and sewer installation, repair and cleaning, the whole gamut of water heater work and everything in between, plus natural gas line installation and backfill prevention testing.

What Heritage won’t do, Phillips says, is to pretend to be something it isn’t. “We are still your small-town plumbing company. That was my goal from the start — not to be the biggest company, but to be genuine.”

FAMILY TRADITION

Phillips got into handling pipe and working with his hands at a young age. One of the people he looked up to as a child was his grandfather, M.D. Garrett. Phillips remembers his grandfather always making something in his garage in the Georgia community of Woodstock.

Garrett was a former Lockheed Corp. employee and was comfortable working with electrical elements, HVAC units, plumbing materials and machining tools. If it could be done, Garrett could do it and his community trusted him doing it. Some of the imagery in Heritage Plumbing advertising is a tribute to Garrett.

If his grandfather wasn’t enough influence on the young man, four uncles on his mother’s side of the family each owned a plumbing shop. Today, six or seven nephews are working in the trade in one part of Georgia or another. “Plumbing is pretty much in the family,” he says.

“I BELIEVE WHEN YOU ARE A PLUMBER, YOU SHOULD KNOW EVERY ASPECT OF THE INDUSTRY. SO, WE JUST STARTED ADDING TO OUR PLATE ANY SPECIALTIES THAT OTHER COMPANIES IN THE AREA WEREN’T DOING.”

TOMMY PHILLIPS

Of most impact on Phillips was his father, who was a plumber. He worked for a plumbing firm and Phillips eventually was hired by the company to work alongside his father. In 1998, at the age of 23, Phillips decided to open his own business, Phillips Plumbing. His father continued in his own career but helped his son get started, as well.

In 2006, Phillips incorporated his company and changed the name to Heritage Plumbing.

Today, Phillips has five employees, but in the beginning, it was Phillips alone, supplemented by his father’s assistance. His



Heritage Plumbing

BALL GROUND, GEORGIA

OWNER Tommy Phillips

YEARS IN BUSINESS 23

EMPLOYEES 5

SERVICES Residential plumbing and pipe repair/replacement, water heater installation and repair, drain and sewer line cleaning, septic tank installation and cleaning, water filtration system design, installation and repair, commercial plumbing services, natural gas line installation, backflow prevention testing.

SERVICE AREA Five counties in Northwest Georgia

WEBSITE heritageplumbinginc.com

STAY TRUE TO CORE VALUES

Heritage Plumbing was built on the notion that people matter — all of them. That foundational idea has borne fruit for the Ball Ground, Georgia, company. Over more than a quarter century of doing business in the area, the plumbing shop has earned the loyalty and trust of its customers.

From its downtown Ball Ground office, Heritage Plumbing team members venture out 40 miles across five counties to install, repair and replace plumbing and sewer systems. “We have developed a relationship with these customers over the years. I have some customers who moved down to Atlanta. If they call, I’ll send someone there, too.”

Phillips says he strives to treat customers as “family,” which is not an uncommon mantra of savvy businessmen. In this case it goes a little deeper. “The foremost thing is our company is God-based. That’s very important. So, we try to treat everyone the same regardless of who they are or their status in life. We try to build the kind of relationship where they can trust us.”

This translates into entering every residence with the same concern for creating as little mess as possible during a repair job and always exhibiting complete professionalism. Such attention to respecting customers is part of Heritage Plumbing’s brand, Phillips says.

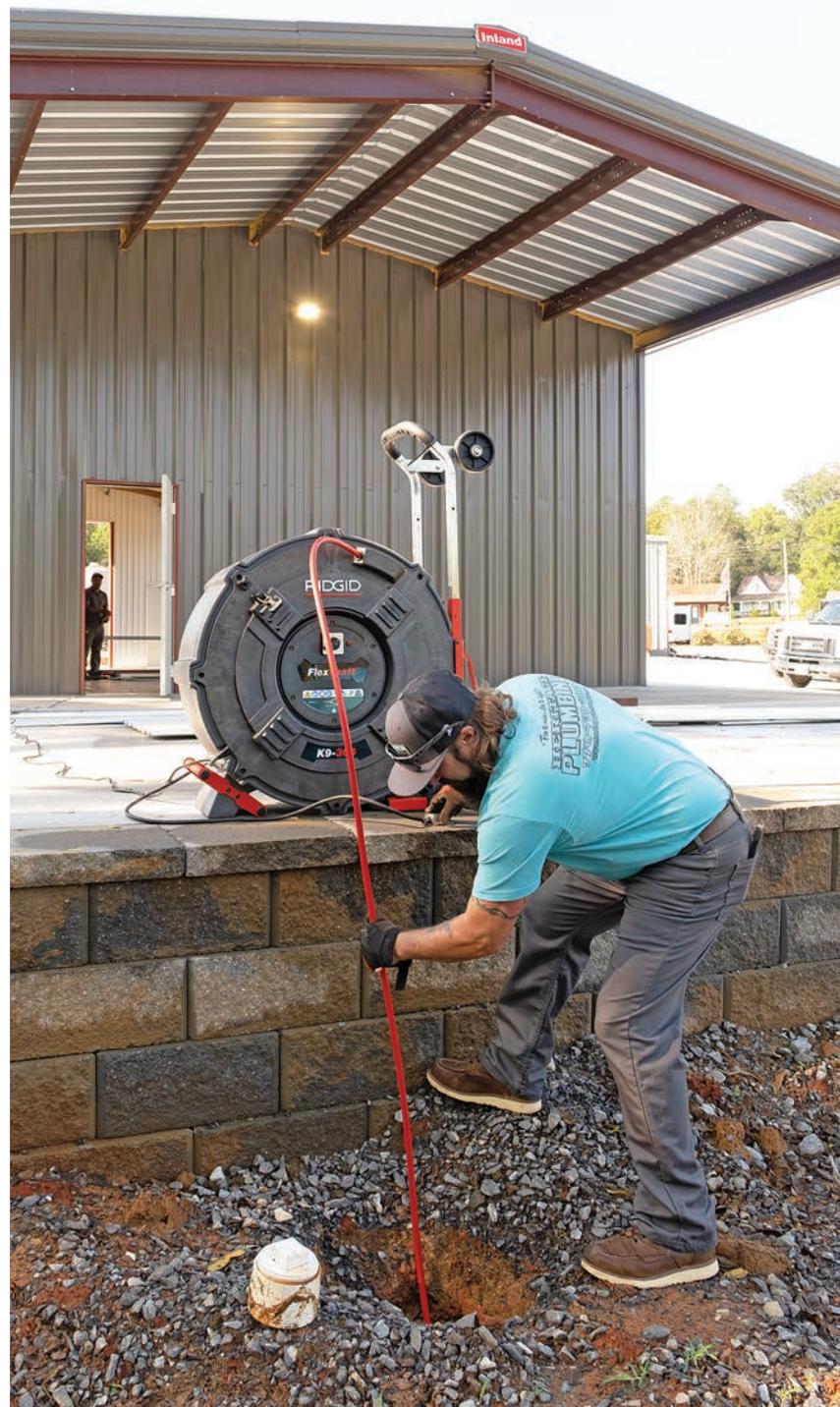
“I feel like companies that succeed are the ones that stay true to their core values and create a brand that both employees and customers are proud to be associated with. That’s what I’ve tried to do. Everybody deserves professional, reliable plumbing and plumbing service that makes them feel valued. When they are treated that way, customers will stay loyal to you for life. This helps my overall profitability at the same time it builds a solid foundation for the business and creates long-lasting relationships.”

