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ON THE COVER // Michael Wilson owned a plumbing company when he discovered pipe lining technology at a trade show. He saw huge potential in his Florida market for that kind of technology, and when a big lining job presented itself, he jumped at the opportunity. Lining took off and he eventually dropped regular plumbing services and established Pipelining Technologies. With his son Loren, operations manager, the company has become the go-to company for pipe lining in southeast Florida. (Photography by Steve Martine)



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COMMON GROUND

Every company we feature is unique, but commitment to the industry is something they all share

THE TWO COMPANIES PROFILED in this month's issue have two things in common that stuck out to me. One, both owners took advantage of an opportunity and made the most of it. And two, they both have a philosophy for steady, controlled growth.

The similarities don't end there, yet the companies are very different.

Drain Guys Chicago owner Felix Delgadillo would occasionally receive drain cleaning calls over the course of his 17 years as a mechanical plumber, but he always declined the jobs. When he was

eventually introduced to drain cleaning at the WWETT Show, the conversation triggered the entrepreneur in him.

Drain Guys opened in 2019 and Delgadillo fully embraced the change. The business has been growing at a sustainable pace; he wants to stay in the field and not be forced to oversee things from an office. To that end, he hired two teenagers (one is his younger brother) who want to get into the trade. With their help, an efficient scheduling system and confidence in his business plan, Delgadillo is building his company just the way he wants and finding success doing it.

The other featured company, Pipelining Technologies, provides pipe lining, coating and inspection services in southeast Florida. Owner Michael Wilson is also a former plumber. Similar to Delgadillo's story, he learned about pipe lining at a trade show, saw huge potential for that technology in the South Palm Beach area, and the idea took off when he received a call about a potential lining job. Wilson established the company in 2004 in West Palm Beach, and eventually dropped plumbing services to focus exclusively on trenchless pipe rehabilitation.

Wilson's son Loren remembers watching that first job (he was only 10 at the time), and is now the company's operations manager. He says the focus on only lining has made sense for their area and the company has steadily grown over the years. They now have 40 employees. The specialized service has meant specialized training for the crews who, Loren says, are probably the best in the area because it's all they do.

Even though these companies have similar origin stories, they grew in very different directions — yet both are successful because they became exactly what the owners envisioned.

That's something I always find interesting when I'm talking to contractors. Even though *Cleaner* covers a relatively small niche in the wastewater industry, each company we feature is unique. Different services, training methods, customer service philosophies, marketing techniques, size, growth trajectory — so much is individual.

But each company impresses me every month with one more thing they all have in common: the commitment to solving customers' problems.

You all have great devotion and respect for this industry, and I have great respect for you because of that.

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

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The logo for the National Association of Sewer Treatment Technicians (NASTT), featuring a stylized globe with the letters 'NASTT' in the center.

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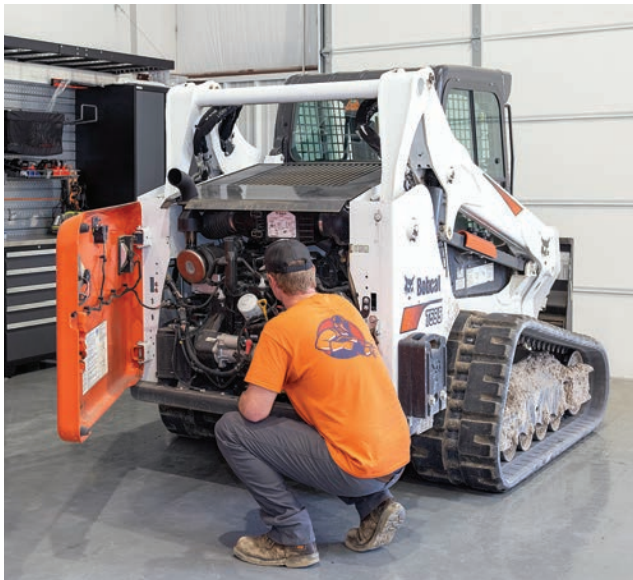


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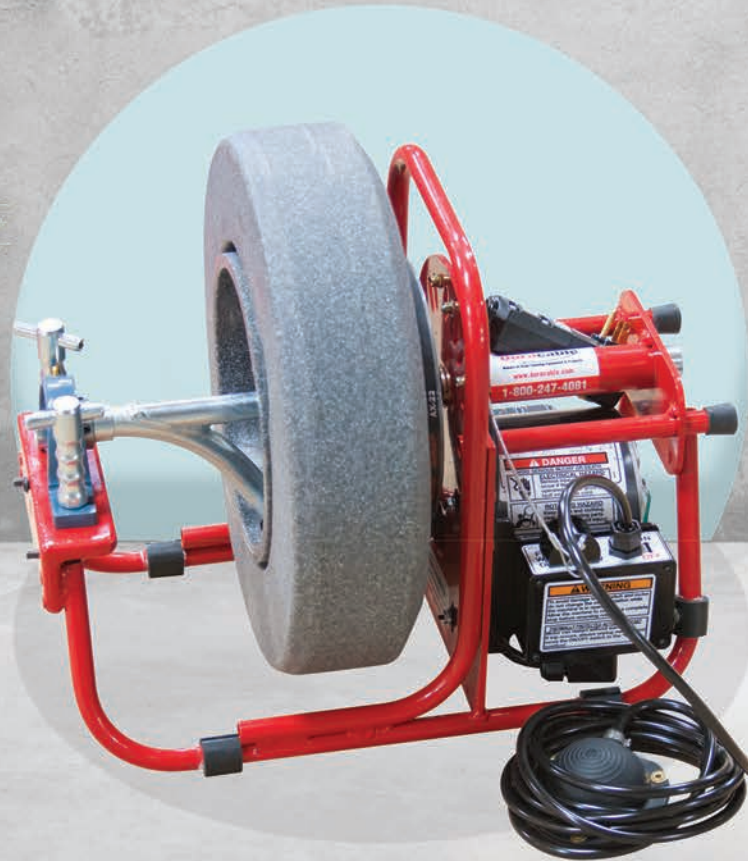


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A PIVOT TO PIPE LINING

AN ESTABLISHED COMPANY SEES BUSINESS BOOM AFTER DITCHING PLUMBING TO SPECIALIZE IN PIPE LINING SERVICES // **By Ken Wysocky**

Answering the door when opportunity knocks may be a cliché, but it aptly describes what spurred Michael Wilson to establish Pipelining Technologies, a trenchless pipeline rehabilitation company, back in 2004.

At the time, Wilson owned a plumbing company called Wilson Plumbing, based in West Palm Beach, Florida. While at a trade show, he learned about pipe lining technology, which then was in its infancy in the United States.

“He was very intrigued by it and saw huge potential in our market for this kind of technology,” says Loren Wilson, Michael Wilson’s son and the company’s operations manager.

The proverbial knock on the door arrived in the form of a phone call from a prestigious resort in Palm Beach that was having issues with leaking sewer lines that ran under the resort’s golf course and pool.

“Excavating to replace the pipes was problematic because of the high water table in Florida and digging up

« Pipelining Technologies operations manager Loren Wilson, team leader Rashard Turner, and technicians Jalon Jones and Micah Pena (from left) inspect a pipe before a lining job.



a golf course and below a pool would be extremely disruptive,” Wilson says. “So it was a perfect application for pipe lining technology.

“I was 10 years old at the time and still have photos of myself on that job, which led us into full-scale pipe lining.”

TIME TO SPECIALIZE

After completing that project, the elder Wilson was so convinced about the great future potential of pipe lining that he decided to jettison his plumbing services and focus on trenchless pipe rehab instead. And so Pipelining Technologies was born.

Today, the company generates millions of dollars a year in revenue and employs 40 people, compared to four when the company was founded. Its primary service is lining vertical stack pipes in condominiums.

“We’ve lined stack pipes in 25-story buildings with one solid liner, instead of leaving joints at every floor that could eventually fail or leak,” Wilson says, noting that the company mostly uses MAX SuperFlex liners from MaxLiner USA for long, straight runs of pipe.

If vertical stacks have multiple offsets, the business uses the Brawoliner product from Germany-based Brawo Systems (supplied by Apex CIPP Solutions), which is a more flexible liner that transitions well inside pipes with varying diameters.

“We like to have as many tools in the toolbox as possible to fit all applications,” Wilson says.

In the ensuing years, the company developed a reputation for investing in cutting-edge technology for everything from pipe lining to pipeline inspections to robotic tools that do everything from reinstating sewer lines to grinding out obstructions.

And as technologies advanced, Michael Wilson left no stone unturned in his search for the latest and greatest tools — a quest that led him to attend trade shows in Europe as well as the United States. It’s not that he disliked American technology; at the time, European companies were the only ones building products that matched his father’s needs, Wilson says.

“A lot of the robotic tools he wanted at the time were made only in Europe,” he explains. A good example is the five DC Super Flex reinstatement machines the company owns, made by Dancutter, a Denmark manufacturer.

“At a WWETT (Water & Wastewater Equipment, Treatment & Transport) Show, the owner of Dancutter asked us to come and visit his facility, and after that, we sent two technicians there for training,” Wilson says. “Then we heard about other European trade shows and that’s how the snowball started rolling.”

» Rashard Turner uses a Radiodetection locator to locate a pipeline.



Pipelining Technologies Inc.
WEST PALM BEACH, FLORIDA

OWNER	Michael Wilson
FOUNDED	2004
EMPLOYEES	40
SERVICES	Pipe lining, pipe coating, pipeline inspections
SERVICE AREA	Southeast Florida
WEBSITE	www.pipelt.com



◀ Micah Peña uses a Pearpoint push camera to inspect a lateral in the backyard of a residential customer.

✓ Turner, Peña and Wilson (from left) start getting ready on a job site in southeast Florida.



“WE LIKE TO HAVE AS MANY TOOLS IN THE TOOLBOX AS POSSIBLE TO FIT ALL APPLICATIONS.”

