

Cleaner

FOR DRAIN AND PIPE CLEANING, INSPECTION AND REHABILITATION PROFESSIONALS

NOVEMBER 2020
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ON THE COVER

G&B Services Plumbing and Drain Cleaning, located in Bowie, Maryland, operates in a competitive area, but owner Greg Beall doesn't let that worry him. He says the company's success boils down to two simple things: investing in quality, productive equipment, and attracting and retaining great employees to run those machines. That strategy won't ever change. (Photography by John Canan)

COMING IN DECEMBER

Business Diversification - Septic Pumping, Plumbing

MONEY MACHINES: A trailer jetter that delivers as promised

BETTER BUSINESS: Power phrases for difficult conversations

DIVERSIFICATION: Safe excavation for pipe spot repair

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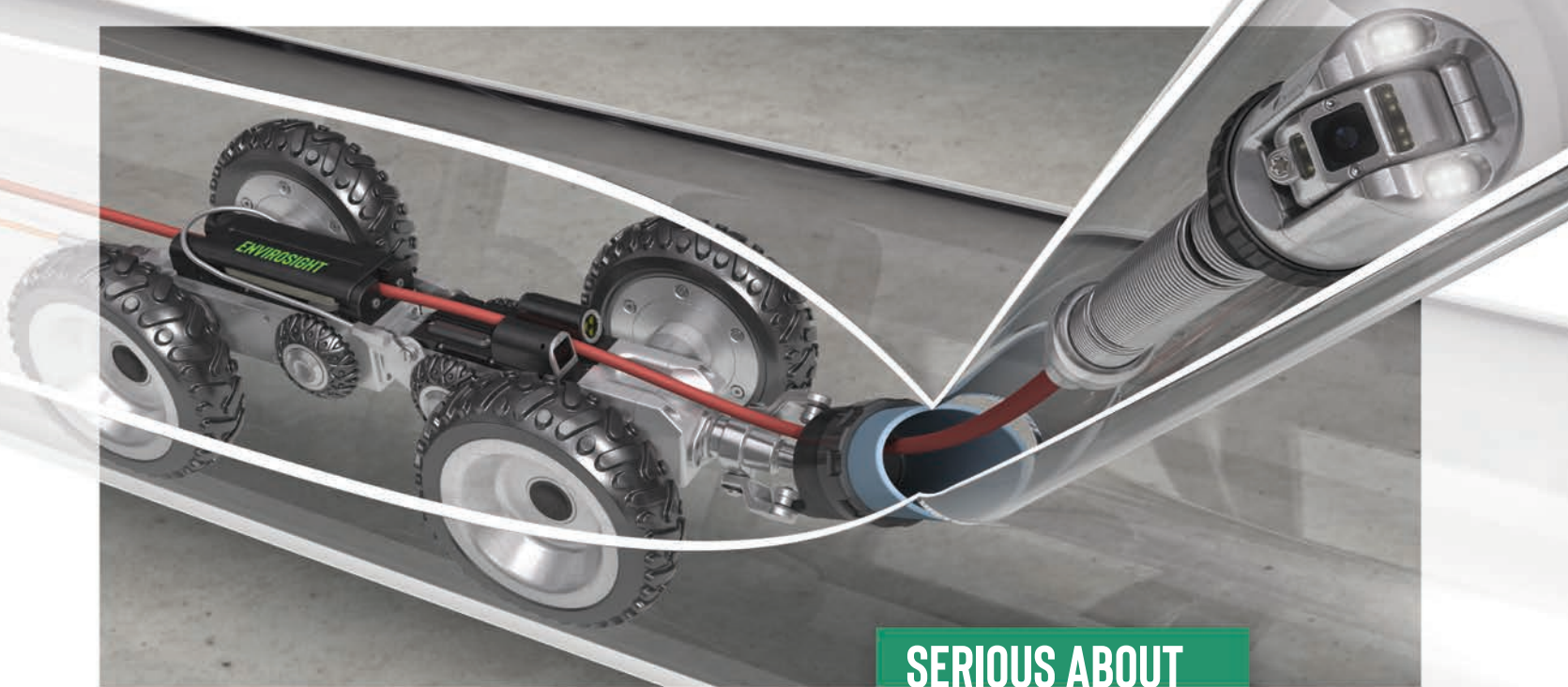
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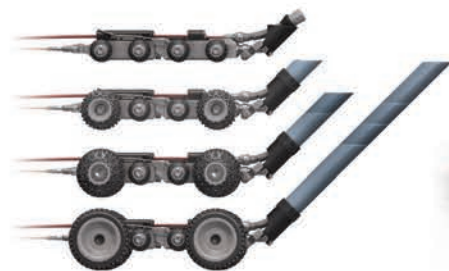


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Published monthly by COLE Publishing, Inc.

1720 Maple Lake Dam Rd., PO Box 220, Three Lakes, WI 54562

Call toll-free 800-257-7222 | Outside of U.S. or Canada call 715-546-3346

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

Website: www.cleaner.com | Email: info@cleaner.com | Fax: 715-546-3786

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CONTROLLED CIRCULATION: 21,500 per month
 This figure includes both U.S. and international distribution.

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"EVERYONE TALKS ABOUT SUPPORT, NUFLOW ACTUALLY PROVIDES IT."

Profile

NuFlow Certified Contractor

Jayson Arendall saw the need to expand and diversify his leak detection business. He chose NuFlow in March of 2019 because of their superior products and reputation for outstanding support.

"The culture of NuFlow is what makes this work. They give you a sense of family with the type of support they provide."

The NuFlow team worked with Jayson to get him up and running, first with hands on technical training and then following up with onsite support.

"One of my very first jobs was really technical. I called NuFlow and they sent two guys out to help me bid and execute the job. Everyone talks about support, NuFlow actually provides it."

"We are already profitable on our investment, and now we're getting bigger contract jobs and looking to expand. We love what we are doing!"



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Taking Care

It's easy to not prioritize taking care of yourself, but your health is not something to take for granted

After coming out of retirement during the 2019 season to rejoin his former team, Seattle Seahawks running back Marshawn Lynch was asked if he'd return for 2020. He brushed off the question and instead gave some advice to younger players: "Take care of y'all bodies, take care of y'all chicken, and take care of y'all mentals." (For the uninitiated, by "chicken," he means money.)

Even if you're not a fan of Beast Mode, or of football in general, the man has a point and those wise words can be applied to running a business too. While Lynch was urging young football players to be responsible with their money and their health in order to enjoy

life during and after football, the same advice holds true for anyone still in the workforce: You need to take care of yourself.

For professional athletes, their bodies are their work — their livelihood literally depends on how well they treat their body. Your job is not as physical as that of an NFL running back, but it's a lot more physical than some. You need to be healthy to do your job well.

In several of our publications, I've read stories that recount a team of family and staff members taking on major responsibilities when the owner was seriously injured and out of commission. If you're laid up for several weeks, what happens to your company? A lot depends on you being able to do your job — your income, your family, your employees and your business's reputation.

Don't wait until an injury or a health scare forces you to the sidelines. Commit to taking care of yourself the way you commit to your business.

Of course, not all accidents can be prevented. Exercising six days a week and sleeping eight hours every night can't save you from everything. But staying healthy and getting enough rest puts you in the best position to avoid small injuries and helps prevent you from getting sick.

Your health is so undeniably important. It hardly matters how well your business does or how much money you make if you're not healthy enough to enjoy it and live how you want to.

This is the time of year for giving thanks. If "good health" isn't on your list, you should evaluate what you need to change to start feeling better, and make it a point to invest more in your health.

Making yourself a priority is not an easy thing for everyone. When every waking moment is dedicated to growing the business you are passionate about, it can seem like taking time for yourself is selfish or even unnecessary.

But the best thing you can possibly do for the business and the people who count on you is to make the time to take care of yourself and stay healthy — so that they can continue to count on you.

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



Kim Peterson

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EMPLOYEES

Promote Without Upsetting the Team

You want to give supervisory positions to the best candidates on your crew, but it's not necessarily that simple. Just because the best candidate is promoted doesn't mean that other people who wanted the job — and even some who didn't — won't be miffed. As this online exclusive explains, there's a way to develop an employee promotion strategy that can keep everyone on the team satisfied.

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OVERHEARD ONLINE

"If you say yes to every opportunity that comes your way, you place your own mental and physical well-being in jeopardy. And worse, as you take on more obligations, you risk becoming unfocused or sloppy in your work."

— How Learning to Say 'No' Can Grow Your Bottom Line

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EQUIPMENT COSTS

Data Drives Better Machine Life Cycle Decision-Making

When managing a fleet of heavy equipment, it's vital to carefully study the numbers so that you're not wastefully spending money on an unproductive machine. This online exclusive explains more.

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SNAPSHOT

A Gallery of Cleaners

Every so often we publish an online photo gallery for shots of *Cleaner's* featured contractors that weren't able to fit in the pages of the magazine. Check out this most recent gallery of contractors that were profiled in the first half of 2020. cleaner.com/featured



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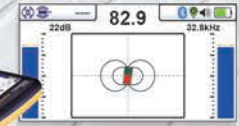
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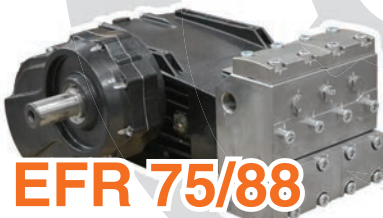
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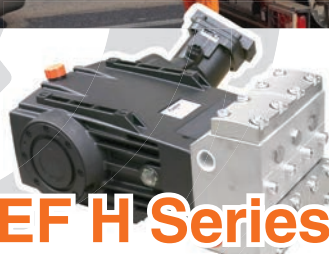
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It is rated up to 288 ftlb. of torque, and 220 ftlb. of continuous torque. Kit includes: S906-1 Hi-Torque Motor; 1" Hub; 6", 8", 10", 12" HD Concave Saw Blades; 6", 8" Cage Skid Single Size; New Set Of 10" and 12" Fins



SHYK-1 NEW Puma Standard Kit

Puma Kit comes with HD 3/16" thick concave saws and skids for 6" - 12" lines. Cutter holds flows 40 - 80 GPM and pressures 1500 - 3000 PSI. It is rated up to 225 ftlb. of torque, and 195 ftlb. of continuous torque. Kit comes with SHYM-1 Puma Motor; 1" Hub; 6", 8", 10", 12" HD Concave Saw Blade; 6", 8" Cage Skid Single Size; New Set Of 10" and 12" Fin



SRRK-1H Super Red Hot Kit

New improved larger front steel bearing on the Red Hot Motor increases life, reduces maintenance and makes this motor able to withstand the shock produced by heavy cleaning. Round profile of this cutter allows it to enter lines from 4" and up. 40 - 80 GPM and pressures 2000 - 3000 PSI.

Produces 225 ftlb. of torque, and 175 ftlb. continuous. Kit comes with SRRK-1H Red Hot Motor; 1" Saw Blade Hub; 6", 8", 10", 12" HD Concave Saw Blade; 6", 8" Cage Skid Single Size; new Set of 10" & 12" Fins

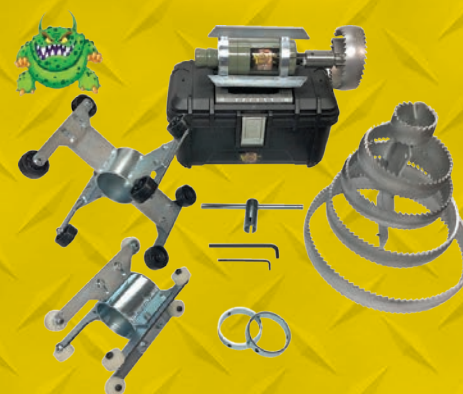


SRRK-1 Super Green Meanie Green Kit

The round profile allows the cutter to enter sewer lines 4" and up. Motor handles flows from 40 - 80 GPM and pressures 2000 - 3000 PSI.

Rated up to 235 ftlb. of torque, and 175 ftlb. of continuous torque.

Kit comes with SRRK-1P Super Green Motor; 1" Saw Blade Hub; 6", 8", 10", 12" HD Concave Saw Blade; 6", 8" Cage Skid Single Size; Set Of 10" & 12" Fins. Motor fits Green wheeled skids you may have.