wife, Lindsey, is the office manager. He playfully acknowledges his dependence on his partner in the office. “I’d be in trouble if I let her go. You know how hard it is to find help these days.”

The brand-new company strictly took on new construction plumbing work — plumbing concrete slabs, roughing out and finishing. When the housing crisis and resulting recession struck, Phillips adapted by getting a septic tank license to keep busy. Expansion of services at Heritage Plumbing began in earnest.

In 2021, 70% of the company’s business is residential plumbing services and new construction or remodeling work. The remainder is commercial jobs of one kind or another, including installing commercial sinks and servicing grease traps. “We do a lot of hair salons, doing one across the street this week,” he says. “We’ll saw out the concrete flooring and add hair-washing stations.”

Burned once by too much reliance on the new-construction segment, Phillips says he is “selective on whose construction projects we’ll work. We kept our relationship with the best builders



and let the rest go.” While he says he might slightly prefer working the residential market, “plumbing is plumbing, if you know how to do it.”

WELL EQUIPPED

Georgia is verdant but beneath some of that green is rock, including limestone and other sedimentary deposits. Ball Ground lies in northwest Georgia and, as Phillips says, the farther north in the state you go, the rockier the soil. “We put in a septic tank the other day, and, under the top layer, it was nothing but rock.”

So, spading a trench for a water or sewer line is not an option in some cases. As needed, Heritage Plumbing relies on a Kubota KX040 compact excavator. The 40 hp machine can cleave the earth

with minimal stress, opening a trench for pipe laying or digging a hole up to 7 feet deep for a septic tank.

Other tools in the Heritage equipment yard include a RIDGID KJ-3100 jetter. "It's not a large one, but it works for us," Phillips says of the machine. The 3100 is a hand-cart model that can produce up to 5.5 gpm at 3,000 psi and works in lines ranging from 2 inches to 10 inches. It's used exclusively in outside applications.

"It depends on what's in the line, of course, but generally I don't start out with the jetter. It's a bulky piece of equipment." Instead, Phillips or another team member first tries to clear an obstacle using a 700-watt K60

« Tommy Phillips uses a RIDGID Flexshaft 306 drain machine to clean debris from a broken 4-inch PVC clean-out that was damaged by the graders on a new construction job.

✔ A RIDGID Flexshaft 306 chain knocker with a carbide penetrating head was used to clear the clean-out.



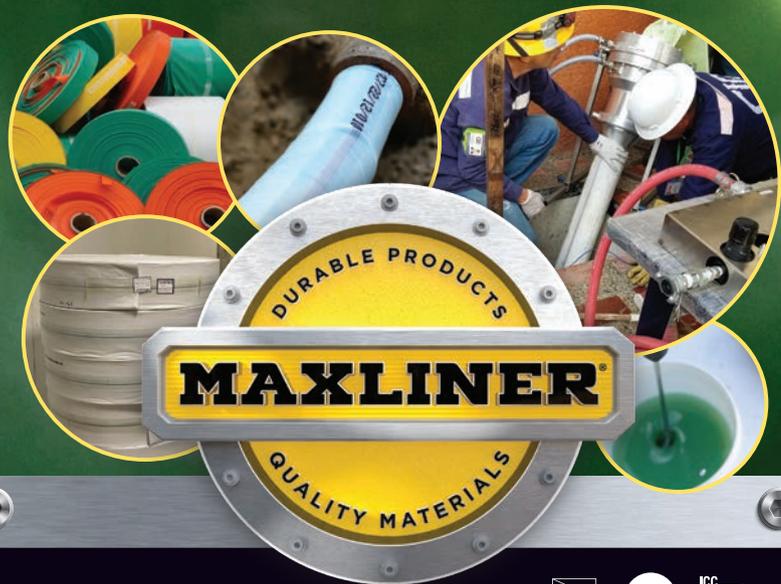
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TOMMY PHILLIPS

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◀ Phillips uses a RIDGID Flexshaft K9-20 to remove debris and concrete from a sewer drainline.

Heritage does not as yet do any trenchless repair work on lines, unless you count its waterline ripper. That process involves inserting a 100-foot-long Spartan waterline splitter cable into a faulty line. Then one of three splitter heads is attached to the end of it and the cable is pulled back through the line using a Ditch Witch machine. A new PVC, copper or poly line is dragged into place behind the splitter. The process works on lines up to 1 inch in diameter.