LOREN WILSON

SMALL-LINE SOLUTION

For pipe lining, the Brawoliner represented the most suitable solution for rehabbing the small, 2-inch drainlines prevalent in Florida. It’s common for these drainlines to be buried in homes’ concrete-slab foundations, Wilson explains.

“Many homes have bathrooms on one side of the house and a kitchen and laundry facilities on the other side. So there are a lot of bends in the lines.

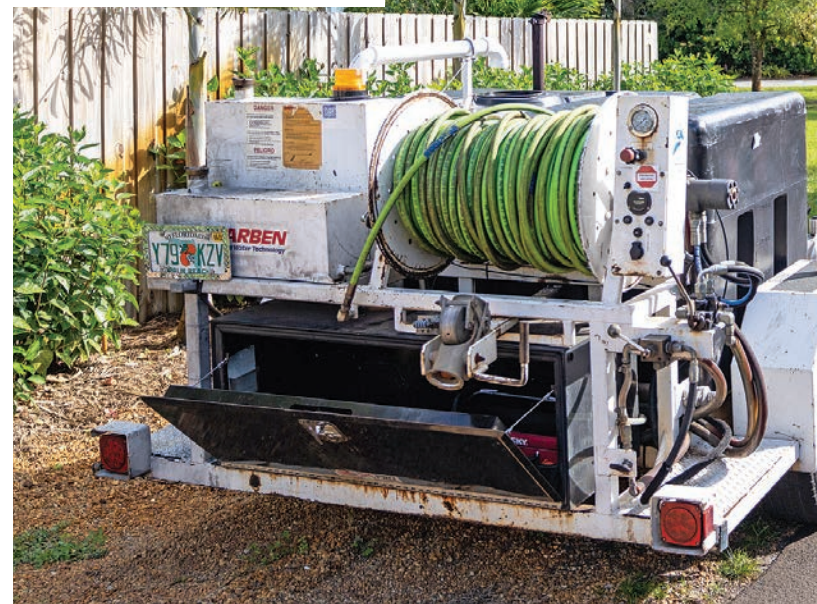
“We almost gave up on the market for lining 2-inch pipes because there wasn’t anything available, which left us with the option of breaking open floors to replace pipes. But then we found Brawoliner, which really shines in the 2-inch market.”

Brawoliners are made from a special knitted fabric that makes them very flexible, an attribute that works great in lines with multiple 90-degree bends, Wilson says.

“With Brawoliners, we can make a small opening in drywall or even line from the roof through a stack pipe because it’s a little undersized, which allows it to direct itself through bends in 2-inch pipes and wrap around fittings. It makes for a nice, smooth, finished product, without any wrinkles.”

Furthermore, installations go faster because there’s no need to use a calibration tube to keep the pipe conformed to the host pipe as it cures. Instead, the liners are wrapped inside a Saran-wrap-like foil, or membrane, which makes it airtight, he says.

“We just clamp shut the end of the liner and inflate it with an air compressor, which keeps it pressed against the host pipe. The air pressure effectively acts as a calibration tube.”



PRODUCTIVITY INVESTMENTS

Over the years, the company has built a large inventory of equipment to better serve customers. That roster includes an XR2 vacuum trailer made by Vermeer Corp.; three 4018 trailer jettors from US Jetting (4,000 psi at 18 gpm) and two E Series trailer jettors from Harben (4,000 psi at 18 gpm).

To inspect pipes, the company relies on nearly two dozen Pearpoint push cameras; three Agilios push cameras from IPEK International GmbH in Germany, used primarily for inspecting vertical stack pipes; one push camera made by IBOS a.s. in the Czech Republic; six MiniFlex cameras from Camtronics BV in The Netherlands, for smaller-diameter pipe; and one Viper push camera that attaches to a jetter hose and is made by Envirobot in Germany.

For pipe lining projects, the company relies on two inversion drums made by Perma-Liner Industries and Sacpro AB in Sweden; Tee-liners made by Repiper AB, another Swedish company; and felt liners from RSM Lining Supplies.

“The Tee-liners allow us to line leaking fittings without opening up walls,” Wilson says.

For point repairs in pipelines, Pipelining Technologies uses systems from Trelleborg Pipe Seals and HammerHead Trenchless.

The company also owns Maxi and Mini Miller drain machines

from Picote Solutions; a Picote Brush Coating System, which lines pipes with thin layers of epoxy; four drum cable machines from General Pipe Cleaners; eight drum cable machines from RIDGID and one RIDGID K-60SP sectional drain machine.

KEYS TO SUCCESS

One critical success factor was Michael Wilson’s emphasis on directing profits back into the company and investing in advanced technologies. That enabled the company to do larger and more



“INSTEAD OF BRANCHING OUT WITH PLUMBING AND LINING DIVISIONS, WE NARROWED OUR FOCUS TO JUST PIPE LINING BECAUSE OF THE HUGE POTENTIAL.”

LOREN WILSON

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📍 Jones breaks up rock to expose a pipeline in the access pit.

complex projects that competitors couldn't handle for lack of suitable equipment; plus it helped the company establish a stronghold in a lucrative market niche, Wilson says.

"Instead of branching out with plumbing and lining divisions, we narrowed our focus to just pipe lining because of the huge potential," he explains. "And because pipe lining is so different from plumbing, we found it more beneficial to have our guys focus just on pipe lining.

"As a result we feel like our guys are the best in the southern Florida market because that's all they do."

Wilson also credits a bonus program that motivates workers to follow safety protocols, wear proper personal protection gear, do required paperwork thoroughly and so forth.

"If they do all these things, they get a cash bonus at the end of each month," he says. "If they violate rules, it decreases their bonus payment. And the longer you're here, the higher the available incentives."

The program has been very effective at boosting on-the-job safety and ensuring that managers file daily work reports.

"Things changed 180 degrees," Wilson says.

CONTINUED >>

Any trenchless pipeline rehab company knows that high-risk, high-reward pipe lining jobs can easily break bad. While that's certainly not ideal, it's imperative to learn from mistakes to avoid them on future jobs.

"We treat a job that goes sideways as a learning experience," says Loren Wilson, operations manager at Pipelining Technologies in West Palm Beach, Florida. "This industry still is relatively new, so there aren't any trade schools or apprenticeship programs for pipe lining — it's something you learn every day on the job.

"We've had occasions that we thought were catastrophic at the time, but they taught us to plan better."

One of those sideways jobs occurred about six years ago when Pipelining Technologies got a call from a hospital in Miami with a big problem: two areas where 4-inch-diameter PVC drainlines were cracking, allowing groundwater to flow inside.

Worse yet, the pipes were located 16 feet below a 4-foot-thick slab of reinforced concrete that held a giant, 220-ton cyclotron, which generates protons for precision, targeted radiation treatment of various kinds of cancer.

The huge machine requires large amounts of water to keep it cool; afterward, that radioactive wastewater drains into a large holding tank about 300 feet away. To make the job even more challenging, that drainline has multiple bends, Wilson says.

Because the water table in Florida is so high, groundwater was infiltrating the drainline.

"We pushed a camera in there and it looked like a fire hydrant pouring water into the pipe," he says. "All of that water requires treatment, so the extra volume made the treatment costs astronomical."

The company decided to use a fiberglass point-repair system to fix the two 4-foot-long areas with leaks. But company employees had never used the product before, aside from one day of doing practice runs, he notes.

Nonetheless, the first repair went smoothly. But after the second repair, which was 250 feet from an access point and covered a wye fitting, an employee accidentally cut into the fitting while reinstating the line, which created another leak.

After workers installed a point repair inside the fitting, things went further off the rails when the rubber bladder that inflates the point-repair liner got stuck.

The end result: A three-day job turned into a three-month job, he says.

"We had to figure out a way to perform a surgery of sorts and remove that bladder. Excavation wasn't an option, so we ended up investing about \$250,000 in equipment, including a robotic cutter from IMS Robotics in Germany, that we used to cut out the stuck bladder."

Fortunately, this all occurred during construction of the treatment facility, so the cyclotron wasn't usable, he says.

"It was the worst job, yet it was the best job, too, because it required a lot of problem-solving. The takeaway here is don't use a brand-new piece of equipment on a job site, no matter how simple the job may seem.

"Now we do about a month of in-house testing with new products before we use them on a job."



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» Wilson and Turner retrieve supplies from the work truck.

“IN THIS INDUSTRY, THERE ARE A LOT OF THINGS THAT CAN GO WRONG ON JOBS, SO WE WANT OUR GUYS TRAINED AS WELL AS POSSIBLE.”

LOREN WILSON



TRAINING FIRST

Looking ahead, Wilson says the company plans to continue its pattern of steady and consistent growth in order to avoid the pitfalls that often come with rapid growth, such as decreases in quality control and customer service.

Management also plans to continue its emphasis on employee training.

“We won’t make an employee a team leader until they have three years of experience,” Wilson says. “In this industry, there are a lot of things that can go wrong on jobs, so we want our guys trained as well as possible.”

Furthermore, the company also will continue to invest in new, productivity-enhancing technology. For example, the business likely will buy a UV-light-cured pipe-lining system in 2022, which will allow crews to perform long lining runs in larger-diameter pipes.

“We just used a UV-light system to do a 300-foot-long lining run in 8- to 10-inch-diameter cast iron pipe running under a condominium,” Wilson says. “It cured in 3 1/2 hours and we cut in reinstatements the next day, which is very fast for such a long run and this level of difficulty.

“The bottom line is we always want to have the tools and the know-how to accomplish whatever our customers need.” **c**

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Joan Koehne

ROOM TO GROW

There's a lot to consider when it's time to buy a commercial property for your business operations // By Joan Koehne

OPERATING A BUSINESS from a shop in your backyard and a home office may be practical for very small businesses. However, as a wastewater business grows, the need for space likely grows, too. Once a business starts hiring employees or adding services, it may be time to find a commercial facility.

Leasing a facility is a good option for many contractors, but nothing compares to having your own space. Owning a building allows you to renovate, expand and brand the facility to your liking. Additionally, buying a property adds an asset to the business. The property becomes part of the owner's and company's financial portfolio. Potentially, a facility can be part of the owner's retirement plan. Upon retirement, you can sell or lease the commercial property to a successor or another company.