SRRK-4-15W Super Green Meanie Citizen Kit

Large Range Kit gives you saws and skids for 4" to 15" pipe sizes. Cutter handles flows 40 - 80 GPM and pressures 2000 - 3000 PSI.

Rated up to maximum 235 ftlb. of torque, and 175 ftlb. of continuous torque. Kit comes with SRRK-1P Super Green Motor; 1" Saw Blade Hub; 4", 6", 8", 10", 12", 15" HD Concave Saw Blade; Set of 4" Steel Rings; 6" Cage Skid; 8"-10" Adjustable Wheel Skid; 12"-15" Adjustable Wheel Skid; Allen Wrench and Screws



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STRONG ROOTS

Contractor creates a sustainable, multigenerational business through training, engaging and empowering its staff

By Suzan Chin-Taylor // Photography by David Sinclair and John Canan

Started by Bill Pleasants in 1964 with a truck and front-end loader, Pleasants Construction has expanded into one of the largest utility, land development, waste management and trenchless rehabilitation contracting firms in the Washington, D.C., metro area.

Today, the company is run by Don Pleasants, Bill Pleasants' son. Core services include earthwork, site development, demolition, paving, soil stabilization, site utility installation, material processing and underground utility rehabilitation.

Due to long-standing relationships with many local municipalities and sewer authorities — such as WSSC Water — Pleasants Construction was encouraged to introduce new technologies and solutions to these high-profile clients. Consequently, the company has been awarded projects that give it an opportunity to stretch its construction, innovation and problem-solving skills.

The addition of an underground rehabilitation and trenchless technology-based division was a natural progression, as the firm has always been heavily involved in local utility contracting, installing sewer, water and storm drain systems. The underground rehabilitation division has a team of 35. Pleasants employs approximately 370 people in its construction departments, with a total of 680 staff members across all its divisions.



Pleasants Construction Inc.

LOCATION: Clarksburg and Capitol Heights, Maryland

OWNER: Don Pleasants

EMPLOYEES: Underground rehabilitation division: 35; total staff: 680

SERVICES: Underground rehabilitation, site utilities, earthwork, site development, demolition, paving, soil cement/soil stabilization, material processing

SERVICE AREA: Greater Washington, D.C., metropolitan region, Maryland, Delaware, West Virginia, Virginia

WEBSITE: www.pleasantsconstruction.com

⇒ A crew from Maryland-based Pleasants Construction installs a storm drain under a roadway in rural Maryland.



The rehab division is a certified installer of Reline America's trenchless products. Pleasants' ownership interest in Reline America's UV glass-reinforced polyester lining equipment has resulted in a strategic alliance, providing a critical advantage to the division. In addition to high-quality lining installation, Pleasants provides its clients with asset assessment and consulting services to educate and deliver best-fit solutions to local municipalities' underground rehabilitation issues. Other services include manhole rehabilitation, point repairs, pipeline cleaning and CCTV inspection.

TAKING ON TOUGH JOBS

Pleasants enjoys taking on challenging projects that other firms may shy away from, especially in stormwater rehabilitation locations where access may be particularly challenging.

Strengthened by its construction roots and vast fleet of equipment, Pleasants is highly competitive on Department of Transportation and storm drainage projects. Many of these projects require unusual approaches to access points, perform pipe lining or execute other trenchless rehabilitation methods that are environmentally challenging. Obstacles often include extreme topography, existing subdivision landscaping or roadway traffic that would create significant community impact if blocked.

One such project required the installation of a 72-inch liner in a corrugated metal pipe drainage line, situated 35 feet deep in an area with 2:1 side slopes, on a roadway with nearly impossible standard equipment access. Deploying equipment and the liner to the site without building a roadway would have created tremendous environmental disturbance. Getting to the location required some ingenuity, and this is where a construction background came in handy.

"We figured out a way to move the liner from the top of the slope by actually sliding it into the host pipe from the road surface itself, using a series of slides and rollers," Don Pleasants says. "Pulling in the liner this way, we were able to operate the equipment, deploy the light train and cure it from the road surface, which was quite a feat due to the sloping topography and the depth of the line itself."

Many of the sanitary collections system projects Pleasants Construction has taken on have involved working in environmentally sensitive areas, where pipelines are in streambeds or low-lying



▲ Jeremy Houser (left) and Julio Ramos feed a new 18-inch-diameter, 311-foot non-styrene UV-cured Alphaliner into a stormwater line in McLean, Virginia.

“Our ability to access these areas more efficiently than a lot of the competition ... **allows us to get projects completed faster and save the asset owner money.**”

Eric Newquist

flood plain areas. Many of the sewer lines running through these areas were constructed 60 years ago and are now experiencing joint failure, root intrusion and offset issues that are just a natural part of infrastructure aging.

“Our ability to access these areas more efficiently than a lot of the competition — who perform rehabilitation using methods other than UV GRP lining technology — allows us to get projects completed faster and save the asset owner money, mitigate environmental risk, as well as eliminate or extensively limit the level of disruption to private property and the community,” says Eric Newquist, executive vice president of Pleasants.

“The capacities we have — not just in the civil rehabilitation side of our business, but also in the heavy civil construction side — allow us to internalize multiple skill sets to solve many problems for our customers.”

Many contractors can perform just one or two parts of a project, such as rehabilitation, and must outsource or find other solutions to handle the civil work that may be required on some extensive, complex jobs, such as paving, grading and erosion control. Pleasants has the capability to be a single point of contact to perform all tasks needed to complete a project from inception to completion, including the civil work. “This enables us to save the customer money and time, and this unique selling proposition has been one of our keys to success,” Newquist says.

TIMING IS EVERYTHING

Pleasants is always looking for better ways to serve its customers, and the company brings on additional services, tools and technology when the market expresses the need and the additions will be profitable. Not looking to be regarded as a commodity service provider, they seek opportunities that enable them to leverage existing skill sets.

Refer a friend

As the “silver tsunami” extends its effect upon trade industries and many firms are finding it challenging to recruit and retain new staff, Pleasants Construction has come up with a solution that is delivering surprisingly positive results. In addition to its extensive training program, the Pleasants Learning Academy, another method for recruiting and retaining local talent is through an internal referral program.

“We found that a lot of our best employees are coming as referrals from our current staff. We started this because we believe that the people who work here want other quality people to work here as well and will invite people they feel would fit our culture and who they feel good about referring,” says Eric Newquist, executive vice president of Pleasants.

The program offers a financial incentive for all new hires referred who stay with the company for at least 90 days. Because it is referral-based, it creates ownership and connection, as well as an instant feeling of community because the new hire already knows someone within the company.

The business also likes to promote from within to cultivate a culture of opportunity. This has created a legacy of retention, with numerous families in the area having multiple generations of members that have come to work for Pleasants — fathers, mothers, sons, grandsons and other extended family. In fact, one of its heavy-equipment mechanics, now approaching retirement in his early 70s, is training his grandson to be a mechanic and gets to work with him each day.

“It’s a great thing to see not just one or two of these families here in our company, but many, which is a testament to the fact that we truly are a family business on so many levels.”

The firm is highly active in and supportive of its local municipalities and engineering firms. They perform lunch-and-learn educational presentations, participate in trade shows and offer job site visits. Although a great deal of its networking and relationship building has been done face-to-face, Pleasants is ready to embrace the new paradigm of virtual selling. It's preparing to offer more online learning webinars and related communication platforms to remain safely engaged with its prospects and client base.

Although the market may be changing, one thing hasn't: Pleasants' brand identity and public perception. Great attention to detail is a hallmark of the organization, from the cleanliness and maintenance of its fleet to how organized its teams appear, its uniforms and especially the customer experience. Pleasants has attained a Best in Class rating for its safety — something that doesn't happen by accident.

"We work hard at that," Newquist says, "and that means not everyone can work for us. We want people who take our brand seriously — the vehicles we drive and how we are looked at, conduct ourselves, treat our customers, respond to our customers and work together as a team. It's a holistic approach to branding, and every member of the team is part



▲ A UV light train sits ready to be pulled through a liner.

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INVESTING IN QUALITY

The effort is working. Mike Hoffmaster, business development manager for Pleasants, says that with the company’s talented team, work ethic and customer experience, “municipalities always look to come back and do business with Pleasants. We are invited to bid constantly, even on projects that sometimes may not be in our wheelhouse. ... They seek us out because they know how we approach projects and that we will see things through and find a way to solve their issues.”

Creating a workplace culture that attracts the brightest and best talent is no small task with a large organization such as Pleasants. To accomplish and sustain this, the firm draws heavily upon one of its core values: investing in its employees. Recognizing that engaging and empowering a team to learn, grow and prosper creates a workplace that naturally retains star employees, the company established the Pleasants Learning Academy.

Pleasants Learning Academy is an extensive, dynamic training program that provides skills training and courses from onboarding all the way through executive leadership. Topics include decision-

making, negotiating skills, managing a company, developing a handbook, performing reviews, interviewing, recruitment and an increasing number of best practices courses that cover the broad range of needs for all of the company’s various business units and divisions.

At present, there are almost 200 training modules available. Some are offered in person, but many are online or video-based, as staff is spread across the region. During downtime or rain days, the staff takes full advantage of the training available and appreciates the value and investment that Pleasants continues to make in its employees’ career.

“We realized that if we want a quality workforce, we have to invest in them by training them,” Newquist says. “We as business owners can’t complain that we can’t find or attract quality people or that they are not able to do something for lack of know-how. This investment has reaped great rewards and has been an incredibly positive addition to our organization, and I believe it will continue to bear a strong return on investment generationally.”

The Pleasants Learning Academy is headed by Rick Centra, a seasoned training veteran. His experience includes being a military training officer and a private sector trainer and program developer for a large grocery store chain and homebuilding development firm.



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“We want people who take our brand seriously - the vehicles we drive and how we are looked at, conduct ourselves, treat our customers, respond to our customers and work together as a team.”

Eric Newquist



« Crew members secure an air hose to a packer in preparation to line a stormwater pipe.

5

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Pleasants Construction is often awarded projects for the DOT, municipalities and sewer authorities, like storm drain installation, because the company can do the job from start to finish. Below, the paving division resurfaces a road in Boyds, Maryland.



“Municipalities always look to come back and do business with Pleasants. We are invited to bid constantly, even on projects that sometimes may not be in our wheelhouse.”

Mike Hoffmaster

He has developed course material for Pleasants from this experience, which also incorporates related publications along with input from senior members of the company leadership.

The company encourages staff members interested in developing new skills to ask their direct supervisor to approve participation in certain course levels. The diversity of courses allows team members to explore a potential new career path, which will help them decide if a certain position or direction is what they want to pursue. Managers also encourage individual members who they feel can be future stars in the organization and might need to be channeled in a certain direction to give them the best growth opportunity.

RETAINING THE BEST

These opportunities for all company staff make training a powerful retention tool and create a happy, productive workplace culture that leads to better customer service. The Pleasants Learning Academy has contributed to a safer and better-organized team that is more efficient and productive. Field training for more technical skills is also available, for which Pleasants calls upon valued trade partners.

Managing such a large organization can be challenging, but both Pleasants and Newquist agree that keeping departments that work closely together accountable to each other with open communication builds community. The firm has its eye squarely on the future with the intention to be generationally successful.

“We try to promote from within,” Newquist says. “Our company is one of opportunity. People can be hired as the front desk receptionist



and five years later could be working in the project management office. If employees are good-quality folks, we’re going to find a spot for them in the organization as opportunities arise.”

Pleasants has distinguished itself as a firm driven by its core values of integrity, excellence and safety, and it offers a highly prized workplace culture and environment. Its commitment to teamwork, training and focus consistently creates tremendous career opportunities for its members. And its consistent positive customer experience means clients can rely on the firm for excellence across its business units. It’s all part of an encompassing vision and strategy, Newquist says.