Phillips says Heritage Plumbing is known for repairing lines of all types without resorting to threading or torching the pipe to join segments. Instead, the company relies on Uponor ProPex fittings on expandable pipe. “We crimp a ring on it and insert an expansion tool in the pipe and have a secure connection. It costs more but we have used it for years. Good quality materials in return bring good results.”

The company frequently is called on to add gas lines to pool areas or commercial kitchens and, again, relies on a non-threading system to join pipes. In this case, Phillips turns to a Viega ProPress system for copper and stainless steel pipes and MegaPress for carbon steel pipe. “We are sort of known for our capability to press water and gas lines.”

Another specialty is installing water filter systems. The region has fairly hard water, according to Phillips, with people drawing it from wells. Heritage technicians take a sample of water at a residence and send it to the University of Georgia for a full report on the water’s composition.

“We know what the safe ranges are for components of the water so we can design and build a filter system for a particular customer,” Phillips says. Each system has a tank containing the filtering media that remove iron particles and such. A valve at the top of the tank periodically emits backwashed water, sending it out into a septic tank or elsewhere. “We build and put in a filter system like that once or twice a month.”

CREDENTIALS WORTH THE COST

Heritage Plumbing sets itself apart from equally professional competitors by earning credentials. Phillips holds a master plumber license, as does another member of his crew. One apprentice has his journeyman license and a second will take that test in two months.

CONTINUED >>

“WE ARE STILL YOUR SMALL-TOWN PLUMBING COMPANY. THAT WAS MY GOAL FROM THE START — NOT TO BE THE BIGGEST COMPANY, BUT TO BE GENUINE.”

TOMMY PHILLIPS

cable drain cleaning machine or a FlexShaft chain knocker machine. Both are RIDGID tools, as is the inspection camera for scoping out the work. When the pieces of clearing equipment can’t free up a line, the jetter is brought out, perhaps three or four times a month.

“Most of our equipment is RIDGID because of the relationship we’ve built over the years. They are very responsive, always helping us out when something goes wrong. They are pretty on top of having parts on hand. I prefer RIDGID as much for relationship reasons as anything,” Phillips says.

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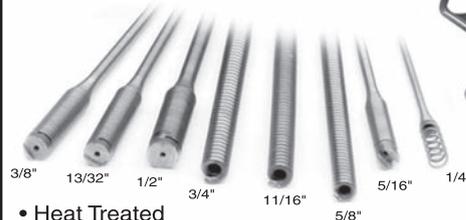
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Furthermore, Phillips is certified to work on septic tanks and with medical gas lines, and certified to test backflow prevention units and install Gastite flexible gas pipes. He's OSHA-certified, Department of Health and Environmental Control-certified and certified to work in confined spaces.

"All of the certification gets pretty time-consuming, especially at the end of a certified period. I spent lots of time in front of a computer," he acknowledges. "It gets pretty costly, too."

But it's worth the cost. Besides the skills honed and knowledge earned to acquire certification, it's another way of winning the confidence of his customers. For the same reason, Heritage Plumbing crew members do not count on commissions as part of their salaries.

"Most plumbing companies do have commissions, especially on service calls. Their guys have to go out there and sell everything on their truck to make money. So, this is part of building relationships with customers. Not having the guys on commission gives our customers a little sense that we are not coming out to gouge them."

For going-the-extra-mile customer service, Heritage Plumbing also arranges for cleanup when its plumbers have to tear into walls to replace old or leaking pipe. "Repipes, we call the jobs," Phillips says. After the piping is fixed, the walls need fixing. Phillips has a guy on call who hangs new sheet rock or repairs the old, including finishing the mudded joints. "All the homeowner has to get is a painter."

The pandemic disrupted things for Heritage Plumbing like it did for many other businesses, the most critical problem being interruption in the supply of parts and products. Phillips says the dislocation was felt "across the board. Pipe fittings and PVC — we switch back and forth depending upon on what we can get. We couldn't get some products for water heaters. A month ago, I couldn't get the resin I need for the chambers in septic tanks."

Aggravation aside, the company is pressing on. "We're hanging in there, but it's been rough. It's good to be able to do different kinds of jobs. Situations like this are one reason we got into learning how to do a lot of different things." c



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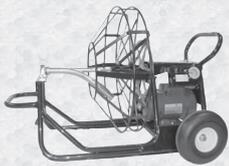


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LIGHTEN THE LOAD

Drum machine's stair-climbing feature gives drain cleaners a lift // By Ken Wysocky

AFTER WRESTLING 250-POUND drain machines in and out of service vehicles and up and down customers' basement stairs, drain cleaner Billy Oudshoorn says his back and knees are shot — and he's only 30 years old.

"Those older big machines will throw you around a bit," he says.

But now he's getting a reprieve of sorts, courtesy of the new Milwaukee Tool MX Fuel drum machine with POWERTREDZ stair climbing, lift assist technology.

"If I would've had a machine like this 20 years ago, I'd still have a healthy back and knees," says Oudshoorn, lead field supervisor at Drains R Us of Southeastern Wisconsin. Oudshoorn's father, David, established the Racine-based company in 1995.

"It's a total game-changer for me," he adds. "It'll also change the game for younger guys coming into the industry because they won't have to worry about all that wear and tear on their bodies."

In addition, the machine has literally doubled productivity because Oudshoorn no longer needs two people on his drain cleaning jobs. That frees up an employee to do other revenue-generating activities and reduces labor costs, which helps makes the company more competitive.

"It's nearly impossible for one guy to deal with a 250-pound drain machine," he says. "Now I'm in or out of the truck or up and down stairs with the push of a button."

"You double your productivity with a one-man truck. We're so busy these days that we sometimes have to turn away work. So being able to one-man a truck is huge."

NO MORE HEAVY LIFTING

The lift-assist function is easy to engage. Just flip a switch on the top of the machine from cleaning mode to climbing mode, then set another switch on either ascend or descend mode. The operator then uses a small trigger by the handle to engage the unit's two rubber treads, which feature cleats that grip the lip of



▲ Drains R Us of Southeastern Wisconsin technician Kenny Szczesny guides the Milwaukee Tool MX Fuel drum machine with POWERTREDZ stair-climbing lift-assist technology into a customer's home. (Photo by Ken Wysocky)

stair treads, as well as control how fast the treads rotate.