GET SOME HELP

The first step to buying a commercial property is meeting with a banker or lender, says Nate Gamlin, broker-owner at Big Woods Realty in Wausaukee, Wisconsin.

"You don't want to spend a lot of time looking at properties that the bank isn't going to cover," he says. He recommends sitting down with a local banker to determine what's affordable and arrange financing, possibly through a U.S. Small Business Administration loan. When financing is set, it's time to work with a real estate agent who has experience in commercial property transactions.

Business owners may not have the time to research properties on the market, so that's where a real estate agent steps in. Through

most real estate agencies, you can work with a buyer's agent who guides a buyer through the purchasing process and looks out for the buyer's best interests. "It doesn't cost the buyer anything extra," Gamlin says.

A buyer can set certain parameters related to price, size and location, so the agent can pre-qualify buildings to bring to a buyer's attention. Typically, a commercial building will have some combination of a showroom, conference room, individual offices or cubicles, a break room, restrooms and equipment/inventory space.

A contractor with trucks and heavy equipment will want additional amenities. For example, how important is it to park trucks and equipment indoors? The value of having them locked up, easily accessible for maintenance and protected from the elements, especially in the winter, is probably worth the investment. Getting into a nice, warm truck in the morning beats the alternative.

ZONING

Sheds, shops and outbuildings may also be must-have facilities for septic and drain companies. However, zoning ordinances may restrict the number and size of buildings on a property. Zoning ordinances can get in the way of purchasing a property if the intended use doesn't comply with zoning ordinances.

"Depending on where you want your business to be located, zoning can be a big issue. In larger municipalities, you're going to have very strict zoning," Gamlin says. This may be a particular challenge for companies that convey or store wastewater as part of their operations.

Generally speaking, commercial zones group similar businesses in one location. Commercial zones have accommodations for traffic flow, parking, signage and other business amenities.

"There are different levels of commercial use, and there could be a wide range they qualify for," Gamlin says. An unsuitable zoning ordinance doesn't necessarily kill the deal. A buyer can add a contingency clause to an offer to purchase, contingent upon the approval of a zoning change, variance or conditional use permit.

"BUYERS THINK THEY HAVE TO FIGURE OUT ALL OF THIS STUFF BEFOREHAND, BUT IT'S ALL RIGHT TO MAKE AN OFFER ASSUMING EVERYTHING'S OK AND HAVE TIME TO GET IT CHECKED OUT."

NATE GAMLIN

CONTINGENCY FORMS

Another factor to consider when buying a property is the potential for environmental hazards, like underground storage tanks or contaminated soil at the site.

“Anytime you’re buying any property, but especially commercial property on busy roads, there’s a potential for some hazards,” Gamlin says. Environmental problems can be costly to correct and can reduce the value of the property when reselling. Gamlin recommends completing a standard environmental hazards contingency form when making an offer to purchase. That way, you can get out of the deal if there are hazards that require expensive or lengthy remediation.

Contingency forms also cover issues related to a property’s title. An attorney or title company can determine whether something in the title could affect ownership for you or buyers in the future.

Issues with the property title may include:

- Easements: A legal right to cross or use a property for a specific purpose, like a utility company’s easement to erect power poles.
- Encroachments: A neighbor’s building, fence, tree or other fixture crosses the property line.
- Claims against the property: A tax lien or creditor’s lien that needs to be settled before a property sells.
- Private-use restrictions, also called covenants or agreements: Examples are setbacks that regulate the minimum distance from the street, road or other structures; specific uses are prohibited; the building size and number of buildings are restricted.
- Past issues with the property’s title

These issues aren’t necessarily deal-breakers. However, it’s important that buyers are aware of these legalities before closing on the sale.

“This sounds overwhelming,” Gamlin admits. “Buyers think they have to figure out all of this stuff beforehand, but it’s all right to make an offer assuming everything’s OK and have time to get it checked out.”

CHECK IT ALL OUT

When evaluating a property to purchase, Gamlin recommends checking it over inside and out.

“Sometimes you spend so much time looking at the building, but not the land,” Gamlin says. You might miss the potholes in the

CONTINUED >>



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parking lot or the small space to pile snow — hauling snow gets to be expensive. Snow removal, lawn mowing and landscaping expenses are easy to overlook when shopping for a commercial facility, yet they can add up quickly.

Other expenses are more obvious. Be sure to find out what the previous owner paid for property taxes and utilities. “Everybody’s utility use is a little different,” Gamlin says.

Location is another factor to consider. A busy street has the advantage of exposure. Signs and company trucks parked outside can capture the attention of passing traffic. However, a busy street might make it difficult for trucks to enter, back up, park or merge into traffic.

When evaluating properties, consider the value of a drive-through truck bay. Trucks enter through one door and exit through another, without having to back in and out. Convenient, safe and time-saving all at once. A drive-through bay may not be feasible at the properties on the market, but there are alternatives.

“Driveways and parking lots obviously are important parts of the business. You want traffic to flow, and you want it to be obvious where there’s customer parking and employee parking and a separate area for equipment,” Gamlin says.

Any agreement to share a parking lot or driveway with a neighboring property needs to be detailed and understandable, he advises. “Nobody wants to argue with the neighbor.”

Nobody wants to argue with tenants, either. While some commercial properties on the market are vacant, others are leased. Gamlin recommends reading the lease agreement and understanding the tenants’ rights before placing an offer to purchase. Sharing the space may be beneficial, especially since rent payments can help cover the mortgage.

With any purchase, there will be trade-offs but that’s OK, Gamlin says. “Don’t worry about having everything you want right away.”

Companies can purchase a commercial building with a lot of potential, then renovate it to suit their needs. “You can always get a property with plenty of room for expansion. It’s easier to add on than start at a new location.”

Choosing a location depends upon what’s available near your customer base, what’s affordable, and what fits your business operations. No property will be perfect, but renovation or expansion can bring the property closer to your ideal facility. There’s bound to be trade-offs, but purchasing an existing property typically is less expensive than building new.

Finding a commercial property that’s right for you will take some time and research. Working with an experienced commercial real estate agent can simplify the process. Outgrowing your current space isn’t such a bad problem to have because it means the business is prospering. You’re ready for a commercial facility that’s bigger and better, signifying a bright future. **c**

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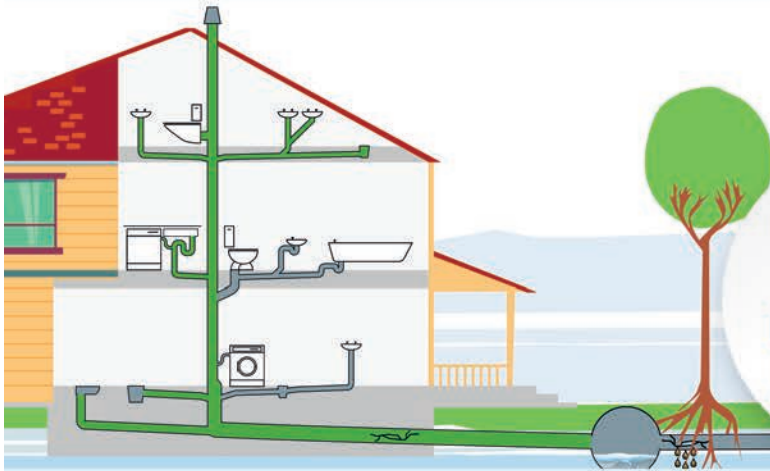
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EQUIPMENT REDEFINED

Milwaukee Tool is committed to producing tools that make drain cleaners' jobs easier

// By Kim Peterson

MILWAUKEE TOOL HAS been supplying tools and equipment to the construction, plumbing and drain cleaning industries for nearly 100 years.

Since its founding, Milwaukee has invested in taking the time to listen to real users of its equipment, in order to understand the demands and challenges of the industry and provide solutions for a safer and more efficient job site for all its customers. From its very first portable drill to the Sawzall to a full line of cordless tools, the company continually seeks to go beyond the basic requirements of the user and deliver new levels of productivity to its customers.

For the past seven years, Kathleen Keegan has served as a group product manager for Milwaukee, leading the drain and inspection category of the business. Prior to this role, she was a territory manager for Milwaukee's parent company, Techtronic Industries.

Cleaner recently spoke with Keegan about Milwaukee Tool's history, its game-changing innovation of drain cleaning tools, and its continuing dedication to serving those in the trades.

CLEANER: Tell us a little about the history of Milwaukee Tool.

Keegan: Since Milwaukee began in 1924, we have led the industry in developing innovative solutions that deliver increased productivity and unmatched durability for professional construction users. Whether it is through our M12 and M18 cordless systems, the groundbreaking performance of our M12 and M18 FUEL products, time-saving accessories, or innovative hand tool and storage products, we are dedicated to delivering a continuous flow of advanced, trade-specific solutions.

We achieved a major step forward in the industry when we invented the technology that enabled the use of lithium in power tools. It was an achievement that marked a turning point for every trade in the industry and spurred the question, "Are battery-powered tools the future of the job site?" At the time no one believed in this technology more than our team.

« The MX FUEL line of cordless, battery-powered equipment from Milwaukee Tool makes equipment easily portable while reducing hazards like emissions, noise and vibration.

We knew that the cordless job site wasn't just a fad — it was the future.



**KATHLEEN
KEEGAN**
Group Product Manager



» Milwaukee Tool's POWERTREDZ Lift Assist technology reduces the strain of lifting and allows for one-person transportation of heavy equipment.

CLEANER: What differentiates your tools and equipment from the competition?

Keegan: We committed ourselves to developing solutions that improve the ability to clear and inspect from the fixture to the sewer line for drain cleaning professionals. We listened to users' frustrations and ideas and started to consider not only how the equipment was used in an application, but also how it gets to and from a site. This dedication has made us the only manufacturer to offer a full range of battery-powered cable machines and inspection equipment.