“I believe one of the things that separates our company from many others is that we think about the future, plan financially and consider the big picture long-term. Immediate satisfaction for today may be important, but it’s not primary.” **c**

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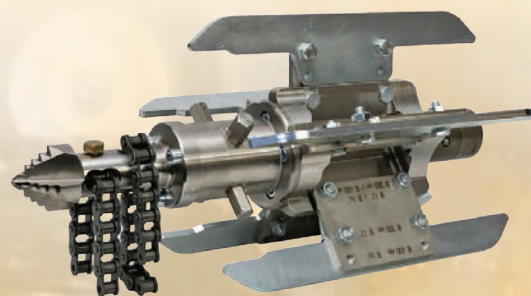
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- Bumpers on bottom to protect tips & lines

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Under Pressure

Even the most durable pipe materials are vulnerable to damage from overly aggressive waterjetting

By Giles Lambertson

Did you know that high-pressure jetting of sewer pipes can damage some pipe materials?

“All sewer pipe can be damaged,” says Kent Carlson, vice president of the National Clay Pipe Institute. Whether fabricated out of clay, plastic, iron, fiberglass, asbestos or some other material, a sewer pipe ultimately can only withstand so much pinpoint pressure from a nozzle before failing.

The real question, Carlson says, is *how much* assault a segment of pipe can withstand before it fails. The answer varies from product to product, and therein lies a problem for cleaners and those who maintain sewer systems.

Because Carlson is an official of the national organization for clay pipe manufacturers, you may be thinking: I can see where this is going. But you would be wrong. Carlson spent 30-plus years with the Los Angeles sewer department, where he was the longtime operations manager. The man knows his sewer pipe.

Carlson joined the U.S. Navy right out of high school in 1978. After his Navy stint, he worked in shipyards up and down the West Coast before becoming an LA municipal employee as a machinist in a water treatment plant. Before long, he transferred to the wastewater side of municipal services and began his rise to the top. Two years ago, the 60-year-old industry veteran took his accumulated expertise to the National Clay Pipe Institute. He also serves on three ASTM technical committees.

The LA collections system — deemed the world’s largest — proved to be an expansive training ground for Carlson. The system contains 6,700 miles of wastewater collection pipe, the oldest of which dates to 1883. Working there, Carlson was able to become thoroughly acquainted with the industry and use his machinist skills to craft pipe-cleaning tools.

“Thirty-three years ago, there wasn’t much going on in sewer cleaning,” he recalls. “We had rudimentary nozzles, mechanical routers, hand rods — everything the same since the 1940s. The sewer industry was stagnant for a long time in respect to cleaning.”

As a submarine systems machinist, Carlson was immersed in the technology of handling human waste in an undersea craft. It was, he says, “very technical work.” Tutored in the necessity of keeping systems operating, even when they failed in the middle of the ocean, he brought to his work in LA a zeal for finding solutions.

“I love prototyping,” Carlson says. “At the city of LA, I started making my own designs for nozzles. I had my own in-house testing facility and constantly tweaked flow characteristics of nozzles so they would clean more efficiently. That was the thing: to have them clean more efficiently.”

Along the way, he began to see differences in the durability of pipe products. LA’s sewer system is 95% vitrified clay, but Carlson was open to any type of new or replacement pipe. The problem was that other types didn’t hold up as well in testing. “We had an

“I think a lot of people don’t know. Because they don’t know the impact of jetting on different pipes, **they damage pipes and don’t even realize it.**”

Kent Carlson

« Flexible plastic piping like this truss pipe can be damaged by newer cleaning technology, like the nozzle damage shown here. (Photos courtesy of Kent Carlson)



» This SDR-35 PVC pipe was used in a demonstration to test pipe damage. Those holes in the pipe appeared after just 10 seconds of average pressure, 60 gpm at 2,000 psi.

» A proofing skid keeps the nozzle centered in this vitrified clay pipe, helping to clean the pipe periphery equally. It also helps guide the nozzle, and indicates when there is a blockage.



aggressive approach to cleaning. We would be given other types of pipe — PVC, HDPE, plastic truss and so on. We'd run our cleaning tools through the pipe and it wouldn't survive the test."

The dilemma was not that the other kinds of pipe couldn't safely carry sewage or function satisfactorily for decades. Manufacturers claimed their products were convenient to install, compatible with other pipe materials, or resistant to corrosion and chemicals — and their claims were true. The difficulty was the pipe couldn't withstand rigorous maintenance routines, including mechanical, hydromechanical and high-velocity hydro cleaning.

Hydromechanical cutters and ceramic nozzles today are "incredibly more efficient and deliver water with more impact force," Carlson says. "They can chop up roots and evacuate calcium. The number of jets has been reduced, but more water is coming out of each one. The angles have been increased from 6 degrees to much higher, reducing the jet stream distance to the pipe surface and increasing the force when the water strikes."

All these advancements, however, are a double-edged sword, according to Carlson. "The dynamics changed. You started seeing warnings coming from agencies like the EPA saying, 'Be careful. Nozzles can damage pipe.'" Yet the warnings were so muted, they were frequently unheard. Even today, the damage warnings are hard to find. The following are some that Carlson has ferreted out in recent years:

- Cured-in-place pipe "should never be mechanically cleaned," according to an Insituform Technologies cleaning guide. More to the point, the guide says when CIPP is jetted, "the nozzle pressure should never exceed 2,000 psi or damage could occur."
- Glass-reinforced polyester, or fiberglass, pipe should be jetted "with due care to prevent the inner surface of the pipes from being damaged," according to an operator's manual by

fiberglass pipe manufacturer Amiblu. To prevent damage, the manual goes on to limit pressure to the 870 to 1,450 psi range. It also says operators should "avoid stopping of the nozzle" during operation — blasting in place — and that the angle of the stream of water should be kept as small as possible.

- Plastic pipe used in gravity sewer systems should be jetted "with utmost care," according to an instruction manual produced by nozzle distributor Enz USA. "Due to the new thin-walled pipe products being installed these days, possible pipe damage can occur if used with too high a water pressure. As a rough guideline, do not exceed 1,400 psi of water pressure at the tool."

So, there are red flags out there. While all pipes can be damaged by waterjetting, some pipes are particularly endangered when pressures and water volume are in excess of 2,000 psi at 60 gpm — an average jetting pressure and flow. High-pressure jets can penetrate even vitrified clay pipe, though its manufacturers claim a damaging stream would have to exceed 5,000 psi flowing at more than 125 gpm.

This low-key treatment of jetting's damaging potential sets operators up for failure. "I think a lot of people don't know," Carlson says. "Because they don't know the impact of jetting on different pipes, they damage pipes and don't even realize it. There's a new generation of cleaning folk and they don't know it."

The fact is a sewer system using a mix of pipe is problematic when it comes time to clean it. "Spot repairs using pipe of a different material than the original are especially vulnerable to being damaged. Unless a system's repair group is joined at the hip with the IT group that keeps the database current, the cleaning crew doesn't know it's there," Carlson says. He notes that the Environmental Protection

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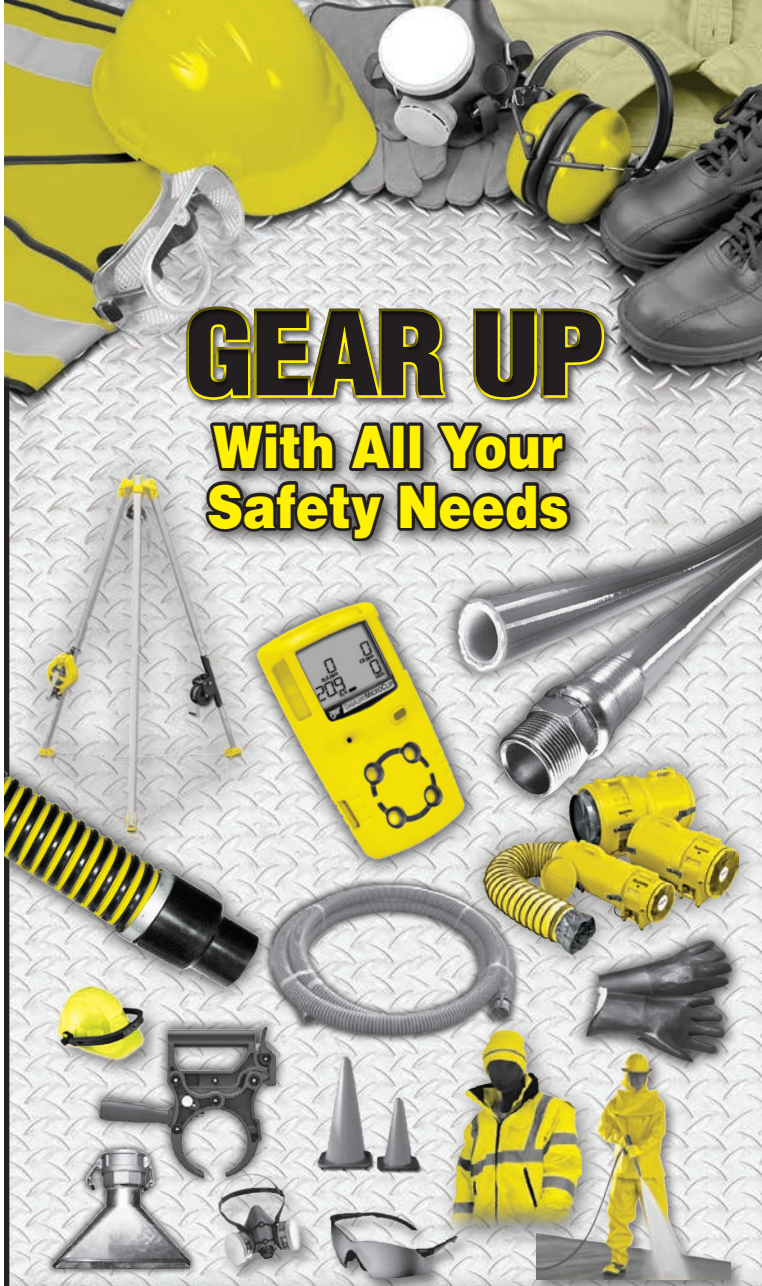


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Agency has addressed this issue. An agency guide on maintaining sanitary sewer systems states that “a suitable pipe identification system should be in place to warn the operator where plastic pipe has been installed.”

Even when a cleaning crew correctly identifies a vulnerable length of sewer line in a system, it has to switch out a nozzle or throttle down the pressure to proceed. “Then you have lost the cleaning efficiency of that nozzle,” Carlson says. Consequently, at the end of a job, some segments of a system have been restored to full capacity while other segments are only partly cleaned.

“I do not blame the nozzle folks,” Carlson says of the dilemma. On the other hand, he believes pipe manufacturers should more fully disclose the danger to their products from certain cleaning procedures and equipment. “I’ve been looking at this a long time, and I don’t see a pattern of disclosure. But in the end, it’s up to owners of systems to research the matter and make sure a cleaning process works for them and doesn’t mess up their pipes.”

So the moral is: Know thy sewer pipe and have it cleaned in a way that will do it no harm. **c**



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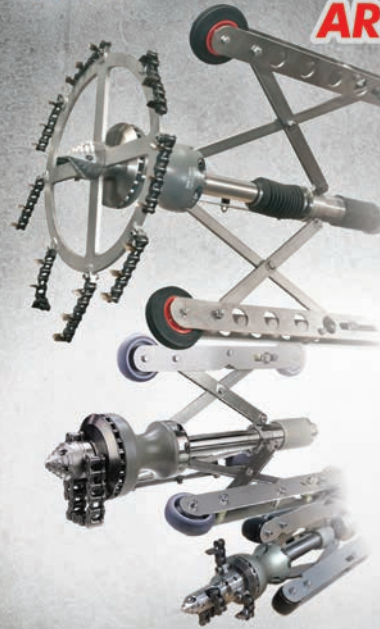
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EDITOR'S NOTE: This month's Best of the Decade first appeared in the July 2018 issue of *Cleaner* and has since been one of the most-read Safety First articles on Cleaner.com.