"You really only have to guide it, not pull it," Oudshoorn explains. "And you have to find the right angle."

The lift-assist feature works great on trucks, too. Drains R Us runs three service trucks — two Ford E-350s cargo vans and a GMC Savana 3500 cutaway van equipped with a CVS body made

DRAINS R US OF SOUTHEASTERN WISCONSIN

KENOSHA, WISCONSIN

OWNER David Oudshoorn

MACHINE Milwaukee Tool MX Fuel drum machine with POWERTREDZ

FUNCTION Cleaning sewer lines

FEATURES Cleans pipes from 3 to 8 inches in diameter; fully enclosed drum; reel holds 100 feet of 5/8- or 3/4-inch-diameter cable; a lithium-ion battery; automatic cable feed and retraction; 200 rpm cable spin-speed; brushless motor; quick-release drive disengagement; weighs 125 pounds; measures roughly 32 inches long by 22 inches wide by 47 inches tall.

COST Approximately \$3,500

WEBSITE www.drainsruswi.com

by Reading Truck Group. The beds on the E-350s are higher than on Savanna's, but the lift-assist still works well, he says.

The machine features include a fully enclosed drum that can carry 100 feet of 5/8- or 3/4-inch-diameter cable; a 3Ah lithium-ion battery; fatigue-reducing automatic cable feed and retraction; 200 rpm cable spin-speed; a brushless motor; and a quick-release button that disengages the motor almost immediately.

The machine is designed to clean pipes from 3 to 8 inches in diameter. It weighs 125 pounds and measures roughly 32 inches long by 22 inches wide by 47 inches tall.

Oudshoorn says one of his favorite features is the almost instant cable-drive release function. "When you're rodding a line and you hit something hard, or maybe the cable gets bound up while going from a 6-inch-diameter pipe to a 4-inch pipe, you want it to disengage right away or you're in trouble. And this one steps within seconds."

An outer casing that fully encloses the cable drum enhances customer service by eliminating potential drips and spray. "Cleanliness is huge with customers," he says. "No want wants sewer juice spit all over their basement walls and ceiling or dripping onto carpets or floors."

He also applauds the unit's direct-drive technology, which eliminates the need for belts that can either break or slip if they get wet.

PLENTY OF POWER

Battery power also offers another convenience. There's no potential for electrical cords falling in water or posing trip hazards, and Oudshoorn says he also no longer contends with hard-to-find electrical outlets or outlets that aren't compatible with three-prong grounded cords.

The battery recharges in about 45 minutes and Oudshoorn says he can do six drain jobs on a fully charged battery. "I rarely do more than six jobs a day, so running out of juice isn't an issue."

If anyone thinks battery-powered drain machines aren't powerful enough, guess again, he says.

"I recently cleaned an 8-inch sewer line at a big-box, home-center retailer that was clogged with wipes and all kinds of other foreign objects. Commercial clogs usually are the worst kind, especially in a line that big — and this clog was huge.

"At first, I thought about going back to our shop to get our water jetter. But I decided to give the MX Fuel machine a shot. And I cleared that clog after about an hour of rodding.

"That's when I knew it was the real deal."

"IN THE END, WE'RE SALESMEN, TOO, AND THIS MACHINE HELPS US SELL JOBS."

BILLY OUDSHOORN

IMAGE IS EVERYTHING

The technically advanced machine also provides a less tangible but equally important benefit: It impresses customers when they see it climb stairs and clear clogs, which boosts the company's image as a professional and progressive outfit, Oudshoorn says.

"I've actually had customers say, 'This thing is awesome — what a crazy piece of machinery,'" he says. "They're used to seeing those old bulky machines and then I bring in this one.

"In the end, we're salesmen, too, and this machine helps us sell jobs."

In short, Oudshoorn definitely would recommend the machine to other drain cleaners.

"In a heartbeat. With the way they designed this, Milwaukee Tool really hit a lot of things right on the head. I'd put it up against any drain machine out there." **c**

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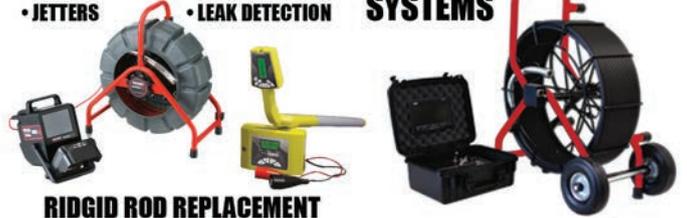
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BUSINESS DIVERSIFICATION – SEPTIC PUMPING, PLUMBING

By Craig Mandli

» CABLE DRAIN CLEANING MACHINES

1 // ELECTRIC EEL MODEL C

The Model C dual-cable sectional drain cleaner from Electric Eel runs up to 200 feet of 1 1/4-inch, self-feeding dual cable in 8- or 10-foot sections that require no handling when rotating. It spins cable at twice the revolutions per minute of a continuous cable machine for cleaning 3- to 10-inch lines for distances up to 200 feet. One-man operation means less time and labor expense. A heavy-duty, 1/2 hp motor comes standard, and 3/4 and 1 hp motors are also available. A custom-designed gearbox ensures higher quality, lower cost and parts availability. The heavy duty, fully adjustable safety clutch keeps cable and tool breakage to a minimum and provides overload protection. A fold-down handle allows for easy transportation, storage and use in crawl spaces. Its carry handle allows for balance and easy transport. 800-833-1212; www.electriceel.com



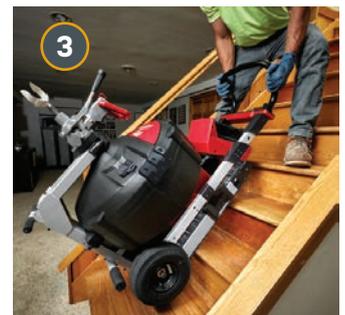
2 // GENERAL PIPE CLEANERS PD-25 AUTO HANDY