Small innovations can make a job easier or more efficient. For example, our M18 FUEL Drain Snake with CABLE DRIVE has a fully enclosed drum. This ensures the best protection but also helps contain the mess to make it easier to get onto the next job. This Drain Snake also was the first time brushless motor technology was brought to the drain cleaning industry. Cordless snakes eliminated the cords for easy setup.

CLEANER: What's the philosophy behind the development and innovation of your equipment?

Keegan: Our philosophy is to understand all aspects of the job, beyond the application. Through a thorough evaluation, we understand what our users need their equipment to do, what frustrations they have, and how we can provide meaningful innovations to help increase their productivity. We set out to completely rethink a solution, delivering game-changing innovation. We are committed to developing solutions that improve the ability to clear and inspect from the fixture to the sewer line for drain cleaning professionals to service more calls with less hassle.

CLEANER: What sort of needs does your drain equipment lineup address? Tell us about the equipment and what applications they best serve.

Keegan: We realized there were many needs going unmet in the drain cleaning industry and in 2016 we decided to deliver on these needs and provide drain cleaning professionals with the most portable and versatile solutions. Those needs were not just about being able to get a job done, but also providing a solution that met the power and runtime needs for our users while making them safer and more productive.

Our complete line of cordless cable machines gives the freedom from the outlet. This not only means no tripping hazards but



also no cords over standing water and eliminates shock hazards. Transporting the equipment is a common frustration. All our drain cleaning solutions are focused on simplifying the transportation of the machine and containing the mess to and from the job. A cordless cable machine can be set up instantly, saving time. In some instances, we've completely changed how equipment is transported. For example, our M18 FUEL SWITCH PACK Sectional Drum Machine has a modular design with backpack straps that make transporting to a roof, drain or crawl space easy. It also has a fully enclosed drum for protection against spinning components and job site mess.

CLEANER: How does the MX FUEL line of cordless equipment change the game for drain cleaners?

Keegan: While power tools have received the benefits from cordless technology, the same cannot be said about light equipment. Our MX FUEL System of cordless equipment are the first battery-powered solutions of their kind and deliver the performance and durability demanded by the trades without the hazards associated with emissions, noise, vibration and the frustrations of gas maintenance.

While doing product research for this system, we continued to hear stories of drain cleaners throwing their backs out while transporting this equipment. It is not easy to haul a 200-pound machine up and down stairs or in and out of a service vehicle. It was not uncommon to need a second person on the service call just to help load and unload equipment. Harnessing our MX FUEL battery technology allowed us to power parts of the job that others can't because they are tethered to the cord. Our MX FUEL Sewer Drum Machine with POWERTREDZ is the first solution that allows for one-person transportation through our POWERTREDZ Lift Assist technology. This technology takes the heavy lifting off the user by reducing the strain of lifting a 200-pound machine and improves overall productivity and safety.

Our MX FUEL System has other solutions that drain cleaners can benefit from. Our MX FUEL Handheld Core Drill and MX

BEHIND THE GEAR

FUEL Breaker allow users to cut and break up concrete if they need to access damaged lines. Additionally, our MX FUEL CARRY-ON 3600W/1800W Power Supply provides on-demand, portable power anywhere if needing to power other corded equipment.

CLEANER: What are some recommendations for customers shopping for sewer and drain equipment?

Keegan: There is no one-size-fits-all solution for drain cleaners. Because each application is unique, they need different equipment to service different line sizes to be successful in their business. For example, a drain cleaner will need a different tool for small fixture lines, another for large sewer lateral lines, and others for all the line sizes in between.

Drain cleaners also need to think about which solutions will make them more productive. They need equipment that gives them clearing power, performance, mobility and safety to work

their job efficiently and effectively. Additionally, it's important to figure in battery compatibility. Only needing one battery platform to run other solutions they need on the job adds to their efficiency.

We know a lot of research goes into determining which tool or machine a user needs before deciding which to purchase. We've created multiple resources to help find the right machine for the job, whether that be grabbing a handout at your local plumbing wholesaler, watching videos to see the tools in action, or even requesting a demonstration through our website. You can find out more by visiting www.milwaukeetool.com/products/sewer-and-drain-maintenance.

CLEANER: What's new for Milwaukee Tool in 2022? What can customers expect out of Milwaukee Tool in the future?

Keegan: We recently announced our TRAPSNAKE 25' Auger with CABLE DRIVE, the newest addition to our Porcelain Auger System. We introduced the TRAPSNAKE system in 2017, and it showcased a number of industry firsts including a telescoping cable lock, a fixed rubber boot to protect porcelain fixtures, and replaceable cables to increase the longevity of the tools. We saw an opportunity to further utilize our M12 TRAPSNAKE Driver to power a traditionally manual application. The driver gives users the ability to maneuver traps faster, while delivering the right amount of speed and torque for the application. With its inline, compact design, the TRAPSNAKE 25' Auger with CABLE DRIVE gives users the first line of defense for sinks, bathtubs and showers.

Customers can expect to see our continued commitment to providing drain cleaning professionals with the most portable and versatile sewer and drain maintenance solutions. They can also expect to see our investment in technology to build solutions that provide them an easier way to get on and off the job with less hassle, so they can service more calls.

CLEANER: What do you want your customers to think of when they hear the name Milwaukee Tool?

Keegan: We are recognized as a manufacturer of solutions that lead to safer, more efficient job sites. Our dedication is always to our user and the professional trades. We will not be complacent. And we will not stop disruptively innovating to make professionals more productive. **c**



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POWER AND PRECISION

Adjustable chain-cutter nozzle chews through tough mineral deposits and protruding taps

// By Ken Wysocky

A S A SEWER CLEANING VETERAN with more than 15 years of experience, Matt Murphy has used a number of different brands of nozzles to scour pipelines in the Chicago metro area. But he reports that for sheer power and performance, nothing tops the S600 chain-cutter nozzle from USB-USA. Period.

“I’ve used multiple brands of nozzles,” says Murphy, a superintendent at Comprehensive Construction Solutions, a company that cleans about 300,000 feet of pipe a year, on average. “But the USB S600 chain scrapers are superior to anything I’ve ever used.

“They remove large mineral deposits about 75% faster, if not more, compared to any other nozzle I’ve used. The amount of torque and power in these nozzles is unbelievable. They quickly turn mineral deposits, which are harder than concrete, into dust.

“And they trim taps down completely, like someone cut them off with a Sawzall,” he adds. “We used to hate removing protruding taps because it might take hours to cut them out. Now we like to see protruding taps.”

Murphy says he used to use a root cutting nozzle equipped with carbide steel blades and now has a “graveyard” of replacement blades in a supply room because the S600 made them obsolete.

“Each blade cost about \$700 and we were going through three or four a week per crew, and we have five crews. You might break two or three blades on a really tough deposit. ... Sometimes they take up half of a pipe.”

“BY WORKING SO MUCH FASTER, YOU ALSO USE SIGNIFICANTLY LESS WATER AND FUEL. SPEED IS EVERYTHING WHEN YOU’RE CUTTING OUT TAPS AND MINERAL DEPOSITS.”

MATT MURPHY

COMPREHENSIVE CONSTRUCTION SOLUTIONS LLC

CHICAGO, ILLINOIS

OWNER Eden Tekle

TOOL S600 chain-cutter nozzle from USB-USA

FUNCTION Scouring pipelines from 12 to 24 inches in diameter

FEATURES Made from stainless steel and aluminum; turbine driven by six water jets spins chains more than 20,000 rpm; continuously adjustable guide skid in 1/16-inch increments; replaceable ceramic jetter port inserts; 19.5 inches long and about 10 inches in diameter; weighs around 77 pounds; can be used with recycled water.

COST About \$13,500

WEBSITE www.ccsollc.com

INCREASED PRODUCTION

Scouring pipes thoroughly down to their original diameter is particularly important for Comprehensive Construction Solutions crews because the company’s primary focus is prepping and inspecting Chicago sewer lines — typically clay-tile pipes from 12 to 24 inches in diameter — for pipe lining. CCS is in the first year of a five-year contract to prep pipes as a subcontractor for a major infrastructure company, Murphy says.

Some of the productivity gains come from the cutter’s design, which includes a continuously adjustable guide skid that enables operators to quickly set it to clean at exactly the right pipe diameter.

“It’s insanely easy to adjust the size,” Murphy says. “You just insert a device like a hole punch and twist it by hand. You can do it in less than a minute because you don’t have to loosen and then retighten bolts.

» Comprehensive Construction Solutions vacuum truck operator Angel Cruz prepares to lower an S600 chain-cutter nozzle, made by USB-USA, into a manhole to clean mineral deposits in an 18-inch-diameter clay-pipe sewer line.



“That speed of adjustability comes in real handy when you’re inside a manhole. You just go down, adjust it and come out. It’s probably one of my favorite features.”

The increased production improves profitability on jobs, too. And working 75% faster enables the company to perform significantly more work in a year than it did before it purchased the S600 about a year ago, which boosts revenue, he says.

“By working so much faster, you also use significantly less water and fuel. Speed is everything when you’re cutting out taps and mineral deposits.”

Better productivity also enables the company to be more competitive on job bids, he adds.

The S600 is made from stainless steel and aluminum and connects to a 1- or 1 1/4-inch-diameter water hose. (CCS crews hook it up to one of the company’s five Camel combination sewer vacuum trucks, made by Super Products). It’s designed to remove scale, calcium and roots in pipes 12 to 24 inches in diameter and requires a minimum of 60 gpm of water.

The unit’s power stems from patent-pending technology that uses six water jets to drive a turbine that spins the cutting chains more than 20,000 rpm. Three other rear jets propel the device; all the ceramic jetter-port inserts are replaceable. Moreover, the unit can be used with recycled water.

The unit measures 19.5 inches long by slightly more than 10 inches in diameter and weighs around 77 pounds. Its diameter can be adjusted in increments of 1/16 of an inch, which makes it easily to navigate small offsets.