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Teamwork Ensures Safety

Safe hydroexcavation takes two sets of eyes and an understanding of all potential risks

By Jared Raney

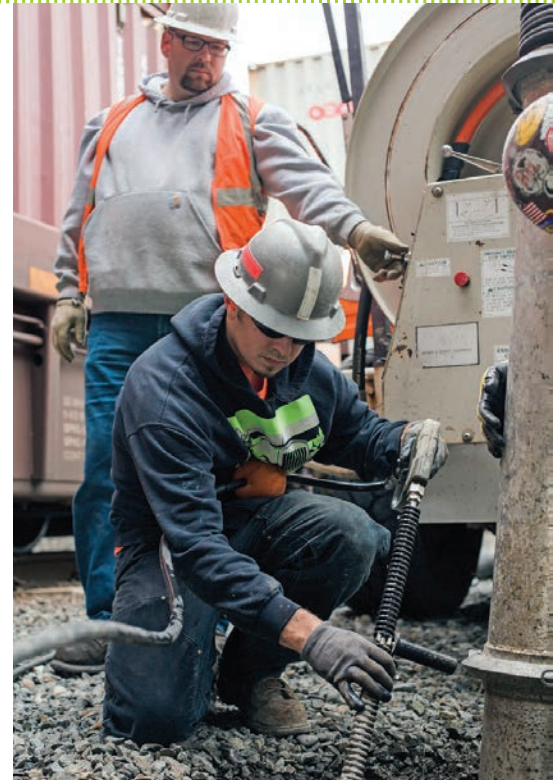
Hydroexcavation is often promoted as a safer method of excavation — and in almost all ways, it is. But that doesn't mean it is without its own dangers, of which operators must be constantly aware.

As with any job site, working with hydrovac trucks has the potential for catastrophe if the proper precautions are ignored. The best way to keep operators and the public safe is to simply have a second pair of eyes on the job.

"That's the biggest thing — just having that extra guy around to watch your back," says Anthony Chavez, safety compliance officer for Davids Hydro Vac in White Bear Lake, Minnesota. "With hydroexcavation, 90% of the time while you're digging, you're staring at the ground. You try to keep your head on a swivel as much as you can, but there's a lot of different dangers that go on around you."

One of the biggest concerns is boom clearance. While operators are focused on the ground before them, booms are stretching far overhead and can come in contact with power lines or other obstacles if not closely monitored. And while it is less likely than with traditional digging equipment, damaging underground utilities is still possible, which brings gas lines and other utilities into play, in addition to electricity.

» Hydroexcavation safety takes planning and teamwork. Having a second person on site to watch the operator and keep an eye on everything is critical. (Photography by David Ryder)



Bystanders present another potential safety issue. Unlike a typical construction or excavation site with backhoes and bulldozers, a job site with just a hydroexcavator doesn't always raise the same red flag in the minds of bystanders.

"If you're in a residential area, there could be commuters," Chavez says. "A lot of times you'll get the wanderers who come up and just want to know what you guys are doing. If you don't have that extra guy, they may go into an area that you've already excavated — they may not pay attention to the caution tape or the cones that you have set up."

Proper training and apprenticeship are also important. It doesn't matter how many guys are on scene if they don't know what they're doing.

"That second guy in the truck is going to know all the safety features on the truck. If anything happens to that operator, you always have that backup person who's going to know how to operate that truck. So he can shut it down if need be, he can pull the operator out of it, so you always have that safety backup."

Of course, OSHA training is required, but for Chavez, that's the bare minimum. He also has their spotters go through union training on flagging and hand signal procedure, and the operators

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spend at least six months to a year riding along with senior operators before going out on their own.

"We could do a crash course and have the guys out there operating a truck, just because they have a CDL, within a month. That's just not the way we do it," Chavez says. "The less high-profile customer may not require certain training. We just go ahead and do the training regardless, across the board, with all of our guys."

Lastly, Davids Hydro Vac has a job site checklist, something that is typical on many construction and job sites across the industry, but may be overlooked when it comes to hydroexcavating.

"When you handle it this way, there's no downtime. You don't have to stop the whole construction site or excavation. They can keep working and keep doing what they need to do," Chavez says. "The biggest thing is making sure that our guys and the guys they're working for are making it home safely."



⚡ One of the biggest concerns in hydroexcavation is boom clearance. While operators are focused on the ground before them, booms are stretching far overhead and can come in contact with power lines or other obstacles if not closely monitored.

If you don't think there is any risk for operators or contractors, consider the Ontario hydrovac company that was fined \$285,000 in February after one of its workers was killed when he hit an overhead electrical line with his hydrovac truck's boom.

Reports say that there was no secondary monitoring of the boom's movement, and operators were so focused that they didn't realize the boom was too close to the lines.

"The fines, that's money. Somebody getting injured, that's

somebody's life, their livelihood, their career," Chavez says. "It's not the money standpoint; it's that somebody's life could get taken away for a simple bonehead mistake if somebody's not paying attention or taking it for granted that they have the clearance."

With very little downside and plenty of upside, all hydroexcavation work should be accompanied by a second pair of eyes. **c**

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GAINING AN EDGE

The right people running the best equipment sets G&B Services apart

By Ken Wysocky // Photography by John Canan

Many factors have helped G&B Services Plumbing and Drain Cleaning thrive in a highly competitive East Coast market. But owner Greg Beall says the company's success essentially boils down to two simple things: investing in productive and reliable machines that provide a competitive edge, then attracting and retaining quality employees to run them.

« A G&B Services crew clears swimming pool drains with a Picote Maxi Miller machine at an apartment complex in Falls Church, Virginia.

“Over the years, I’ve learned that you’re only as good as the equipment you have and the people running it,” says Beall, age 48, who established the Bowie, Maryland-based company in 2000. “Anyone can buy a jetting machine. You can even buy a Learjet, too, if you have enough money, but that doesn’t mean you know how to operate either of them.

“Buying the best equipment and hiring experienced, knowledgeable employees give me the best chance to get called into top-of-the-line office buildings because those customers know I have the equipment and the people to get the job done. If you don’t have the best equipment, how can you expect to do the best work?”

As an example of an investment that helped bring in work cleaning drains in larger apartment buildings, Beall points to the Maxi Miller from Picote Solutions. Designed to clear roots and descale pipes, the tool also can remove concrete from pipelines, he says.

“The Maxi Miller is my go-to machine because it always gets me out of bad situations. It can do everything from removing concrete in lines to retrieving a broken (drain machine) cable in minutes.


“It paid for itself in the first week I owned it. We keep finding out by accident all the things it can do that it wasn’t even designed to do. I’m pretty sure it could even make me a sandwich if I could figure out the right button to push.”

Today, commercial drain cleaning generates about 50% of the company’s gross revenue. Customers include restaurants, bars, commercial buildings, shopping centers, high-rise office buildings and government properties in the DMV — District of Columbia, Maryland and Virginia — area it serves, he says.



» Benny (left) and Mike use the company’s brand-new 2020 US Jetting 4018 model jetter to clean out a drainline from the pool.

» The water from the pool drains flowing freely after jetting.



**G&B Services
Plumbing and Drain
Cleaning LLC**

LOCATION: Bowie, Maryland
OWNER: Greg Beall
FOUNDED: 2000
EMPLOYEES: 12
SERVICES: Commercial service and drain cleaning, new-construction plumbing
SERVICE AREA: Maryland, Virginia and District of Columbia

MAXIMUM PERFORMANCE

The Maxi Miller offers a classic example of how investments in new equipment can propel entry into new markets. About three years ago, Beall got a call from a property management company with a big problem: Drainline backups in a 35-story luxury apartment building in Arlington, Virginia.

The key issue was lack of access. The access panels that had provided entry to clean-outs located throughout the building had been covered with slabs of marble tile during a remodeling project years earlier, he explains.



➤ Ray and Mike watch the live inspection feed on a Vivax monitor while clearing the pool drainline.

➤ Mike uses a diamond-tipped bit attachment for the Maxi Miller to grind roots out of the drainlines.



“Over the years, I’ve learned that you’re **only as good as the equipment you have and the people running it.**”

Greg Beall

Previous contractors tried going through sink drains to unclog the lines, but the pipes were too small for drain machines to gain access to the risers. Efforts to clean the lines from stack-pipe vents on the roof also failed.

“It had me scratching my head, too, after we got called in,” he says. “But I did some research on the internet and learned how drain cleaners in New York City clean lines in high-rise buildings from the bottom up.”

Then he bought a Maxi Miller with a 400-foot-long cable and went to work. Success there led the management company to ask Beall to handle drainline maintenance at more than 20 other buildings it owned.

“After that, the word got out,” he says. “That one project jump-started our entry into drain cleaning for larger commercial buildings.”

CUT IT OUT

The Maxi Miller is adept at cutting concrete, too. Earlier this year, Beall got a call from an apartment building owner with a major problem: Flooding caused by drainlines that had accidentally been clogged by floor-leveling concrete during a remodeling project.

“I bought a new drain machine specifically for the job, but it broke down — it fried in just one day,” Beall says. “So I busted out the Maxi Miller and it cut out that concrete like it wasn’t even there.”

“In fact, in some places, the pipes looked almost like new because the concrete had filled in divots, cracks and other imperfections in the old cast iron pipes. So after we drilled out the concrete, the pipes looked way better than they did before. It was incredible.”

A model 4018 trailer jetter from US Jetting (4,000 psi at 18 gpm) also plays a valuable role in the company’s efforts to boost productivity and keep customers satisfied, Beall says.

“As an investment, it’s definitely outdone itself. It helps us offer outstanding customer service on larger sites. I think it’s the best in the industry when it comes to jetting and flushing.”

ROOTS IN PLUMBING

Beall is a second-generation plumber who followed his father, Fred Beall, and stepfather, Donald Decarr, into the trade. After working at his stepfather’s company, he decided to start his own business.

» The diamond-tipped cleaning head for the Maxi Miller is used to remove roots and concrete from drainlines.



For the first 10 years, Beall concentrated on commercial service and repair work and drain cleaning. The company eventually earned maintenance contracts to do work at nearly 500 Pizza Hut and Wendy's restaurants in the DMV area.

"Maintenance contracts are good. If you do a great job and they know you provide other services, you've got your foot in the door," he says. "If they find out you have a plumbing division along with drain cleaning, then all of a sudden you have most of their work. And it all started with a drain call."

Around 2010, he branched out into new construction, motivated by the post-recession economic boom. New construction has slowed down due to the COVID-19 pandemic, but service work is booming, which illustrates the value of providing more than just one service.

"Drain cleaning is having a large impact on the company right now," Beall says. "It continues to grow monthly and currently represents about 50% of our business."

EQUIPMENT MATTERS

Beall estimates that during the last 20 years, he's invested more than 40% of his annual profits in equipment. His fleet of machines included four trailer-mounted water jetters — two from US Jetting (both 4,000 psi at 18 gpm); one PipeHunter unit (3,000 psi at 24 gpm), a brand owned by Texas Underground; and one built by Jetter Depot (4,000 psi at 10 gpm). The company also owns a Shark cart-mounted jetter (Karcher North America) that provides 8 gpm at 3,500 psi.

Other drain cleaning equipment includes RIDGID K-1500 and K-50 cable drain machines; two Maxi Miller machines and one Maxi Miller Power Plus; a ZipZip flex-shaft cable machine manufactured by Drain Rehab Solutions; and two electric-powered StairCat stair-climbing hand trucks, built by Escalera.

In addition, G&B Services has invested in RIDGID SeeSnake pipeline inspection cameras of all sizes, as well as cameras

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“At one point, I realized my best customer was killing me - just stringing me along.

Now I outright own every piece of equipment I have because I have the cash flow to pay for it.”

Greg Beall

from Vivax-Metrotech; a pipe bursting system from Hammerhead Trenchless; pipe lining technology from Perma-Liner Industries; and a point repair, pipe lining system from Picote Solutions.

The company also relies on six service vehicles, primarily Ford Transits; three excavators — two from Bobcat and one from Hitachi Construction Machinery; two backhoes, one manufactured by CASE Construction (a brand owned by CNH Industrial America) and one by Kubota Tractor; and three Bobcat skid-steers.

LESSONS LEARNED

Other factors also contributed to the company's growth. For starters, Beall says he had to learn to “fire” customers that never paid on time. “Knowing when to fire a customer was one of the most valuable business lessons I ever learned,” he says.

“Those customers always are giving you just enough work to keep you busy ... but you're always chasing profit while they pay a little at a time and try to negotiate payments for the balance.

CONTINUED >>

Getting results

When Greg Beall established G&B Services Plumbing and Drain Cleaning in 2000, he took a good, long look at what he liked and didn't like about past bosses, supervisors and foremen.

That helped him formulate a simple, but effective management philosophy that revolves around treating his technicians the way he was treated by his favorite supervisors.