General Pipe Cleaners' PD-25 Auto Handy with automatic feed offers feeding speed and convenience in a hand-held drain cleaner. It can be used as a hand tool or as a power tool by removing the turning handle and attaching a drill for extra muscle on tough clogs. Squeezing the feed lever as the container rotates feeds the cable; to retract cable, reverse drill rotation and squeeze the lever. It can clear clogs from 1 1/4- to 3-inch-diameter lines up to 50 feet long. Designed to withstand tough jobs in the field, its sturdy polyurethane drum has been drop tested from 8 feet, fully loaded, without damage. It uses Flexicore cables made of heavy-gauge wire coiled tightly around an aircraft-type wire rope core, then heat treated, offering strength with optimal flexibility. 800-245-6200; www.drainbrain.com



3 // MILWAUKEE TOOL MX FUEL SEWER DRUM MACHINE

Milwaukee Tool's MX FUEL Sewer Drum Machine has POWERREDZ lift-assist technology, which makes it easier for one person to transport the machine up and down stairs and in and out of service vans. The machine has the power to clear roots 200 feet out while containing the mess with a fully enclosed drum. The POWERSTATE brushless motor provides full power at the maximum capacity of the machine, the REDLINK PLUS intelligence improves control with an integrated drum brake, and the MX FUEL REDLITHIUM battery pack can power through multiple jobs on a single charge, delivering the easiest setup and transport. 800-729-3878; www.milwaukeetool.com



4 // SPARTAN TOOL MODEL 300

The Model 300 from Spartan Tool has a compact design suitable for tight spaces and narrow doorways. Its enclosed inner and outer steel drums are designed to contain messes. It can be combined with up to 107 feet of Spartan Tool's Magnum Cable for increased power and performance in a compact machine. 800-435-3866; www.spartantool.com





» FRANCHISE SYSTEMS

5 // ROOTER-MAN FRANCHISE SYSTEM

The Rooter-Man franchise system offers a low-cost solution to franchise ownership, with a flat-rate pricing system (no royalty on percentage of sales). Franchisees are granted an exclusive franchise license for their chosen territories, and they become part of a team of independent dealers working together under a nationally branded website and recognized trademark with proven systems for success. It has been named the top plumbing franchise by *Entrepreneur* magazine 15 years in a row. Franchisees receive equity in the national brand by receiving exclusive use of the trademark in their territory. 800-700-8062; www.rooterman.com



6 // Z PLUMBERZ

Z PLUMBERZ is a full-service plumbing franchise specializing in all types of plumbing, drain and sewer solutions. The franchise model focuses on sustainable growth and profitability, with paths designed for those starting brand-new plumbing businesses, as well as for existing plumbing or drain contractors. Owners develop their businesses in four key verticals, including retail plumbing, drain and sewer cleaning, project plumbing, and pipe lining and trenchless technologies. Franchise owners are provided with the training, resources and support needed to win more jobs, provide exceptional customer service, and become their market's go-to expert. 866-585-9529; www.zplumberzfranchise.com



» PLUMBING PRODUCT

7 // OATEY HERCULES SEPTIC-FLOW

Hercules Septic-Flow from Oatey is a concentrated liquid that is designed to improve the overall efficiency of all types of septic and wastewater systems. Containing billions of super active organisms in each ounce, it has the capability to rapidly complete waste degradation. With the ability to perform under a wide variety of conditions, the product performance will not be affected by temperature, pH variations and the presence of household cleaners or disinfectants. It is designed to be used on a regular basis to eliminate backups, odors and corrosion. It is available for purchase in 2-quart jugs and can be used in septic tanks, cesspools, dry wells, leach tanks and drainfields. Ultimately, it is meant to extend the life of the entire septic system due to its unique growth characteristics. These increase the rate of respiration of existing septic system bacteria, resulting in a faster reduction of organics in the septic tank, allowing for less frequent cleanings. 800-203-1155; www.oatey.com



» PORTABLE JETTERS

8 // GORLITZ SEWER & DRAIN MODEL GO 1500A SERIES

The Model GO 1500A Series jetter from Gorlitz Sewer & Drain has a functional frame construction with a carrying handle, reel accessory tube, retractable pull handle and phenolic 4-inch wheels for easy transportation to the job site. All models come with a custom-built, dual-capacitor, 2 hp electric motor drawing 19.8 amps at full load. The duplex ceramic plunger pump with dual pulsation will generate more than 1,500 psi at 2.1 gph to clear tough stoppages or open frozen pipes. The unit is supplied with one 1/8-inch by 50-foot-long trap hose to clear drainlines 1 1/2 to 3 inches in diameter. The hose and reel connections are provided with quick-disconnect fittings to simplify operation. The reel accessory tube accepts an optional hose reel for compact hose storage and operation. 562-944-3060; www.gorlitz.com

PRODUCT FOCUS

9 // MYTANA M30 MAXBLAST

MyTana's M30 MaxBlast is a portable cart jetter designed to clean 1- to 6-inch lines, as well as rejuvenate aging or clogged drainfields. Its 390cc Honda engine has electric start (EZ start bypass) and automatic throttle down. The triplex pump delivers up to 4.5 gpm at 3,000 psi with thermal protection and pulsation control. The removable hose and reel, combined with the 50-foot jumper hose and reel stand, allows jetting indoors while the gas engine remains outside. The reel carries 200 feet of 3/8-inch jetter hose, with 75 feet of 1/8-inch hose available for smaller lines. All components are packaged on a rugged cart with balanced weight for easy transport. 800-328-8170; www.mytana.com



10 // RIDGID KJ-3100

The RIDGID KJ-3100 portable water jetter offers 3,000 psi of working pressure and 5.5 gpm of flow for fast, effective cleaning of large commercial and industrial lines. The jetter propels a flexible and lightweight hose through 2- to 10-inch lines, blasting through sludge, soap, grease and sediment blockages. As the hose is pulled back, it power-scubs the line, flushing debris away and restoring drainlines to their full, free-flowing capacity — all without the use of harmful chemicals. Pulse action allows for easy negotiation of difficult bends and traps. It has a removable hose reel and Triplex pump with a corrosion-resistant, forged brass head and comes on a two-wheeled cart that easily fits through standard size doors and negotiates tight turns with ease. 800-474-3443; www.ridgid.com