WISE INVESTMENT

The unit costs about \$13,500, but Murphy says its performance and productivity make it worth every penny. As an example, he cites a job CCS did in spring 2021 that involved removing mineral deposits that had formed at every joint in about a 650-foot-long stretch of 18-inch-diameter clay sewer pipe.

“We finished the job in a day. With any other nozzle, we would’ve been on the job for at least a week. Every time my guys use the S600, they’re more impressed.”

“Without a doubt, it’s a heavy investment at first. But it quickly pays for itself when you do as much deposit- and protruding-tap removal as we do,” Murphy says. “It totally dominates in pipes with mineral deposits.” c



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HEARING THE CALL

FELIX DELGADILLO
STARTED DRAIN
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// By Giles Lambertson

FELIX DELGADILLO IS NOT A MAN IN A RUSH.

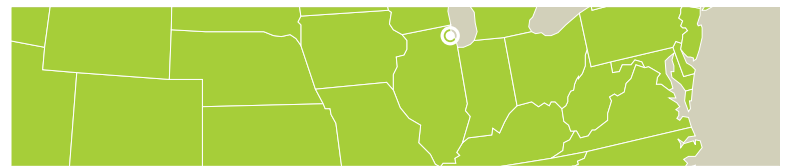
The owner of Drain Guys Chicago is perfectly content to grow his two-year-old drain cleaning business at a sustainable pace that keeps him out in the field rather than in an office overseeing more rapid growth.

“I don’t want to grow too big too fast,” Delgadillo says. “Guys I know say, ‘Why don’t you focus on office work instead of making service calls?’ I tell them, ‘Hey, if I didn’t love this job, I wouldn’t do it. Working with drains is what I like doing.’ The way I see it, I just want to take care of my customers and be happy. I don’t want this to be stressful.”

A casual observer might conclude that Delgadillo is a little too laidback to be a successful business owner. A casual observer would be wrong.

CREATING A FUTURE

Delgadillo was a mechanical plumber for 17 years before he became a drain cleaner. He got the notion of plumbing from a family member who was a plumber, drifting into the trade after high school. At first, he didn’t even particularly like the work. Eventually, he decided, “I guess I am going to make plumbing a career.”



Drain Guys Chicago

GLENVIEW, ILLINOIS

OWNER Felix Delgadillo

FOUNDED 2019

EMPLOYEES Three

SERVICES Commercial and residential sewer cleaning, sewer line patching, sewer pipe locating and inspections

SERVICE AREA Chicagoland

FACEBOOK PAGE www.facebook.com/Drainguyschicago/

His plumbing work was exclusively in new construction settings. He worked for multiple companies, but none of them offered drain cleaning services. Not until Delgadillo attended a WWETT Show in Indianapolis did drains enter his thinking.

“I ran into somebody there who said, ‘Why don’t you try to clean drains?’ That had never really crossed my mind. I sometimes would get calls as a plumber to see if I wanted to clean a drain, but I always declined.”



« After working as a plumber for many years, Felix Delgadillo started his own drain cleaning business, Drain Guys Chicago, in 2019.



🔧 Technician Bill Oudshoorn uses a Picote Mini Miller to descale a drainline, while watching the progress with a RIDGID SeeSnake.

🔧 Delgadillo sets up a SeeSnake controller to inspect a drainline.



The chance conversation at the convention triggered a long-standing entrepreneurial urge. “I’d always wanted to work for myself. You’re creating your own future when you work for yourself. It’s not easy, but it’s rewarding.”

The 37-year-old business owner chose the name Drain Guys and opened for business in 2019 in Glenview, Illinois. (He didn’t check out the name nationally and later tacked Chicago on the end to differentiate his business from a New Jersey enterprise with the same name.)

When Delgadillo switched to drain work, he didn’t give up his day job, so to speak. Drain cleaning became his principal occupation, but he continued to take on unsolicited plumbing jobs. In effect, he leveraged his plumbing business to help launch his drain cleaning business.

“I sent out emails to all my plumbing customers letting them know that I was adding new services,” he says. “Turns out they needed drain services and I was able to fulfill it. It worked out perfectly.”

Today, 75% of his drain cleaning is on residential properties, the rest of it on lines serving commercial buildings, restaurants and the like. His customers are spread around Chicagoland, from North Chicago above Glenview to Chicago’s South Side as well as the various communities in between and further inland from Lake Michigan.

“YOU’RE CREATING YOUR OWN FUTURE WHEN YOU WORK FOR YOURSELF. IT’S NOT EASY, BUT IT’S REWARDING.”

FELIX DELGADILLO

HONESTY AND EQUIPMENT

Delgadillo ranks tools right up there with honesty as keys to his success as a tradesman. “Thanks to our machines we are finding work,” he says. “It comes down to honesty and equipment.”

The equipment part of the equation includes a suite of RIDGID cable machines: K9-306 and smaller K9-102 Flexshaft models and a K-50 sectional machine. Also in his work van are Spartan drain cleaning models 300 and 2001, the latter of which can reach out 300 feet.

For descaling cast iron pipe, Delgadillo depends on Picote tools. That part of pipe cleaning has kept him busy “about every day” in a metropolitan area where cast iron and clay are the dominant pipes in the ground. “The infrastructure is pretty old, but it depends on the city we’re working in. The older the buildings, the older the sewer, though sometimes an old building will surprise you and have sewer lines in pretty good shape.”

For his camera work, he uses RIDGID SeeSnake units and the company is growing a steady clientele of new homebuyers and sales agents contacting him to inspect drainlines before real estate transactions. He tries to

leave mornings open for such work, scheduling drain cleaning service calls in the afternoons.

Such blocked out and efficient work scheduling was not something he could do as a new construction plumber and



⚡ The descaling progress is shown on a RIDGID CS6x monitor.

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FELIX DELGADILLO

Delgadillo likes it. It's another perk of being the boss. “This drain clearing and inspecting is a different ballgame. You never know exactly what you are going to find and where the day is going to take you. It's pretty cool.”

Yet another RIDGID tool is one he pulls out at the end of a job — RIDGIDConnect, an online system that lets a service provider share reports, including video, with a customer through a RIDGID account. An archive function can establish a history of a sewer line. “And you can tell when the customer receives and opens the report,” says Delgadillo, who believes the reporting system is well worth the monthly fee.

A year ago, Delgadillo expanded his services to include some trenchless repair of sewer lines. He uses a Source One Environmental cured-in-place PipePatch system for spot repairs. Trenchless repairs are still a small piece of Drain Guys Chicago drain work — the company did about 15 patches last year — but he enjoys patching a pipe almost as much as he does descaling one.



Delgadillo's Chicago-based company does descaling work nearly every day due to the city's older, cast iron pipes.

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A GOOD START

In an era of workforce shortages among the trades, a young drain cleaning company in Glenview, Illinois, is building out its crew in an unorthodox way: Instagram. Owner Felix Delgadillo regularly posts on the social media platform the photos of his work in and around Chicago. A 16-year-old young man saw the pictures a while back and contacted him about work.

Delgadillo met with him and agreed to hire him for part-time work at his company, Drain Guys Chicago. Colin Sullivan mirrors the entrepreneurial spirit and initiative of his boss and has elected to work some weekdays after school, as well as on weekends. “That kid is going to do something. I’m teaching him everything I know,” Delgadillo says.

Delgadillo first met with Sullivan and his parents to talk about the boy possibly going to work for him. They approved of the situation. Delgadillo said to himself, “Now let’s see if this

kid is serious.” On his first service call, the teen on his own initiative tidied up the van, charged batteries for tools, and otherwise proved to his boss that he indeed was serious.

More recently, Sullivan took pictures of the van full of hand tools and, says Delgadillo, “replicated everything that I had there. He already has more tools than some working adults. Not only that, he owns his own landscaping company. I tell you, he’s a kid to watch out for in the years ahead.”

Delgadillo is taking steps to get Sullivan into formal apprenticeship training after high school. “He’s been a blessing.” The other 16-year-old working for the Drain Guys Chicago owner is his brother, Jacob. The trio operates the drain cleaning business; Delgadillo still operates his original plumbing business but plans to phase it out over the next year or two so he can concentrate on cleaning and fixing drains.



Colin Sullivan



Jacob Delgadillo

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» Delgadillo (left) and fellow business owner Bill Oudshoorn help each other out on jobs when one needs a hand.

“I love a good patch. I love seeing the results after you find and repair a crack in a 6-inch lateral. You put a patch in there and fix it in place and when you send in the camera you see this clean work. It’s amazing. It’s just amazing. That’s when I know that this is my calling.”

“I LOVE SEEING THE RESULTS AFTER YOU FIND AND REPAIR A CRACK IN A 6-INCH LATERAL. YOU PUT A PATCH IN THERE AND FIX IT IN PLACE AND WHEN YOU SEND IN THE CAMERA YOU SEE THIS CLEAN WORK. IT’S AMAZING.”

FELIX DELGADILLO

Not every job is a joy, of course. Delgadillo recalls a cleaning call that went awry when he discovered a probed pipe had collapsed. He spent eight hours freeing his machine. “People think you put the machine cable in the line and call it a day. Far from that. You never know what you are getting into, but that’s why I enjoy the work.”

DOING BIG THINGS

Drain Guys Chicago is a small company by design at this stage of business and a frugally run one. It’s essentially a one-man business, with help from two high school boys he is mentoring; one of them is his brother, Jacob. The drain company and Delgadillo’s still-active plumbing business both operate from his two-car garage. He has one service van and is looking for a second one.

And when he needed a jetter to clean out debris from unclogged sewer lines, he built one. It produces about 3.5 gpm of pressurized water and cost him \$1,000. “It can’t cut roots, but it breaks up grease and flushes it out.”

He also subs out some work. Once a month or so, a lateral isn’t cleanable or repairable and needs digging up. Because Delgadillo doesn’t have an excavator in his garage, he calls Bill Oudshoorn, a friend who runs a sewer line company in nearby southern Wisconsin. Delgadillo, in turn, is called when a tradesman friend needs *his* services — small companies looking out for one another.