“I used to work for a guy who spent 30 to 45 minutes almost every day chewing us out if someone was late and talking about the importance of being on time,” he recalls. “Then he'd leave and we'd spend a half hour talking about him.

“I saw similar things wherever I worked ... and those kinds of managers never got the kind of reaction or results they thought they were getting. I finally told him that the more time he spent bitching at us, the less time we had to work. Then I quit.”

Beall works hard to ensure his employees know he cares for and appreciates them. He periodically buys them lunch and occasionally will give them cash spot bonuses for going above and beyond on jobs, he says.

Other times, he motivates employees by buying power tools when they're on sale, then awarding them as prizes in an employee-of-the-month competition. “They try to do an even better job, just to win those tools,” he says.

>> Owner Greg Beall uses the US Jetting 4018 jetter to flush the mainline back to the storm drain.



Beall also invests in quality, reliable equipment, which he also considers an employee-retention tool. He also provides training — both in-house and from equipment manufacturers — to make sure they use tools and machines to the maximum effect. Training also boosts their sense of loyalty and professionalism, he says.

To increase productivity, every technician works with a helper. Even if a job doesn't require two people, the helper still goes along — and Beall says in those cases, he doesn't charge customers for two laborers.

He does this in part because it helps them finish jobs faster. “So in the long run, it's cheaper,” he says. But it also gives younger employees a great daily opportunity to see how seasoned pros go about their business.

“Every so often, I switch them up with different technicians to expose them to different ways of doing things. This also helps me figure out which guys work best together.”

This approach also helps him weed out bad employees by getting several opinions on a helper's work, instead of relying on just one technician who might happen to like the helper and doesn't want to criticize his work, Beall says.

So far, his management style and employee retention efforts seem to be working. He says four employees hired as helpers now are either technicians or foremen who have been with the company anywhere from five to 10 years.

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➤ Austin, Mike, Vinny and Ray (from left) use a jetter with a Warthog nozzle, a Maxi Miller with a diamond grinding head, and a Vivax camera simultaneously as they clear roots and debris from a pool deck drainline.

“At one point, I realized my best customer was killing me — just stringing me along. Now I outright own every piece of equipment I have because I have the cash flow to pay for it.”

Another contributor: A sharp focus on quality work and employee training. Beall impresses on his technicians that when every job is completed, it should look worthy of appearing on the cover of a plumbing magazine. To him, it’s all about attention to detail and craftsmanship.

“I tell them that plumbing is like artwork. I even make them tighten faucet handles so they’re all parallel (when shut off), like they should be.”

Furthermore, he insists on leaving job sites cleaner than when his technicians arrived.

“I make them wash floors before they leave,” he says. “Other plumbers might leave fingerprints on the wall and trash behind. But we don’t. I’ll wash down walls that weren’t even clean when we arrived. I want to do such a great job that customers feel like I forgot to charge them for something.”

“In the end, building owners don’t want to hear from tenants who are angry about having to take care of the mess plumbers leave behind. Doing things this way differentiates us from other companies and leads to a lot of word-of-mouth referrals, which are our only form of advertising.”

Beall also credits the company’s success to his wife, Alethea, who runs the administrative end of the business. “I’m a damn good plumber, but I’m not a very good businessman,” he concedes. “I wouldn’t be where I am without her. She’s the genius behind the business.”

SLOW BUT STEADY

Beall enjoys his job — especially the drain cleaning work — because it’s always challenging and requires problem-solving skills. “Plus, I’m pretty good at it,” he says. “I don’t want to sound cocky, but we get called in to solve a lot of problems that other companies haven’t been able to fix.”

In addition, resolving customers’ emergency drain issues makes him and his technicians heroes every day, which he finds gratifying.

Looking ahead, Beall anticipates slow but steady growth. In the next three to five years, he says he’d like to add up to two more trucks.

He has little interest in more dramatic growth. In short, it all boils down to quality control.

“I’d rather be small and win a gold medal for quality than be much bigger and win a bronze medal,” he says. “It’s hard to control quality when you mass-produce anything.”

But one thing won’t change, no matter how much larger the company grows: the strategy that helped Beall get where he is today.

“In the end, the formula for success is pretty simple: Better guys. Better equipment. Better training.” **c**

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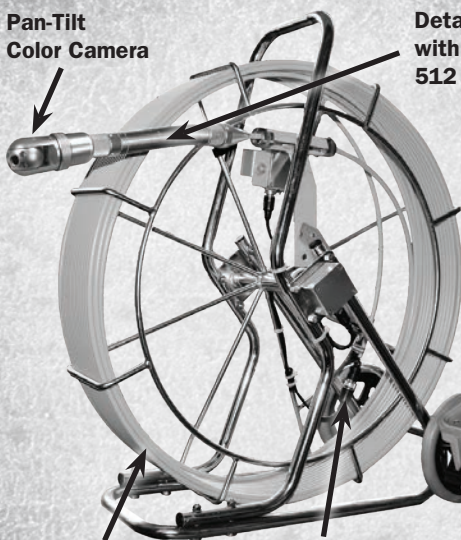
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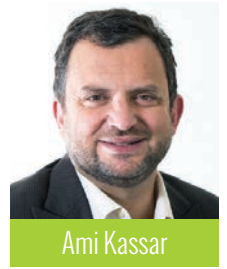
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How to Prosper During a Crisis

There are several ways to strengthen your company's position in tough times

By Ami Kassir

There's no denying that a societal crisis, especially a global one, is a game changer in many ways, particularly in the business community. Plenty of business people — entrepreneurs and otherwise — are dealing with real pain and life- and business-threatening situations and can only hope for the best right now.

Yet some business owners, especially those in the wastewater sector, remain busy and in a strong financial position right now and may be able to take advantage of whatever opportunities have arisen in these strange times. That's not to say you should prey on the misery of others, but there are some things you should be doing at this point that could pay off in the future.

Here are five fiscal moves to consider:

1. Restructure existing debt

Ideally, you don't want to be taking on any more debt these days if you can help it — and that is a big “if” for a lot of businesses. Still, there's plenty of opportunity to reduce your monthly payments.

Considering how life is always changing, lenders might view your business much differently now. For example, perhaps you're generating increased amounts of collateral, cash flow or credit. Even with an extended slowdown associated with a pandemic, your products or services are likely still in demand.

Refinancing should be on the table. Even shaving a percentage point or two is going to cut your monthly debt service, which will put more money in your coffers. And in these troubled times, cash is king more than ever.

2. Take a look at traditional SBA programs

Unlike in the past, you might now be eligible for a U.S. Small

Business Administration-backed loan — or a better conventional bank loan.

The SBA got a lot of attention because of the current CARES (Coronavirus Aid, Relief and Economic Security) Act and the Paycheck Protection Program, but the agency's regular lending programs should interest you. Do note that in its regular programs, the SBA doesn't make the loans — it only backs them for a select group of lenders.

The flagship 7(a) program offers low rates and fees and comes with counseling and education, if so desired, as well as generous repayment terms. In addition, lower down payments, flexible requirements regarding overhead and no collateral may also figure into the equation.

3. Consider lender loyalty and request restructuring

At the very least, you need to conduct a debt review to consider financing options as they stand now.

That said, you have to be careful. Your current lender won't want you to go, especially if the current arrangement is lucrative in their favor. They may try scare tactics, claiming you'll lose flexibility if you change lenders or that you may risk running out of money.

Resist that pressure. Think of it this way: What's more important — your business or your lender? Your lender is certainly looking out for itself first. You must, too.

And remember, it's always possible your lender could rework your deal, which could save you from awkward moments.

The SBA got a lot of attention because of the current CARES (Coronavirus Aid, Relief and Economic Security) Act and the Paycheck Protection Program, but the **agency's regular lending programs should interest you.**

4. Review all expenditures

More capital isn't always the answer. Sometimes, it's better to make do with less.

Entrepreneurs generally don't want to scale back their operations because they're too worried about growth. But few businesses grow in a straight line. There are ups and downs along the way, and now you might just want to minimize the damage.

Steps you might take include deferring capital expenditures or deferring or reducing lease payments and noncritical vendor payments, if possible. By reaching out proactively to landlords, vendors and other contract holders, you might be able to craft some breathing room if this is seen as necessary.

On the unpleasant side, you could think about furloughing some employees or even pay cuts (if you choose the latter, make sure you cut your pay as well).

5. Give yourself some credit

This advice — which isn't heeded nearly often enough — applies for both when your company is doing well and when it's struggling.

You should open a line of credit.

A credit line gives you peace of mind because you have a ready reserve to tap. And it gives you a great deal of flexibility. Say you get a short-term opportunity to buy a stockpile of key supplies or product inventory at a ridiculously low price. With a credit line, you can take advantage of that option.

Remember that you only pay interest on a credit line if you borrow from it — and there's no requirement that you do that. The credit line can sit there untouched if it isn't currently needed.

STRATEGIC THINKING

Now's a time when your goal may well be simply to ride out the next few months. That's fine. Yet riding out the next few months isn't the same as doing nothing. By being proactive, you can not only make the most of a bad time, but also position yourself for the inevitable rebound. **c**

Ami Kassir is the founder and CEO of Multifunding LLC, a speaker and the author of *The Growth Dilemma*. Contact him at www.amikassar.com.



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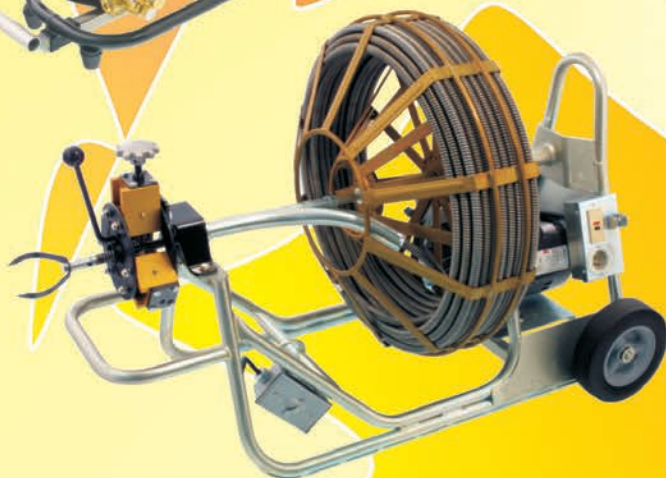
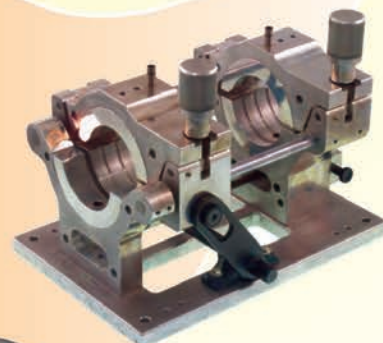
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Cleaner**

SEWER NOZZLE

COMPANY DIRECTORY

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www.alljetting.com
info@alljetting.com
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NAME OF NOZZLE	APPLICATION	PIPE DIAMETER	FLOW RATE (GPM)	MAX OPERATING PRESSURE (PSI)	WEIGHT	# OF AVAIL FRONT JETS	# OF AVAIL REAR JETS	HOSE SIZE/ CONNECTING THREAD
1/4" - 28 UNF Sapphire Nozzles and Plugs	Ultra High Pressure waterjetting up to 55,000 PSI	NA	3 to 30	20,000 - 55,000		1		
3/8" - 24 UNF Sapphire Nozzles and Plugs	Ultra High Pressure waterjetting up to 55,000 PSI	NA	3 to 30	20,000 - 55,000		1		
7/16" - 20 UNF Sapphire Nozzles and Plugs	Ultra High Pressure waterjetting up to 55,000 PSI	NA	3 to 30	20,000 - 55,000		1		
Long Stem Sapphire, 60° seating angle	Ultra High Pressure waterjetting up to 55,000 PSI	NA	3 to 30	20,000 - 55,000		1		
M10 x 1.5 thread - 5MM Hex Key	Ultra High Pressure waterjetting up to 55,000 PSI	NA	3 to 30	20,000 - 55,000		1		
5/16" Hex with 3/8" - 24 UNF	Ultra High Pressure waterjetting up to 55,000 PSI	NA	3 to 30	20,000 - 55,000		1		