» PUSH TV CAMERA SYSTEMS

11 // CUES MPLUS+ XL

The CUES MPlus+ XL push system is designed for easy operation and flexibility with an all-in-one setup and quick removal of the control unit, which can be used separately. It includes a coiler configuration and pan-and-tilt camera for mainline and larger pipeline applications up to 500 feet. It integrates video observation coding, observation coding interface and digital recording. The lightweight system includes large, durable wheels for portability and a balanced footprint for stability. It is manufactured to handle rigorous field use. 800-327-7791; www.cuesinc.com



12 // ENVIROSIGHT VERISIGHT PRO+

The Verisight Pro+ stainless self-leveling camera with shadowless, variable LED illumination from EnviroSight captures crisp video footage, regardless of pipe material. With supplied centering devices, it inspects lines 2 inches and up, and snakes through multiple bends for maximum range. An integral tri-band sonde (33 kHz, 512 Hz, 640 Hz) works with most any locator. Its rugged welded-steel coiler comes with 130, 200 or 330 feet of pushrod. The entire system runs continuously for six hours off internal rechargeable lithium-ion batteries, or off mains or vehicle power. Its multi-language controller displays footage on an 8-inch TFT LCD, and captures up to 90 hours of MPEG 4 video on an SD/SDHC card (up to 32 GB) or USB stick (up to 128 GB). It lets you zoom 3X and capture images in JPEG format from both live and recorded video, and offers a 16-page text-writer with full-QWERTY keyboard. 866-936-8476; www.envirosight.com





13 // FORBEST PRODUCTS FB-PIC3388MT-200

The FB-PIC3388MT-200 from Forbest Products has a 1.5-inch self-leveling camera head (512Hz built-in sonde transmitter in the spring kit), 200-foot pushrod and a portable control station with a 10-inch LCD screen. It is suitable for lines from 4 to 8 inches. It has a detachable and interchangeable design that allows the user to easily screw on or off parts for upgrading or repair. 877-369-1199; www.forbestusa.net



14 // HATHORN WI-FI DURASCOPE

Hathorn's Wi-Fi DuraSCOPE inspection cameras offer the convenience of streaming video inspections to an Apple or Android mobile device using the free PipeSTREAM app. It can be used to take screenshots, overlay voice commentary and share videos with up to four devices. It has the choice of DuraCAM self-leveling or straight-view camera heads in multiples sizes and an on-screen footage counter. Municipal-grade camera reels are built tough, with butt-welded steel-frame construction, stainless steel camera heads and a choice of HDPE premium pushrod size allows the user to push far and remain in the field longer. It has 512 Hz sonde control and external 18-volt Milwaukee battery compatibility for quick swap-outs and longer time in the field. 866-428-4676; www.hathorncorp.com



15 // RAPIDVIEW IBAK NORTH AMERICA MICROLITE PUSHROD SYSTEM

The MicroLite Pushrod System from RapidView IBAK North America is a lightweight, small-diameter push system with durable steel-frame construction that delivers a high-quality image for all contractors and plumbers. Fitted with 100 feet of push cable, powerful LED lighting and an auto-uprighting camera, it is designed to inspect pipelines 2 to 4 inches in diameter. The entire system is powered by rechargeable batteries and is equipped with the positionable MicroLite Command Console, which includes a 10-inch touch-screen monitor, full Windows operating system, two USB connections and recording software. 800-656-4225; www.rapidview.com



16 // RATECH ELECTRONICS PLUMBER'S HELPER JR.

The Plumber's Helper Jr. pipe inspection system from Ratech Electronics is based on a small-scale reel and comes with 100 feet of mini Gel Rod cable, a removable compact command module with 7.1-inch LCD, a built-in battery and an SD recorder for recording digital images and video. This mini pipe inspection system is available with a full-spectrum, 1.375-inch, self-leveling color camera; a standard color camera; or any of the company's three micro camera heads — 5/8-, 3/4- or 1-inch diameter. 905-660-7072; www.ratech-electronics.com



17 // SECON EXTREME SERIES

Extreme Series cordless sewer cameras from SECON come with two 20-volt DeWALT batteries and a charging station. An 18-volt power supply is included for plug-in operation. They have SD card recording and Wi-Fi connection to view inspections in real time on personal smart devices. The unit includes a 7-inch color LCD monitor, 512 Hz sonde/transmitter and a stainless steel camera head. They are available with 100 to 300 feet of push cable and are capable of viewing 1 1/2- to 12-inch pipe. 702-527-5100; www.seconv.com

PRODUCT FOCUS

18 // SUBSITE ELECTRONICS PRIVATE EYE II

The Private Eye II mainline inspection system from Subsite Electronics comes enclosed in a Pelican waterproof and crushproof case. Weighing just 30 pounds, it provides extreme portability without sacrificing field durability. It is a suitable solution for easements, off-road manholes or any locations that are hard to get to. It is also suited for smaller municipalities or contractors who need the power and capabilities of a full mainline inspection system in a mobile package. It is compatible with all the company's mainline cameras and tractors. When combined with the compact portable reel loaded with single-conductor cable, it can inspect 4- to 200-inch-diameter pipelines up to 1,000 feet in length. 800-767-1974; www.subsite.com



19 // VIVAX-METROTECH VCAM-6

The vCam-6 HD inspection system from Vivax-Metrotech includes features such as text-writer, voice-over, locatable sonde and traceable pushrod as standard equipment. The standard reel is available with 200, 300 or 400 feet of pushrod and the choice of a 1.3- or 1.8-inch self-leveling HD camera. The system includes a daylight-viewable control module with a 9.7-inch HD LCD monitor, distance counter and internal rechargeable batteries with five-plus hours of battery life. Video recording and JPG-format pictures can be saved to the internal 1 TB hard drive. The control module has built-in Wi-Fi to stream live video and snapshots to the vCam Live View Mobile app. 800-446-3392; www.vivax-metrotech.com