Because he is unburdened by business debt, the businessman also has the luxury of helping people who really can’t afford the help. When he goes on a service call and learns a property owner doesn’t have the money to clear a pipe, he sometimes opts to work with the person. “Because I have little overhead, I can help out people. I’ve been there, I tell them, just pay me when you can. Obviously, it’s a business and we have to make money, but I try to do the right thing. God comes first and the rest falls into place.”



In his second year of business, the pandemic generally disrupted commerce. For Drain Guys Chicago, the disruption was minimal. “It was my best year yet,” the company owner says, because people stayed home and sometimes overwhelmed their sewer systems. “I don’t want to call it a blessing, but it was an opportunity. That was when I got my confirmation that, while plumbing work can wait sometimes, drain work doesn’t stop.”

Delgadillo started Drain Guys Chicago without having a customer base lined up, hoping his plumbing customers would utilize his services. He invested his own money in the absence of co-investors, convinced that his business plan was a good one. His confidence paid off. “I was just going to do it, so I did. And now, little by little, we’re doing big things.” c

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INCREASE YOUR RANGE

Flexshaft drain machines provide an array of benefits that improve productivity and profits

// By James Careless

FLEXIBLE-SHAFT MACHINES — flexshaft machines for short — are highly useful tools for clearing and cleaning pipes. They allow plumbers and drain cleaners to precisely target and remove clogs in a manner that is safe, efficient and appreciated by customers.

THE NITTY-GRITTY

Whether powered by their own onboard electric motor or a connected electric hand drill, “flexible-shaft machines employ a swiftly rotating rod or wire coil — much like a speedometer cable — inside a flexible hollow tube or hose,” says David Dunbar, national sales manager with General Pipe Cleaners, which sells a range of flexshaft systems under the Flexi-Rooter brand name. “A high-speed motor connects to the rod’s back end, and that drives a cutting tool attached to the front end.”

The big plus: “With traditional drain machines, the cable spins at lower speeds and uses high torque to ‘poke a hole’ in blockages,” says Shelby Gerl, RIDGID’s product manager for FlexShaft drain cleaning machines. “With FlexShaft machines, the cable spins about 4 to 5 times faster than traditional cable machines, using low torque and high speed to clean wall to wall. FlexShaft cables also break blockages down around the circumference of the pipe rather than just penetrating obstructions, leaving you with a truly clean and rehabilitated pipe.”

“Flexible-shaft machines spin at speeds noticeably higher than those of conventional cable-type drain cleaners,” Dunbar agrees. “Users also quickly discovered that the cutting device — often carbide-tipped chains rotating at speeds of 2,000 rpm or greater — not only milled pipe insides, but removed tree roots effectively. As well, when outfitted with the correct cutting tool and properly used, the combination perfectly prepares pipe insides to accept material used in the relining procedure.”

The range of these flexible pipe cleaners is also impressive. For instance, “RIDGID FlexShaft machines quickly and efficiently deliver wall-to-wall clean in 1 1/4-inch to 6-inch residential and commercial pipes up to 125 feet,” Gerl says. “They utilize various chain knockers



Flexshaft machines are designed for fast and efficient drain cleaning, including the removal of soft blockages, scale, calcium buildup, tree roots and concrete. Here a contractor uses a Spartan Tool Revolution M1 to clear a drainline.

that expand to the size of the pipe to quickly clean the entire pipe.”

Enhanced operator safety is a further feature of flexshaft machines. Traditional drain cleaning machines use an exposed cable that builds up torque as the cable’s cutting end engages a blockage. In a flexshaft machine, the cable spins inside of a housing made of nylon or some other durable material. This sheath protects the operator’s hands and allows for easy wipedowns as the cable is retracted from the pipe.

DESIGNED TO WORK IN TANDEM

The flexshaft machine is designed to work alongside conventional drain cleaning machines, giving drain cleaners and plumbers a one-two punch to clear and clean clogged pipes.

“THE BALANCE OF FLEXIBILITY AND STRENGTH IN THE CABLE IS IMPORTANT BECAUSE IT ALLOWS YOU TO EASILY NAVIGATE THROUGH TRAPS AND BENDS, WHILE STILL BEING TOUGH ENOUGH TO CLEAR BLOCKAGES.”

SHELBY GERL

“FlexShaft machines are unique in that they offer an entirely new way to clean pipes,” Gerl says. “Conventional drain cleaning machines allow you to clear blockages using torque, while FlexShaft machines utilize high speed to completely scour the pipe walls.”

A conventional drain cleaner is used to open a pathway whenever the pipes are entirely blocked. Once this path exists, or if the pipe in question isn’t entirely blocked, a flexshaft machine can take its place to remove the rest of the blockage and clean the pipe’s walls.

“Our goal for the Spartan Tool Revolution line of high-speed flexible shaft machines was to continue bringing our customers the best



With Flexshaft machines, like the RIDGID K9-102, the cable spins about four to five times faster than traditional cable machines, using low torque and high speed to clean wall to wall in the pipe.



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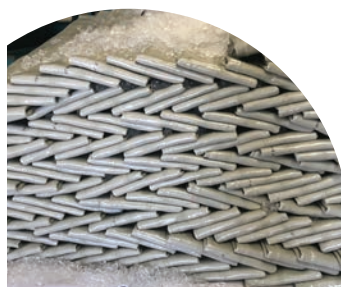
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quality drain cleaning machines,” notes Brian Elliott, Spartan Tool territory manager. “Flexshaft machines are definitely designed for fast and efficient drain cleaning and rehabilitation including removal of soft blockages, scale, calcium buildup, tree roots and concrete.”

The high speed, low torque of the flex-shaft’s spinning head — and the variety of tools that can be attached to it — makes all the difference. “Again, it’s very good at getting rid of root incursion,” Dunbar says. “As well, you can use a flexshaft machine as an effective pipe milling tool. In fact, the first time I heard about this technology, it was referred to as a ‘milling device,’ because these machines were being used to prepare the inside of cast iron pipes for pipelining.”

STRONG, LIGHTWEIGHT CABLES

The flexible, lightweight yet strong cable within the flexshaft’s protective housing — which carries the energy from the drive motor to the clog-clearing head — is central to this machine’s cleaning power.

“The balance of flexibility and strength in the cable is important because it allows you to easily navigate through traps and bends, while still being tough enough to clear blockages,” Gerl says. To provide this flexible strength, flexshaft cables “have multiple layers of individual wires that are tightly wound in alternating directions. The alternating wire layers add strength for operating the cables in both forward and reverse directions.”

“The cable is also lightweight,” Elliott adds, “which is crucial for the speeds at which the cable rotates.” This allows flexshaft machines like the Spartan Tool Revolution M1 “to work in P-traps, U-bends and pipes with multiple 90-degree bends.”

Worth noting: Although flexshaft multilayered wire cables are flexible, “when the cleaning end of the cable meets resistance, the layers tighten against each other making the shaft more rigid-like in performance,” Gerl says.

Using lightweight cables in flexshaft machines also reduces wear and tear on contractors. “They are far easier to use on long pipes than a big plumber’s snake that could weigh several hundred pounds if it’s a shaft device,” Dunbar says. “As well, an unenclosed snake can injure an operator’s hand as it moves, while the flexshaft’s cable is enclosed and thus safe.”

OTHER BENEFITS

Beyond flexibility and safety, flexshaft machines offer many other benefits.

First, because their cables spin inside enclosed housings, these machines are much tidier to work with. Their lack of mess translates into cleaner job sites that take less time to clear while keeping customers happier.



Flexshaft machines like General Pipe Cleaner’s Flexi-Rooter can also be used as an effective pipe milling tool.

Second, the flexshaft’s enclosed cable means that an inspection system can be used simultaneously to provide precise placement, monitor progress and provide something cool for the customer to watch. “This is a huge win for plumbers,” Gerl says. “They don’t have to put a camera down, pull it out and then try to clear a blockage, put the camera back down to make sure the blockage is clear. It’s a hassle that FlexShaft eliminates, meaning you save time on every job. This allows you to add more jobs to your day: Ultimately, we hope to help plumbers bring in more profits.”

The ability of flexshaft machines to provide true pipe cleaning does provide drain cleaners and plumbers with a new service to sell. “They can offer wall-to-wall cleaning at a premium versus traditional clearing of blockages,” Gerl says. “This allows contractors to offer their customers various options to enhance their marketability, increase their revenue and minimize callbacks.”

In fact, “flexshaft machines fill a void between jetters and cable machines,” says Elliott. “They can descale very effectively and are comparable to a jetter for grease removal. Flexshafts can also clean a line instead of just restoring flow. Again, this gives a business owner the ability to offer additional services to their customers.”