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SEE AD ON PAGE 26

Eg-A-Nator-2 Tier 2	Clearing Blockages	4"-12"	8 to 80	10,000	varies per NPT size	1	6@10°	3/8" - 1/2"
Yello Jacket 22 port Tier 2'	General cleaning - able to configure to situation	4"-18"	8 to 80	10,000	varies per NPT size	4	18	3/8"-1/2"-3/4"
Chizel - 2	General Stubborn Blockages - sharp cutting edge	4"-12"	8 to 80	10,000	varies per NPT size	4	6	3/8" - 1/2"
Flat Nose	General Cleaning	4"-12"	8 to 80	10,000	varies per NPT size	Cust Spec	Cust Spec	1/2"
Button Dual Groove	General Cleaning	2" - 12"	2.5 to 80	15,000	varies per NPT size	Cust Spec	Cust Spec	1/4" -3/8" - 1/2"
Tow Hook	Pulled by Cabel or to Pull A Cabel	2" - 12"	2.5 to 80	15,000	varies per NPT size	Cust Spec	Cust Spec	1/4"-3/8"-1/2"-1"
Mini-Mole	Special tapered thread for use in small tube cleaning on rigid lance	.200" - 1"	1.7 to 20	10,000	varies per NPT size	Cust Spec	Cust Spec	Special tapered thread
Rodder Jets	General tube cleaning for use on Rigid Lance - male thread	.250" - 1"	1.7 to 40	15,000	varies per NPT size	Cust Spec	Cust Spec	Various male thread sizes
Cnt-r-KUT™ EMAX	Roots and Other Blockages Rotating Chain & Cable	3" - 12"	4 to 80	10,000	varies per NPT size	Cust Spec	Cust Spec	1/4" - 3/8" - 1/2"
Cnt-r-KUT™ Maxe	3 Flexible Guide Vane Kit for nozzle centering - for your existing nozzles	3" - 12"	1.7 to 80	10,000	varies per NPT size	n/a		3/8" - 1/2"
Mega-Thruster PX Revolver	Full 360° rotating nozzle for cleaning & polishing; designed for long runs	2" - 24"	1.7 to 80	10,000	varies per NPT size	Cust Spec	Cust Spec	3/8" - 1/2"

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(f) 973-252-1176
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office@envirosight.com
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JetScan	HD video nozzle for jetter trucks and trailers	6" - 30"	40 to 80	2,000 - 3,000	16.3 lbs.		6	3/4" or 1"
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Aurora, IL 60502
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(f) 630-692-7885
www.enzusainc.com
sales@enzusainc.com
SEE AD ON PAGE 42

Bulldog Antiblast	Anti-Toilet Blowing in Residential	8" - 24"	55 to 80	1,500 - 1,800	17 lbs.	6		1" - 1 1/4 "
Bulldog	Cleaning grease, roots, deposits, etc.	8" - 24"	50 to 120	2,000 - 2,900	17 lbs.	7	6	1" - 1 1/4 "
Rotodrill	Cleaning blocked pipes, frozen pipes, heavy debris	2" - 14"	13 to 80	2,000 - 4,000	25 lbs. to 1.5 lbs.	1	6	1/2" - 1"
Grenade	Flushing heavy debris	6" - 12"	40 to 80	2,000 - 3,600	11 lbs.		10	1"
Chisel 60.100L	Pentrating clogs, root masses, frozen pipes	6" - 16"	50 to 80	2,000 - 3,600	6 lbs.	4	6	1"
10.125TR Chain Scraper	Root removal, hard grease, hard deposits	5" - 12"	14 to 80	2,000 - 3,600	6 lbs.		6	1"
10.200R Rotating Chain Scraper	Removal of root masses, clogs, hard deposits	8" - 16"	50 to 80	2,000 - 3,600	78 lbs.		6	1"
10.400R Rotating Chain Scraper	Removal of root masses, clogs, hard deposits	16" - 32"	80 to 120	2,000 - 3,600	105 lbs.		6	1"
14.200 Milling Cutter	Removal of concrete & mineral deposits	8"	80 to 120	2,000 - 2,200	178 lbs.		6	1" - 1 1/4 "
Bulldozer 50.100G	Flushing debris from larger pipe	16" - 40"	40 to 80	2,000 - 3,600	57 lbs.	1	8	1"

MANUFACTURER



General Pipe Cleaners

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NAME OF NOZZLE	APPLICATION	PIPE DIAMETER	FLOW RATE (GPM)	MAX OPERATING PRESSURE (PSI)	WEIGHT	# OF AVAIL FRONT JETS	# OF AVAIL REAR JETS	HOSE SIZE/ CONNECTING THREAD
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Chisel Point Nozzle	Penetrating, breaking up debris	4" - 10"	12	2,500	4 oz.	4	6	1/2"
Traction Nozzle	Sand and mud removal	4" - 10"	12	2,500	8 oz.	1	6	1/2"
Cleaning Nozzle	Maintenance Cleaning	4" - 10"	12	2,500	12 oz.		8	1/2"
Spring Leader Nozzle	Guiding hose around tight bends	2" - 10"	1.5 to 8	1,500 - 3,000	4 oz.		3 to 4	1/8" - 1/4" - 3/8"
Downhead Nozzle	Dropping down T's	2" - 4"	1.5 to 4	1,500 - 3,000	2 oz.		3	1/8"
Chain Saw Nozzle	Cutting roots	4" - 10"	4 to 12	2,500 - 3,000	2 lbs.		2 to 4	3/8" and 1/2"
Rotary Nozzle	Scour pipe walls clean	2" - 10"	1.5 to 12	1,500 - 3,000	2 oz. to 10 oz.		2 to 4	1/8" - 1/4" - 3/8" - 1/2"

GP Sewer Cam	HD Nozzle for jetter trucks and trailers	6" - 18", custom skid available for 18" and up	Drilled to specs	Any	4.5 lbs.		6	1/2" - 3/4" - 1"
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Reaper 3/8"	Cutting through and removing blockages and flushing debris in sewer lines	3" - 6"	6 or 9	4,000	1.12 lbs.	1	4	3/8" NPT
Reaper 1/2"	Cutting through and removing blockages and flushing debris in sewer lines	4" - 8"	12, 15 or 18	4,000	1.54 lbs.	1	4	1/2" NPT
Reaper 1"	Cutting through and removing blockages and flushing debris in sewer lines	6" - 18"	50, 60 or 80	3,000	4.7 lbs.	1	8	1" NPT
Marksman	Cutting through and removing debris at distances of 20-30 feet. Could be used in locations like lift stations or manholes. To be used with a gun + lance.	N/A	15, 20 or 25	2,500	1.93 lbs.	1		1/2" NPT

Russian Rotor 1" Tier 2	Reverse Cleaning Technology	6" - 16"	50 to 125	1,000 to 3,000	7.2 lbs.	4	4	3/4" - 1 1/4"
Stallion 1" Tier 3	360° Cleaning-Heavy Debris	6" - 48"	30 to 125	1,000 to 3,000	9.4 lbs	1	6	3/4" - 1 1/4"
Aqua Power 700 Tier 2	Control Rotation - Grease & Roots, Mineral Deposits	6" - 24"	50 to 125	2,000 to 3,000	23 lbs	6	4	3/4" - 1 1/4"
Aqua Power Jr. Tier 2	Grease & Roots	4" - 16"	30 to 80	2,000 to 3,000	8 lbs.	5	4	3/4" - 1"
Royal Tier 3	360° Wall Cleaning Storm & Sewer	12" - 48"	40 to 180	1,500 to 3,000	17.6 lbs.		12	3/4" - 1 1/2"
Cleaning Tier 3	Everyday Routine Cleaning	3" - 16"	8 to 80	1,000 to 4,000	1 lb. - 6.6 lbs.		8	3/8" - 1"
Traction Tier 3	Hill Climbing - deteriorated/damaged or cracked pipes	2" - 12"	6 to 125	1,000 to 4,000	0.6 lbs. - 6 lbs.	1	7	3/8" - 1 1/4"
Floor Cleaner 5,6,8,10,12 & 14 Tier 3	Clean from Spring line down	6" and Up	18 to 180	1,000 to 4,000	18.75 lbs. - 51.35 lbs.		5,6,8,10, 12 & 14	1/2" - 1 1/2"
Torpedo Tier 3	Heavy Debris Removal - All Around Cleaning	6" to 16"	30 to 125	900 to 3,000	14 lbs.		8	3/4" - 1 1/2"
OMG Tier 3	Sanitary/Storm - flushing nozzle deteriorated pipe no bottom	12" and Up	60 to 125	1,500 to 3,000	36 lbs.	1	12	1 1/2" down to 3/4"

Cornering	Flushing through corners, general cleaning	1 1/2" - 8"+	2 to 8	1,500 - 3,000	< 8 oz.	1	3	1/8" - 1/4" - 3/8" - 1/2"
Penetrating Thrust	Pulling while boring through soft blockages	1 1/2" - 8"+	2 to 8	1,500 - 3,000	< 8 oz.	1	3	1/8" - 1/4" - 3/8" - 1/2"
Monster Flush	General cleaning, flushing, pulling	1 1/2" - 8"+	2 to 8	1,500 - 3,000	< 8 oz.	1	6	1/8" - 1/4" - 3/8" - 1/2"
General Flusher	Flushing while pulling	1 1/2" - 8"+	2 to 8	1,500 - 3,000	< 8 oz.		6	1/8" - 1/4" - 3/8" - 1/2"
Blind Thrust	General cleaning at long distances	1 1/2" - 8"+	2 to 8	1,500 - 3,000	< 8 oz.		4	1/8" - 1/4" - 3/8" - 1/2"
Degreasing-Deicing	Flushing ice and grease	1 1/2" - 8"+	2 to 8	1,500 - 3,000	< 8 oz.	3	6	1/8" - 1/4" - 3/8" - 1/2"
Rotating	Sidewall cleaning, rinsing	2" - 8"+	2 to 8	1,500 - 3,000	< 8 oz.		4	1/4" - 3/8" - 1/2"
Drophead	Cleaning through tight bends and drops	1 1/2" - 2"	2	1,500	< 8 oz.		3	1/8" - 1/4"

1" Root Rat	Roots and Encrustations	8" - 30"	40 to 120	Up to 5,000	5 lbs.		3	3/4" or 1"
1/2" Root Rat	Roots and Encrustations	4" - 10"	5 to 18	Up to 8,000	1 lb.		2	1/2" or 3/8"
3/8" Root Rat	Roots and Encrustations	2" - 6"	4 to 12	Up to 5,000	8 oz.		2	1/4" to 3/8"

MANUFACTURER



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USB-USA LLC
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usbussalco@gmail.com
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NAME OF NOZZLE

APPLICATION

PIPE DIAMETER

FLOW RATE (GPM)

MAX OPERATING PRESSURE (PSI)