» TRUCK/TRAILER JETTERS/ACCESSORIES

20 // CAM SPRAY CV SERIES

The CV Series cargo van drain jet from Cam Spray offers diesel-fired hot water for added jetting power. Several models are available up to 4,000 psi and 12 gpm. A triplex plunger pump with power pulse valve provides an extra push when needed. Air purge and recirculation to the tank are provided for freeze protection. It comes with a 5-gallon fuel tank, heavily built, powder-coated frame with full deck, a 130-gallon water capacity, a 12-volt DC reel with 2-1 clutch drive allowing for free spooling and a powered hose return. It's controlled by a push button or foot switch. Accessories include a set of four nozzles, storage box, tip cleaner, tiger tail, safety shield, rubber gloves, high-visibility safety vest, 50-foot washdown hose and trigger gun. 800-648-5011; www.camspray.com



21 // CHERNE JET-BALL CLEANING BALLS

Cherne Jet-Ball Cleaning Balls are an inexpensive tool for cleaning new lines prior to line acceptance testing. They have eye bolts at each end for tethering and spiral grooves to create high-power spraying action for cleaning pipelines. They are available in three variations. 800-843-7584; www.cherneind.com





22 // ENZ USA GOLDEN JET 10.060A/B/CTR TURBINE NOZZLE

With operating flows as low as 8 gpm at 2,000 psi, the Golden Jet 10.060A/B/CTR turbine nozzle from Enz USA is a powerful cleaning tool. The turbine design allows for lower flow and less water usage while maintaining high torque for effective pipe cleaning in lines ranging from 2.5 to 8 inches. Because of its sealed bearings, this nozzle can be operated with both clean and recycled water while being relatively maintenance-free. This compact, efficient nozzle is a powerful root remover and is suitable for use on grease, solids, mineral deposits, concrete and grout. Its complete kit provides a selection of precut chains, skids and two head styles. 877-362-8721; www.enz.com

23 // HOTJET USA HOTJET II

The HotJet USA HotJet II trailer-mounted jetter is now available with hydraulic hose reels and 37 hp Vanguard fuel-injection engine. Operating with hot or cold water, it runs 12 gpm at 4,000 psi, cleaning 2- to 12-inch lines. The fuel-injected unit is a good alternative between the small output and larger output machines. It comes ready to operate upon delivery with a 330-gallon water tank, detergent tanks and full power-washing capabilities for cleaning, disinfecting and sanitizing after the job. It is mounted on a 7,000-pound rated tandem-axle trailer (single-axle units are also available). It has a rear control panel and remote control, two HD diamond plate side toolboxes and a front toolbox. 800-624-8186; www.hotjetusa.com



» VACUUM TRUCKS/PUMPS/ACCESSORIES

24 // PIK RITE STEEL 3,600-GALLON VACUUM TANK

The Pik Rite steel 3,600-gallon vacuum tank is designed for strength and reliability. Its 3-inch internal plumbing keeps the exterior clean and simple. The vacuum pump mount is attached to both frame rails and easily supports pumps from any major manufacturer. It has four sight eyes for the waste compartment. The tank interior is equipped with walk-through baffles and a 20-inch rear manway for easy clean-out. The LED running light kit is installed with a fully molded wire harness. Operator work lights and a strobe light are mounted on the top rear lighting bracket. Polished aluminum hose trays and low hose hooks are coated with protective liner. 800-326-9763; www.pikrite.com



25 // VANGUARD PATHOGEN DEFENSE SYSTEMS

Vanguard Pathogen Defense Systems are multipurpose, antibacterial sanitizing systems custom-designed for jet, combination and CCTV trucks. The system's primary purpose is to eliminate pathogens and bacteria on the jet hose, which is the primary transfer point between wastewater operators and potentially harmful microbes in the sewer system. However, their effective sanitizing capabilities also extend to all areas of the job site, including SSOs, tools, boots, gloves and even the truck itself. Furthermore, the system is a dynamic cleaning device that serves a more pragmatic purpose beyond only eliminating hazardous pathogens invisible to the naked eye; its powerful spray gun and collar is designed to strip grease, grime and sewer residue from the jet hose and other dirty tools, leaving both the truck and the operator clean and ready for the next job. 303-884-7552; www.vanguard-systems.us c





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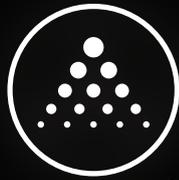
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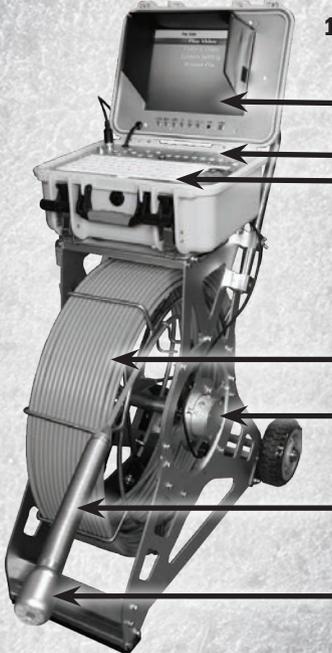
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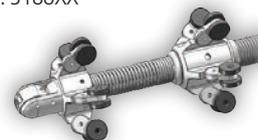
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PRODUCT SPOTLIGHT

LOW-PROFILE VACUUM EXCAVATOR FOR DEMANDING SOFT EXCAVATION APPLICATIONS

By Craig Mandli

When you have a quality product, there is no need to reinvent the wheel. But that doesn't mean you can't improve it. Now Vermeer has updated its truck-mounted vacuum excavator line with the new VXT300 truck vac.