Flexshaft machines are tools that can help professionals do a better job for their customers in a cost-effective manner, while providing them with more services, better in-pipe surveillance, and a sense of security once the job is done. **c**

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PIPE BURSTING METHODS AND PROJECTS

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» HORIZONTAL DIRECTIONAL DRILLING

1 // UNDERGROUND TOOLS 2K AND 5K SERIES HORIZONTAL DIRECTIONAL DRILLING SWIVELS

The 2K and 5K Series Horizontal Directional Drilling Swivels from Underground Tools have all component parts (body, bearing axle bolt and clevis pins) machined from heat-treated chrome-moly steel with an average tensile strength of 133,000 psi for superior strength and abrasion resistance. Additionally, all swivel bearing packs are made up of multiple, stacked angular contact bearings, which are designed to handle the high radial, axial and composite loads for the demanding HDD application, while double lip seals resist contamination and protect the bearings. Full-diameter shouldered pins, recessed into the outer casing, create a tremendously strong connection and allow for snag-free pullbacks. Grease fittings are also recessed to protect from breakage. All of these features ensure maximum strength, service life and value. 866-488-3478; www.undergroundtools.com



» HYDROEXCAVATION

2 // DITCH WITCH HXT LINE

Contractors looking for the efficiency and payload capacity of a truck-mounted vacuum excavator can turn to Ditch Witch's HXT Line of vacuum excavators. The HXT50 and HXT75 are powered by Kubota engines with 50 and 75 hp, respectively, for optimal suction power. The HXT50 has a 1,005 cfm blower and 3,000 psi water pressure. Both units are available with 500-, 800- and 1,200-gallon spoils tank configurations, allowing contractors the freedom to stay on a job site longer and avoid repeated spoils disposal and water refilling. The 500-gallon configuration is designed to be under CDL requirements, allowing contractors to transport the machine without a CDL driver on staff. The HXT75 offers 1,315 cfm and up to 5.5 gpm water pump flow. They are designed with a spoils tank-door that can be controlled curbside or remotely to keep operators clean during spoils disposal. Both come with a multifunction remote control option for the boom, allowing operators to more easily control the vacuum hose. 580-336-4402; www.ditchwitch.com



3 // ENZ USA HYDRO X

The Hydro X nozzle from Enz USA is available in 3/8-inch NPT or 1/2-inch connecting threads, and it can function at up to 5,000 psi with flow as low as 8 gpm. It combines a powerful, oscillating water jet with a high debris removal rate. A tungsten carbide front jet ensures a longer life than ceramic jets can offer. For quick and easy maintenance, a repair kit is available. Due to the nozzle's simplicity, repairs can be made quickly and efficiently in the field with little downtime. For the operator's safety, a plastic cover provides protection against harsh and sensitive environments. 888-369-8721; www.enz.com





4 // GAPVAX HV33

Designed to safely transport water and debris in urban areas, the GapVax HV33 is shorter, smaller and more compact than its predecessor. It is 30 feet long overall on a medium-duty chassis and includes a 600-gallon water tank, 6-cubic-yard debris body, 6- or 8-inch top-mounted telescoping boom with a 14- to 17.5-foot reach, 4,000 cfm power and an inverted, full-opening tailgate. 888-442-7829; www.gapvax.com



5 // HOTJET USA VAC 'N JET SERIES

The HotJet USA Vac 'n Jet Series of vacuum trailer jetters are designed to be rugged and compact, engineered to haul equipment and spoils loads, can clean valve boxes and storm drains and hydroexcavate and/or clean drainlines and sewer lines. They offer hot- and/or cold-water operation with a choice of engines ranging from 13 to 66 hp and gas or diesel. They are equipped with premium triplex pumps, a 500-gallon spoils tank, 200-gallon water tank, Gardner Denver vac/blowers, 4-ton hydraulic dump and CentriClean filter system. They can also be designed to meet specifications. 800-624-8186; www.hotjetusa.com



6 // RIVAL HYDROVAC T7 TANDEM AND T10

The T7 Tandem from Rival Hydrovac was designed primarily to be a unit that could be loaded with debris and drive within legislated road limits with most types of debris on board. The unit comes standard with a scale that reads real-time weights both in the cab and on the wireless remote to confirm weight prior to travel. The T10 is built with the same features and operating system, but with larger capacities and components. It is popular with clients who do both utility and industrial work. It is available in three chassis layouts to meet weight restrictions in a given area. An air compressor option allows for excavating with air when required, while a truck-mounted coring system allows for removal of hard surfaces prior to nondestructive excavating. 403-550-7997; www.rivalhydrovac.com



7 // SEWERPROSHOP RAVEN

The Raven hydroexcavation nozzle from SewerProShop has been precision engineered by Intersewer and manufactured to the highest technical standards by ISO 9001:2008 certification in Germany. The weight has the purpose to counteract the high-pressure kickback of the wand. It is constructed from high-grade stainless steel, is threaded, and includes a replaceable ceramic nozzle insert with forward water jet angled at 0 degrees or a fan jet. It is rated for 18 gpm at 4,000 psi up to 80 gpm at 2,500 psi. It includes a 1/2- to 1-inch sewer hose connection. It is operator friendly, with no maintenance required. 877-864-9394; www.sewerproshop.com



8 // SOIL SURGEON HYDROEXCAVATING TOOL

The Soil Surgeon hydroexcavating tool fits any sewer combination truck equipped with a telescoping 6- or 8-inch boom. The tool has a 1-inch water connection. The operator controls water pressure and power through truck controls. It has a 6-foot Tuff-Tube with handles to guide the unit down for potholing or side to side for trenching. Six jets boring inward cut the soil, while six jets boring outward bring the tube down. 949-363-1401; www.soilsurgeoninc.com

PRODUCT FOCUS

9 // SUPER PRODUCTS MUD DOG 700

Mud Dog 700 vacuum excavators from Super Products are designed for operator convenience and consistent performance to meet the challenges of applications from compact, urban projects to large-scale excavation. Units come standard as hydroexcavators with an optional air excavation package. They maximize legal payload, allowing operators to carry and accomplish more while still excavating safely in small work areas. The compact, versatile vacuum excavator features a 7-yard debris body and 600-gallon water tank. The unit comes standard as a dump body with an electric vibrator offering a 50-degree dump angle with the capability of dumping into a 48-inch container. Additionally, it is equipped with a rear-mounted, extendable, 8-inch-diameter boom that reaches 18 feet, has 270-degree rotation and pivots 10 degrees downward, which minimizes job site restoration and eliminates traffic congestion near roads. 800-837-9711; www.superproducts.com



10 // TORNADO GLOBAL HYDROVACS F4 ECO-LITE

The F4 ECO-LITE from Tornado Global Hydrovacs has a 12-cubic-yard mud tank and holds 1,550 gallons of freshwater. The unit is more than 7,000 pounds lighter than the company's older models and offers more than double the payload. The boom has a 342-degree rotation and 26-foot reach. The smaller F3 ECO-LITE is a 10-cubic-yard, 1,250-gallon tandem-axle unit that more than doubles older payload capacities. It features an 8-inch boom and 3,800 cfm blower. 877-340-8141; www.tornadotrucks.com



11 // TRUVAC FLXX

The TRUVAC FLXX is a vacuum excavator built to perform for utilities and contractors installing, replacing and repairing underground infrastructure, utilizing both air and hydroexcavation options for all conditions. This safe digging machine offers more power and maneuverability ideal in tight urban settings where street excavation jobs can include supporting, repairing and installing a city's water, sewer, power and telecommunications infrastructure. Designed to maximize productivity on the job, it boasts the highest legal payload capacity in a mid-size truck with a 10-cubic-yard debris body. In addition, it offers Park-n-Dig, an always-connected water source; safe and precise digging with the DigRight one-touch flow control technology; a water heater to dig in all types of weather/material conditions; a 22-foot boom reach with 340-degree rotation; and a DigFast option to maintain peak vacuuming performance and a clear airstream in the vacuum tube. 800-627-3171; www.truvac.com



12 // VACALL ALLEXCAVATE

High-pressure water and air jetting and standard intelligent controls, plus easy startup and operation, set Vacall AllExcavate machines apart. Water pumps generate 24.5 to 120 gpm and pressures to 3,000 psi with optional air excavation at 185 cfm and dual psi of 110 and 150. The water system, wand, control panel, tools and worker apparel are protected in a heated compartment. Standard AllSmartFlow CANbus intelligent control systems have a programmable LCD display that monitors engine, water and airflow and vacuum performance, allowing for precise boom and reel adjustments. Aluminum water tanks carry 1,000 to 1,300 gallons. Galvanized debris tanks have a supreme finish. Units use one engine to power the chassis and excavation functions, reducing serviced and operation costs. 800-382-8302; www.vacall.com





13 // WARTHOG NOZZLES BY STONEAGE SWITCHER

Removing calcified grease, mineral deposits and plaster concrete deposits can be challenging, time-consuming and stressful. Having the proper tool ensures confidence for success without repeated passes or an open cut dig. With two sets of jetting angles in one tool, there's no need to change nozzles or shut down equipment with the **Switcher** from **Warthog Nozzles by StoneAge**. One set of jet angles provides efficient pulling power and one set of jets is angled for highly effective cleaning, with the ability for the operator to switch between pulling or cleaning while still in the line. 866-795-1586; www.warthog-nozzles.com

» PIPE BURSTING TOOLS

14 // POW-R MOLE TRENCHLESS SOLUTIONS PD-33M



The PD-33M pipe bursting machine from Pow-R Mole Trenchless Solutions is designed to replace existing underground pipes 2 to 6 inches in diameter. Its nonslip, cylinder-activated jaws prevent cable damage while providing 60,000 pounds of pulling force. It offers a cost-effective alternative to open-cut excavation, reducing customer disruption and increasing company profits. The process replaces the existing pipe with a fused HDPE pipe, which eliminates all joints and allows the operator to pull through bends such as 45-degree fittings. This system is modular and can be easily disassembled and reassembled for manhole and basement applications. With a compact design and very small footprint of only 20 by 20 inches, this unit can be used in tight locations. 800-344-6653; www.powrmole.com

15 // RODDIE R8



The R8 pipe bursting system from RODDIE is easy to use and lightweight, can be set up vertically or horizontally, and can also be adjusted to use three different size cables. This unit can replace 1-, 2-, 3-, 4-, 6- and 8-inch pipes with ease and speed. Inexpensive cable grabbing inserts last 70 to 120 jobs, which reduces costs. High-quality tool steels on articulating bursting heads promote rare resistance for long-lasting service. The pulling rate is 8 feet per minute and is hydraulically powered from your tractor, providing a pulling force of 30 tons. The wireless remote system is reliable and has a signal strength that moves through any cellar wall. Maintaining the system is simple, as the user only needs to rinse off and re-grease six Zerk fittings. 888-406-3821; www.rodzieunderground.com

16 // SOURCE ONE ENVIRONMENTAL SILVERBACK XL



The SilverBack XL extended flexible coupling from Source One Environmental is specifically designed for pipe bursting and ramming connections. It connects clay-to-plastic and plastic-to-plastic applications, while accommodating 4- to 12-inch pipes. Advantages include fixing pipe alignment problems, protecting against thermal expansion and contraction, securing pipe from unstable ground and structures and resisting heavy earth loads and tensile stress. Its shear ring contains a heavy-duty shield with high-torque clamps. Its gasket is manufactured to the requirements of ASTM D5926 and C1173. It can be custom ordered to fit any common sewer pipe size. 877-450-3701; www.s1eonline.com