WEIGHT

OF AVAIL FRONT JETS

OF AVAIL REAR JETS

HOSE SIZE/ CONNECTING THREAD

Avanti	Rotating penetrator for ice, roots and mineral deposits	3" - 12"	15 to 80	2,000 to 4,000	0.75 - 2 lbs		6	1/2" - 3/4" - 1"
Tri-Star	Chisel penetrator for ice, grease, and hard scale	3" - 20"	15 to 80	2,000 to 4,000	0.25 - 4 lbs	4	6	1/2" - 3/4" - 1" - 1 1/4"
Rondo	Final cleaning for pre-commissioning pipe and cleaning before re-lining	3" - 18"	12 to 80	2,000 to 4,000	0.5 - 3 lbs		3	1/2" - 3/4" - 1"
HW	Flushing for heavy debris	6" - 24"	30 to 80	2,000 to 4,000	0.5 - 17 lbs		12	1/2" - 3/4" - 1" - 1 1/4"
Roto-Max	Rotator for roots, grease, solids, and heavy debris	4" - 32"	18 to 80	2,000 to 4,000	2 - 16 lbs	1	6	1/2" - 3/4" - 1" - 1 1/4"
Dual Degree	General cleaning with excellent flushing power	4" - 18"	18 to 80	2,000 to 4,000	2.5 - 9 lbs	1	8	1/2" - 3/4" - 1"
RDS	Rotator for grease and general cleaning	3" - 24"	15 to 80	2,000 to 3,500	1.3 - 14 lbs		6	1/2" - 3/4" - 1" - 1 1/4"
Wiesel	General cleaning for long-distance jetting	4" - 18"	18 to 80	2,000 to 4,000	0.5 - 1.5 lbs	1	8	1/2" - 3/4" - 1"
Combi Chain Cutter	Aggressive cleaning for complete removal of roots and concrete residue	6" - 24"	30 to 80	2,000 to 2,500	5 - 19 lbs		6	3/4" - 1" - 1 1/4"
Mega	Heavy flushing for debris in large lines and culverts	4" - 120"	18 to 80	2,000 to 4,000	3 - 50 lbs	1	11	1/2" - 3/4" - 1"
Power Jet	Ejector-style flushing for 16" and larger water filled pipes and ditches. Increase flow volume 4X with low working pressure for debris removal	16" - 120"	60 to 80	2,100	82 lbs		12	1" - 1 1/4"
Wamax	The ultimate milling system for removal of concrete, grout, protruding taps, roots, and anything that can block a line	4" - 40"	30 to 100	2,000 to 2,900	17 - 82 lbs		8	3/4" - 1" - 1 1/4"
Rotojiggler	Vibrating nozzle for removal of mineral deposits, concrete, and slag	4" - 16"	15 to 65	2,000 to 2,900	2 - 6 lbs		6	3/4" - 1" - 1 1/4"
K114 Chain Rotor	Adjustable to aggressively clean up to 62" diameter pipe	10" - 62"	80 to 100	2,000 to 2,900	44 lbs		6	1 1/4"
Eel Cutter	Chain cutter with short body and flexible centering skid to maneuver through bends and bad offsets	4" - 8"	18 to 65	2,000 to 2,900	3 - 6 lbs		6	1 1/4"
Emperor Nozzle	Flushing debris from large lines	12" - 32"	80 to 120	2,000 - 2,500	19.8 lbs.		12	1" - 1 1/4"
Penetrator Nozzle	Flushing heavy debris in lines with off sets	6" - 16"	50 to 80	2,000 - 4,000	15.4 lbs.	1	8	3/4" - 1 1/4"
Power Pull Nozzle	Mud, Sand, Silt	4" - 12"	18 to 80	2,000 - 4,000	1.5 - 9 lbs.		8	1/2" - 1 1/4"
Spear Nozzle	Penetrating clogs/blockage, root mass	8" - 24"	50 to 80	200 - 4,000	6.2 lbs.	4	6	3/4" - 1"
General Nozzle	All around sewer cleaning, prevent maint.	4" - 16"	18 to 80	2,000 - 4,000	1.5 - 9 lbs.	1	8	1/2" - 1"
Arrow Nozzle	Penetrating clogs/blockages, frozen pipes	4" - 16"	18 to 80	2,000 - 4,000	1 - 2.5 lbs.	3 + 1	8	1/2" - 1"
Stealth Nozzle	Flushing heavy debris	8" - 24"	60 to 80	2,000 - 4,000	17.6 lbs.		8	3/4" - 1 1/4"
Raptor Nozzle	Penetrating clogs, roots/grease masses	4" - 24"	18 to 80	2,000 - 4,000	2.4 - 5.5 lbs.		3(1/2") 6(1")	1/2" - 1"
Big Foot Nozzle	Flushing debris from floor of large pipes	16" - 48"	40 to 120	2,000 - 3,000	33 - 56 lbs.		6 to 14	1" - 1 1/4"
Twister Nozzle	Cleaning grease, light roots, mineral deposits	8" - 24"	50 to 120	2,000 - 4,000	15.4 lbs.	5	4	1" - 1 1/4"
Typhoon Nozzle	Grease, light crust, light roots	6" - 12"	18 to 80	2,000 - 4,000	11 lbs.	4	6	1/2" - 1"
Antiblower	Shallow sewer line or close to home	6" - 16"	40 to 80	2,000 - 3,000	9 lbs.	1	8	3/4" - 1"
Sandshoe	Sand, dirt and rocks	4" - 18"	12 to 18	2,000 - 4,000	7 lbs.		4	3/8" - 1/2"
Rotating	Scrubbing pipe walls	2" - 12"	4 to 18	2,000 - 4,000	1 - 3 lbs.		3	1/4" - 3/16" - 3/8" - 1/2"
Q Nozzle	Downhill jetting	4" - 12"	12 to 18	2,000 - 4,000	1 - 2 lbs.	3	4	3/8" - 1/2"
Rocket Nozzle	Long distance jetting	4" - 12"	12 to 18	2,000 - 4,000	2 lbs.	1	4	3/8" - 1/2"
Closed Nozzle	Standard jetting	2" - 12"	4 to 18	2,000 - 4,000	1 lb.		4	3/8" - 1/2"
Open Nozzle	Standard jetting	2" - 12"	4 to 18	2,000 - 4,000	1 lb.	1	4	3/8" - 1/2"
Brass Ball	Stainless steel hose jetting	2" - 8"	4 to 18	2,000 - 4,000	1 lb.		4	3/16"
Primus 3D	Greasae, Crusts, Light Roots	4" - 24"	18 to 120	2000 - 4,000	2.6/7.0/8.3/20.1	1	3/4/5/6	1/2 - 3/4 - 1 - 1 1/4
Rocket 3D	Sand, Silt, Large Debris	4" - 24"	12 to 120	2,000 - 4,000	6/2.6/4.85/11.4/44		6/8/10/12	1/2 - 3/4 - 1 - 1 1/4 - 1 1/2
Pipe Wolf 3D	Total Blockages from Roots, Grease & other Organic Matter	4" - 24"	14 to 120	2,000 - 4,000	2.4/5.7/11.9		6	1/2" - 3/4" - 1" - 1 1/4"
Bagger Max 3D	Sand, Silt, Solids, Sludge & other Heavy Debris	18" - 96"	50 to 120	2,000 - 3,000	33/53/66/114.5	5	6/8/10/12	3/4" - 1" - 1 1/4" - 1 1/2"
Chisel	Total Blockages from Roots, Grease, etc.	2" - 15"	8 to 120	2,000 - 4,000	22/33/66/154	4		1/4" - 3/8" - 1/2" - 3/4" - 1" - 1 1/4"
FS 3D	Total Blockages from Roots, Grease & other Obstructions	2" - 15"	8 to 80	2,000 - 4,000	22/44/66/154/3.7	4	6/5/6/8	1/4" - 3/8" - 1/2" - 3/4" - 1"
Tri-Jet 3D	Mud, Sand, Silt - Everyday Cleaning	4" - 48"	60 to 120	2,000	48/12.1/17.6/23.1/44		12/15	1" - 1 1/4"
FD 2 3D	Half-Open or Complete Open Drains - Mud, Sand, Silt	4" - 12"	14 to 120	2,000 - 4,000	2.6/4.8/3/14.3		6/8	1/2" - 3/4" - 1" - 1 1/4"
3D Extreme	Mud, Sand, Silt	6" - 15"	40 to 120	2,000 - 3,000	9.4	1	8	3/4" - 1" - 1 1/4"
3D Cleaning	Everyday Cleaning - Sand, Mud, Silt, Grease	4" - 15"	14 to 80	2,000 - 4,000	6/12.1/17.6/23.1	1	6/8/10/12	1/2" - 3/4" - 1" - 1 1/4"

MANUFACTURER

Warthog Nozzles by StoneAge

466 Skyline Dr.,
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866-795-1586 • 970-259-2869
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NAME OF NOZZLE

APPLICATION

PIPE DIAMETER

FLOW RATE (GPM)

MAX OPERATING PRESSURE (PSI)

WEIGHT

OF AVAIL FRONT JETS

OF AVAIL REAR JETS

HOSE SIZE/ CONNECTING THREAD

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Sewer jetting

8" - 36"

50 to 80

1,500 - 5,000

10 lbs.

1

4

1"

Warthog WGP-1

Sewer jetting

8" - 36"

50 to 80

1,500 - 5,000

10 lbs.

1

4

1"

Warthog WHP

Sewer jetting

6" - 18"

15 to 50

1,500 - 4,000

4 lbs.

1

2

1/2" - 3/4"

Warthog WH

Sewer jetting

6" - 18"

10 to 45

1,500 - 8,000

4 lbs.

1

2

1/2" - 3/4"

Warthog WS - 1/2

Sewer jetting

4" - 8"

8 to 20

1,500 - 5,000

3 lbs.

1

2

1/2"

Warthog WT - 3/8

Sewer jetting

3" - 6"

5 to 12

1,500 - 5,000

1 lb.

1

2

3/8"

Warthog WV - 1/4

Sewer jetting

2" - 4"

3 to 8

2,000 - 5,000

1 lb.

1

2

1/4"

Warthog WD 1-1/4

Sewer jetting

8" - 36"

80 to 120

1,500 - 5,000

11 lbs.

1

6

1-1/4"

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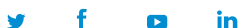
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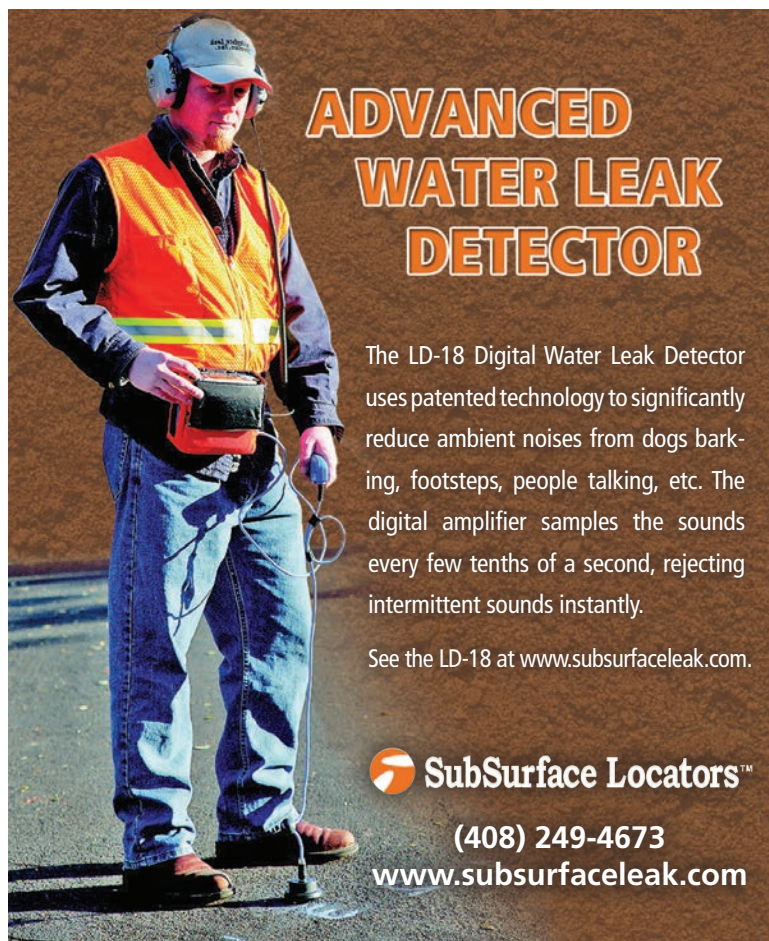
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Looking Down the Line

CUES' durable inspection equipment is backed by decades of innovation and a strong commitment to customer service

By Kim Peterson

CUES has been a fixture in the pipeline inspection industry for more than five decades. The company designs and manufactures a wide range of high-quality pipeline inspection and rehabilitation equipment.

While often praised for the longevity and durability of its systems, CUES takes even greater pride in its individualized customer service and support. CUES' team provides equipment training, phone troubleshooting, parts support and extensive repair networks to keep its customers out on the job.

Cleaner recently spoke with Alexander Milley, CUES regional sales manager for the Southeast, and Chris Graybill, CUES customer service manager, about the company's varied equipment, custom offerings and extensive customer support.

Cleaner: Tell us a little about the history of CUES.