The VXT300 is outfitted with an 8-cubic-yard spoils tank, a 6-inch dig tube and the ability to carry up to 800 gallons of water so crews can maximize productivity on the job. According to Jake Jeffords, director of sales, marketing and global accounts at Vermeer MV Solutions, it is one of the lightest truck vacs in its class and designed with a low overall height of just 11.5 feet to efficiently transport spoils from the job site to the dumpsite. The VXT300 is the next generation of 8-cubic-yard truck vacs, replacing the VXT8 Mega vacuum excavator in the Vermeer line.

"We've made several upgrades to this truck vac and updated the model number to better align with the rest of the Vermeer truck vac line," Jeffords says. "It's a mid-sized PTO vacuum excavator for utility contractors working on projects where several holes need to be dug and for drilling crews using large volumes of drilling fluid. It is also a great fit for municipalities and contractors working on sites that



only allow for soft digging methods, such as solar farms and data centers."

The VXT300 is built on a Kenworth T370 truck chassis with a 350 hp diesel engine and a six-speed automatic 3,000 RDS Allison transmission. The truck's PTO drive powers its Roots 624 vacuum blower with a maximum flow of 3,500 cfm and maximum suction of 18 inches Hg. With a water pump capable of producing 10 gpm at 3,000 psi, the VXT300 delivers productivity on large jobs as well as when digging at deeper depths. In addition, this truck vac's PTO drive system allows the vac to keep running while repositioning

the truck between holes, rather than requiring full machine shutdown, for optimal efficiency on the job.

The control system on the VXT300 makes it possible to be operated by one person using a durable full-function belly-pack or hand-held remote. It also comes with a reverse flow option to assist with spoils off-loading and clearing hose clogs. The waste tank has a cam-over hydraulic door and in-tank washout. Optional equipment includes winter packages with a 420,000 Btu water heater, as well as an onboard PTO-driven air compressor. 352-728-2222; www.vermeer.com

1 // GENERAL PIPE CLEANERS GEN-PACK BATTERY ADAPTER

The new Gen-Pack battery adapter from General Pipe Cleaners allows for operation of sewer inspection camera systems in remote locations where access to power is limited. Depending on battery type and system settings, the Gen-Eye POD or Gen-Eye X-POD camera systems can run up to 12 hours with the Gen-Pack. The adapter is fuse protected for safety and easily mounts to both full-size and mini-reel versions of the Gen-Eye POD and X-POD. It features a powerful command module with USB port to record video inspections on flash drives. It also includes a 7-inch LCD color monitor, one-touch recording, digital zoom, voice-over recording and more. 800-245-6200; www.drainbrain.com





2 // RIDGID RP 351 STANDARD PRESS TOOL

The RP 351 standard press tool from RIDGID has a SlimGrip handle for enhanced balance and control and weighs only about 8 pounds with battery. It joins the recently introduced RIDGID RP 350 press tool, a drill grip standard press tool. Together, the press tools are ideal for making connections on carbon steel, copper, PEX and stainless steel pipe. The RP 350 and RP 351 feature an advanced brushless motor and come paired with LED lights. Each tool's 18-volt battery platform includes chargers and a 12-volt car charger cord. The units also pair with the RIDGID Link app to track tool usage, service needs, battery life and last known location. 800-474-3443; www.ridgid.com



3 // ARIES INDUSTRIES NEW DUAL REEL

Moving from a stacked to a combined configuration, Aries Industries' new dual reel occupies a slim footprint within the company's inspection vehicles. Slip rings are now inside the shaft, eliminating the need for slip ring boxes. The dual reel provides quick, easy setup and operation with single-button downrigger deployment, so there are no pins and knobs to adjust. Reel controls have been consolidated to a single accessible panel. The spring-loaded, retractable downrigger rollers allow easy cable removal. Field operation has been improved with enhanced level-wind timing for even level winding of the cable, and precise adjustable drum tension control with caliper and floating rotors on each drum. 800-234-7205; www.ariesindustries.com



4 // PERMA-LINER INDUSTRIES EXTREME COLD 4:1 RESIN

Perma-Liner Industries is expanding its resin offerings to include a new Extreme Cold 4:1 resin. The epoxy resin comes in 40 pound buckets and is a complement for ambient curing in temperatures lower than 30 F up to 50 F. Perma-Liner offers 12 different resins for all types of rehabilitation projects that are eco-friendly, compatible with Perma-Liner products, meet and exceed ASTM 1216 and NSF Standards, and provide minimal shrinkage for maximum adherence to the host pipe. 866-336-2568; www.perma-liner.com



5 // DITCH WITCH RT70 RIDE-ON TRENCHER

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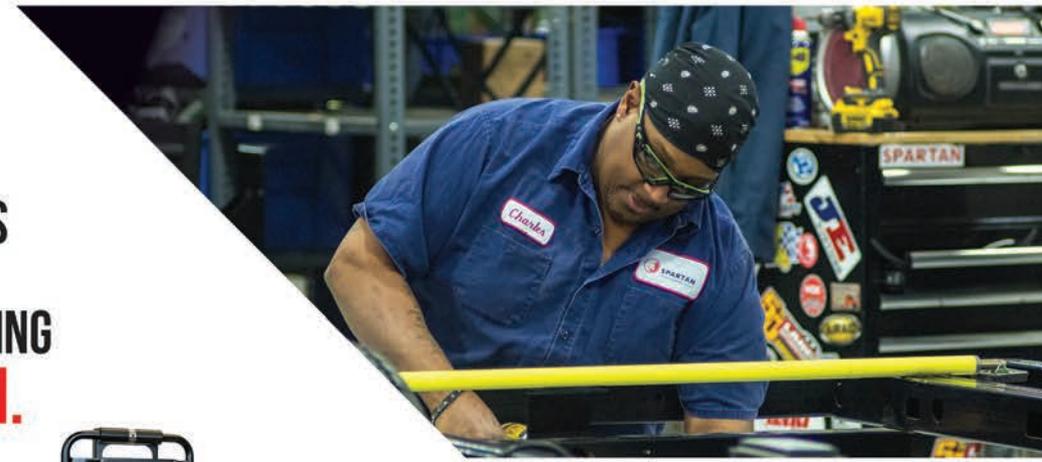


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