PRODUCT FOCUS

17 // TRIC TOOLS X30

The redesigned X30 puller from TRIC Tools includes a new top bridge (the piece with the upper grippers and the handle) that is reshaped to maximize strength and minimize weight, thereby reducing production cost. The end result is a pulling unit that is lighter by at least 10 pounds (75 versus 85 pounds), stronger where it needs to be and less expensive overall. 888-883-8742; www.trictools.com



» PIPE CUTTER

18 // PIPELINE RENEWAL TECHNOLOGIES IMS DRIVE CUTTER

The IMS Drive Cutter from Pipeline Renewal Technologies provides powerful air-driven speed and torque for reinstating laterals and performing rehab prep in mainlines. This versatile cutter is capable of self-propelled crawling up to 492 feet and articulation on three axes: arm swivel, rotation and cutter forward/back. Twin joystick controls allow precision cutting in lines ranging from 6 to 16 inches in diameter. Productivity is maximized on every job with visual feedback available from the self-cleaning color camera with LED lighting. Easily interchangeable bits allow the user to address a wide range of pipe materials and cutting tasks, including plunge cuts, brushing, milling and grinding. A remotely operated clamping arm ensures superior stability during rough cutting. This compact cutter weighs only 46 pounds and comes with a wheeled cable reel and compact video and control interface, making transportation to any job site simple. 866-765-2473; www.pipeliner.com



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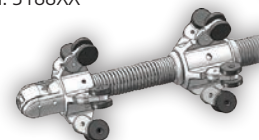
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PIPE BURSTING METHODS AND PROJECTS

// By Craig Mandli

CULVERT REHAB COMPLETED UNDER SMALL AIRPORT



PROBLEM / When it was discovered that the 60-inch-diameter stormwater drainage pipe under the South Haven Area Regional Airport's main runway and taxiway was caving in, a new 300-foot pipeline had to be installed to save the paved area without impacting flight operations. Located near Lake Michigan 20 miles north of Benton Harbor, Michigan, the general aviation municipal airport has an average of 74 flights a day of mostly single-engine aircraft. The main runway is paved and is 4,800 feet long and 75 feet wide. The other is a 3,300 long turf runway.

SOLUTION / SaniTite HP 48-inch-diameter pipe from Advanced Drainage Systems was sliplined into the old pipe. This smaller diameter would provide the space between the old and new pipe needed for grouting, but because of the new pipe's smooth inner wall, the water flow would actually be improved. The Federal Aviation Authority permits polypropylene pipe under airfield pavements per Item D-701, Pipe for Storm Drains and Culverts in AC 150/5370-10G (Standards for Specifying Construction of Airports).

RESULT / After the pipe was pushed into the old corrugated metal pipe, the space between the old and new pipe was filled using controlled low-strength material flowable fill grout. Grates were attached at each end. The job was done without interrupting runway traffic and completed within the 12 days allotted to the contractor. 800-821-6710; www.adspipe.com

PIPE BURSTING PROJECT OVERCOMES DIFFICULT JOB SITE LAYOUT



PROBLEM / The city of Spring Park, Minnesota, was faced with the task of replacing an undersized cast iron water main that serves a lakeside neighborhood. The project took place in a residential area right next to Lake Minnetonka. Soil conditions were very wet with high groundwater levels. Space was one of the biggest challenges working in backyards, many of which abutted the lake. Homeowner and yard disruption also needed to be kept to a minimum.

SOLUTION / Static pipe bursting was the choice for this project. A Grundoburst 800G static pipe bursting system from TT Technologies was selected to burst and replace the 2,300 feet of 6-inch cast iron water main and upsize it to 10-inch HDPE. Most of the bursting runs were around 300 feet in length. At its closest to the lake, the existing main came within 5 feet of the water's edge. In three instances during pipe bursting, the product pipe actually needed to be staged, floating in the water.

RESULT / Total bursting time per run was three to four hours from start to finish, with one bursting run per day. Digging the next pit, getting the machine set for the next run and staging pipe were done in advance of the following day. After the pipe bursting was complete, the main was chlorinated and pressure tested. Then services were installed and everything tied back together. 800-533-2078; www.tttechnologies.com c

5

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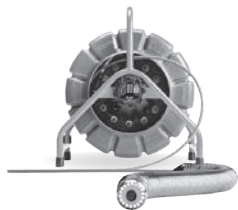


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PRODUCT SPOTLIGHT

BATTERY SYSTEM HELPS CAMERA GO ANYWHERE

By Craig Mandli

Inspection systems aren't truly "portable" as long as you have to plug them in. In an effort to make a truly portable camera, General Pipe Cleaners designed the Gen-Eye X-POD Plus sewer camera system to operate off its Gen-Pack battery adapter, while including a Wi-Fi transmitter and an on-screen distance counter as standard equipment to boost productivity and profitability.

"Because of the Gen-Pack battery adapter option, the X-POD Plus can go almost anywhere and solve a problem more easily for up to 12 hours on one charge," says Joe Kozlowski, director, marketing and communications for General Pipe Cleaners. "The Wi-Fi transmitter allows you to view a project remotely in real time and/or record it on your cellphone or other electronic device. With this feature, you can discuss the issue with clients or other colleagues to develop and execute the best solution. Having a distance counter quickly and easily allows you to see how the cable has traveled."

Fuse-protected to safeguard the equipment investment, the Gen-Pack battery adapter is also available separately. In addition, the built-in Wi-Fi transmitter lets the user view and record work on a cellphone or tablet. Using the system's USB port, they can also archive activity on handy flash drives. An on-screen distance counter also shows how far the camera has traveled down a line in feet or meters. For optimum accuracy, settings can be adjusted for full-size or mini-reel configurations.

The X-POD Plus Command Module includes a large 7-inch LCD color monitor with a sun screen for easy viewing in any location, one-



touch recording for speed and convenience, a 4X digital zoom for close-up inspections, voice-over recording for job site commentary, and a date and time stamp for work documentation. A durable docking arm supports the module and permits height and angle adjustments for the optimal viewing. The full-size package also includes a self-leveling color camera and 200 feet of Gel-Rod for inspecting 3- to 10-inch drainlines. The compact Mini-Reel carries 100 or 200 feet of Gel-Rod with mini color self-leveling camera for troubleshooting 2- and 3-inch lines.

"Because of the benefits the Gen-Eye X-POD Plus brings to the workplace, it is one of our best sellers," Kozlowski says. "It is a very popular product with great features and versatility." 800-245-6200; www.drainbrain.com

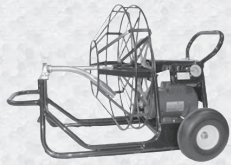
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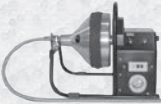
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Vacuum Truck Rentals welcomes new branch manager

Vacuum Truck Rentals announced Chris Wilson as the new branch manager of its Merrillville, Indiana, location. He brings 18 years' experience in the industrial construction and maintenance industries and will oversee the rentals and sales operations of the Indiana location. VTR has a fleet of over 800 trucks and 17 locations nationwide.



Chris Wilson

Vermeer Southwest acquires Vermeer Rocky Mountain

Vermeer Southwest acquired Vermeer Rocky Mountain and the new entity will become Vermeer Mountain West. Combining these two adjacent Vermeer industrial dealers creates a contiguous network of nine dealership locations spanning the mountain west

region of the U.S. Kyle Pieratt, who served as president and CEO of Vermeer Southwest, will continue to lead as the president and CEO of Vermeer Mountain West. The dealership will be headquartered in Chandler, Arizona, with branch locations in eight other states, including New Mexico, Nevada, Utah, Idaho, Montana, Texas and Washington.

Vac-Con announces CMI Equipment as new dealer

Vac-Con announced the addition of CMI Equipment to the Vac-Con dealer network. For more than three decades, the distributorship has provided sales, parts and service support to customers located in the state of Tennessee. CMI will offer the full portfolio of Vac-Con machines including combination sewer cleaners, jetters and hydroexcavators in both trailer and truck-mounted configurations.

Jeremy Alexander joins Sprayroq as president

Sprayroq announced it hired Jeremy Alexander as its new president. Previous to taking on his new role at Sprayroq, he was the director of marketing at Line-X. The addition of Alexander comes on the heels of the firm's recent rebranding with a new visual identity, coupled with the launch of a new website and relocation of the corporate headquarters in Alabama.

ACPA names Steven Hawkins as president

The American Concrete Pipe Association named Steven Hawkins as its new president. The appointment came after an extensive nationwide search and has been approved by the ACPA board of directors. Hawkins has more than 20 years in leadership roles in the concrete reinforcement industry, with the most recent as the director of marketing and membership at the Interlocking Concrete Pavement Institute in Chantilly, Virginia. Hawkins has a Bachelor of Arts in architecture, a Master of Arts in communications studies from the University of Kansas, and an executive MBA from Johns Hopkins University. **c**

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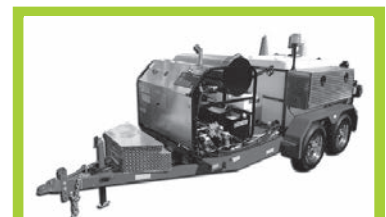
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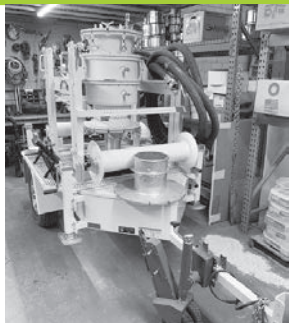


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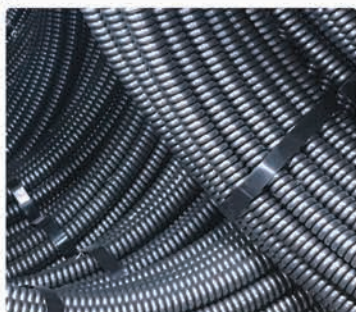
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