Milley: CUES was founded in 1964, about 10 miles from where our factory operates today. Little-known fact: CUES is an acronym for Community Utility Equipment Supply. Holding true to its original identity and purpose, CUES specializes in CCTV inspection equipment for sewer and stormwater assets — and has since day one. Having said that, the company continues to evolve and grow to meet customer needs and maintain a competitive edge in the marketplace. CUES is — and always has been — an American-made product. A tremendous amount of pride accompanies every unit CUES ships, knowing the company supports a local workforce and the local workforce supports the customer.

CUES has had ups and downs over the years; however, like all great companies, strong leadership and a resilient staff have adapted and overcome many daunting challenges, forging the company people see today. The open and interactive relationship between customers, channel partners and the factory is a hallmark of CUES and will continue to be an integral part of our growth recipe.

Cleaner: What differentiates your pipeline inspection systems from the competition?

Milley: CUES offers a wide variety of products ranging from simple push cameras to 3D LIDAR imaging systems — and everything in between. The breadth of the offering is the broadest and one of the most advanced in the industry. With this vast offering, CUES strives to offer a solution for all needs in the CCTV inspection market. CUES has some exciting products that we feel are unique based specifically



“A tremendous amount of pride accompanies every unit CUES ships, **knowing the company supports a local workforce and the local workforce supports the customer.**”

Alexander Milley

« The CUES SoLID FX is a multisensor inspection system for large-diameter pipes. Its LIDAR, sonar and CCTV capabilities can provide condition assessment or rehab planning for pipelines 18 inches and larger.

» The QZIII is a lightweight, portable, HD wireless video inspection pole camera that can be operated by one person using any tablet, designed to provide safe inspection and surveys in pipelines, wet wells, manholes, sewer treatment plants, steam generators, tanks and other areas that are difficult to reach.

» The SPiDER scanner collects millions of 3D points during each manhole scan that provide engineering and survey quality information about manhole geometry and condition.



on their technology — most notably the EZ Grout Panel, Micro P&T lateral launch camera, SoLID FX multisensor platform and SPiDER manhole scanner.

In general terms, outside of some of the more advanced products, one thing comes to mind that makes CUES equipment stand out: longevity. It is not uncommon to meet a customer with a 10- to 15-year-old system — sometimes a 20- to 25-year-old system — that still gets used daily. The value the taxpayer or business owner gets out of a CUES system over that life cycle is immense. What allows this to happen is demanding leadership, a skilled and experienced workforce and a tremendous investment in customer service.

Realizing jobs depend on our equipment's functioning, CUES' investment in customer service — through repair/troubleshooting training, field operation training, telephone support, satellite service centers, channel partners and loaner inventory — have built a foundation to support customer uptime. CUES would not have such a large footprint in the marketplace without this level of dedication.

Cleaner: Tell us about the inspection systems, what applications they best serve and what needs they address.

Milley: The scope of work is rather broad. With lateral launch, gas cross-bore inspection, lateral inspections and blockage locates can be addressed. The various SONAR systems can inspect siphons, calculate debris levels and assess pipe wall degradation. The various laser systems can calculate pipe-ovality and joint-separation measurements. The manhole systems can provide measurable data for accurate decision-making and quality assurance.

With products directed at pipe rehabilitation, CUES offers tools for lateral reinstatement, debris/obstruction grinding, joint sealing (for leaks) and point repairs. Finally, for meeting demanding footage goals and assisting with overall inspection cost-reduction, CUES offers



the DUC digital side-scanning camera. This is just a sample of the applications CUES products can address.

Cleaner: You also offer custom inspection vehicles. Tell us more about those offerings and what customizations are available. Walk us through what that process is like for a customer.

Milley: Yes. In fact, this is another differentiator: CUES starts with an empty unit and fully up-fits the entire interior: walls, floors, cabinetry, etc. When someone buys a CUES truck, it is truly a “CUES truck” — not a mix of third-party workmanship. With this level of involvement, CUES is in a strong position to support the customer after the sale, should any questions arise.

As far as offerings, there are far too many to list. Essentially, as long as the desired equipment and layout fit within the physical dimensions and vehicle weight ratings, almost anything is possible at CUES.

Cleaner: What are some recommendations for customers shopping for inspection systems?

Milley: Take your time, speak with current users performing similar work and don't underestimate the value of support. User feedback is invaluable to not only the manufacturer, but also other users in the market. Most brands will work for the first one or two years; it is after three-plus years where the value of a system is justified — or not.

Cleaner: CUES is known for its customer support. What sort of after-sale training and support is available? Why is this so important to CUES?

Graybill: CUES believes that strong after-sale support is key to productivity by minimizing customer downtime. We provide this by having dedicated training and troubleshooting staff, as well as repair services at a number of facilities across the U.S. and Canada. We also maintain a large inventory of loaner equipment that is available at no charge to customers while their unit is being serviced. Our training staff is available to travel to the customer's site and provide individual training on any of our inspection and rehabilitation systems. We can also provide web-based training on both hardware and software as requested.

Cleaner: CUES offers technical training schools in many regions of the country throughout the year. What sort of training do these courses include? What do attendees get out of the programs?

Graybill: Our courses are designed to teach our students how to effectively identify and resolve problems as they occur, minimizing downtime while troubleshooting system faults. The training is

» CUES offers custom-designed inspection vehicles, like this CCTV/LAMP truck featuring the LAMP II (Lateral & Mainline Probe).

comprehensive, covering everything from AC and DC theory, meter operation, voltage and continuity checks to video path and power path diagnosis. Courses for both mainline and lateral troubleshooting are available. The CUES REDI Kit, a collection of troubleshooting aids specifically designed to speed fault location, is also covered. Our students leave with a package of system drawings and troubleshooting guides and, most important, a clear understanding of our systems and the confidence to troubleshoot them effectively.

Quick disclaimer: Due to COVID-19, our classes, schools and shows are of course canceled, on hold or conducted online. Once things are "back to normal," everything will resume.

Cleaner: How do you see the drain cleaning and inspection industry evolving?

Milley: Like most technological industries of today, the inspection industry is rapidly evolving — higher-resolution cameras, wireless technology, new types of scanners and deeper integration of software. As time passes, I believe the industry will see refinement of these, as well as the introduction of new technology.

Cleaner: What was new for CUES in 2020? What can customers expect out of CUES in the future?

Milley: 2020 was an exciting year for CUES with the release of a number of products. The most notable are the C550c Hunter Base Station, Micro P&T lateral launch camera, Currahee cutter/grinder and GraniteNet Web Sync module.

Customers can expect continuing innovation with the same access and dedication to customer support.

Cleaner: What do you want your customers to think of when they hear the name CUES? Is there anything else you would like to add?

Milley: Reliability. Reliability goes beyond products, extending through the workforce: Reliable people creating reliable products with reliable support.

And as a proud employer of many veterans, CUES would like to extend a sincere thank you to all U.S. armed forces, veterans and first responders. **c**



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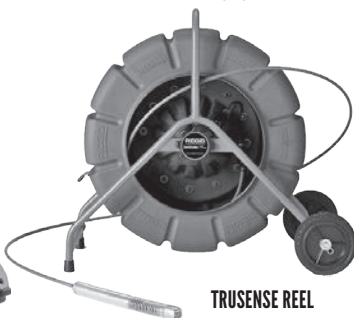


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Stacking Up Relining Jobs

Cured-in-place liners for branch-line tees bolster Hawaiian plumber's plans to go vertical

By Ken Wysocky

For years, Steve Allen was frustrated by his inability to effectively tackle what he believes is a large potential market for pipeline rehab work: lining vertical stack pipes that are failing in condominium and apartment buildings.

But all that changed when Allen — the owner of Allens Plumbing in Hawaii — learned about the tee liners made by Repiper AB, a Swedish-based company he ran across at a recent Water & Wastewater Equipment, Treatment & Transport (WWETT) Show. (The product is distributed in the U.S. by APEX CIPP Solutions and Pipe Lining Supply.)



“The tee joint (for branch lines off the stack pipe) is the weakest link in vertical pipe lining,” explains Allen, who’s been doing trenchless pipeline rehab since 2000. “We used to cut holes and reinstate vertical lines, but they often leaked, even when cut properly, because there’s a tiny gap between the host-pipe wall and the liner where water can enter.

“As a result, we’ve turned down multiple jobs because we just couldn’t get that part of the vertical lining right. ... It wasn’t worth the long-term liability. We wanted 100% coverage without having to take invasive measures and 100% peace of mind that the connections wouldn’t leak.”

A SIMPLE PROCESS

The Repiper system offers that peace of mind for Allen, who established his business in the city of Kahului on the Hawaiian island of Maui in 1983. The Repiper technology works in much the same way as a conventional cured-in-place sectional point repair. The main difference is the felt T-shaped liner, as its name implies, has a “leg” on it that fits into a branch-line opening in the stack pipe. (The liner can be used in vertical or horizontal applications.)

When an operator inflates the bladder inside the liner, that leg of the tee pops into a branch line and seals tightly against it while the rest of the liner seals against the main host pipe, above and below the branch connection.

After it’s either heat- or steam-cured (Allens Plumbing uses steam), the bladder is deflated and removed, leaving a seamless and sealed tee connection behind.

The key to a watertight seal lies in getting the rest of the liner sections in between the tee liners to properly overlap with the tee liner. Allen says that for vertical applications, his crews typically install a one-story section of vertical liner, stopping below the

ALLENS PLUMBING INC.

KAHULUI, HAWAII

OWNER: Steve Allen

PRODUCT: Tee liners from Repiper AB

FUNCTION: Sealing branch-line connections

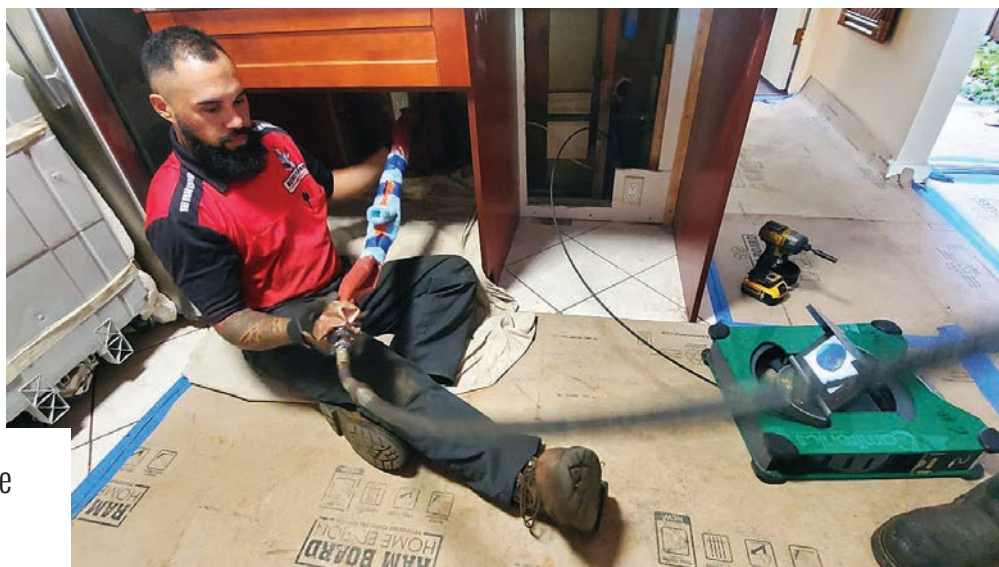
FEATURES: Easy to use on horizontal or vertical installations; flexible enough to easily travel through pipe bends; steam- or heat-cured for better efficiency

COST: Approximately \$130 to \$220 per tee liner, depending on size

WEBSITE: www.allensplumbinghi.com

« Allens Plumbing lead technician Preston Gannon installs a Repiper tee-connection liner via a clean-out. The felt T-shaped liners have been a game changer for lining vertical stack pipes in tall condominium and apartment buildings.

» Preston Gannon sits at the access point preparing to insert a wetted-out tee liner into a vertical section of pipe where it will overlap the previously installed liner.



“We wanted 100% coverage without having to take invasive measures and 100% peace of mind that the connections wouldn’t leak.”

Steve Allen

branch line. The company uses the felt WovoLiner product, made by MaxLiner USA.

Then the work crew installs the Repiper tee liner, making sure that the bottom of it overlaps the MaxLiner liner below it in the host pipe, and lets it cure. Then workers install the next section of felt liner, with the bottom overlapping the top end of the tee liner.

“You just keep overlapping over and over and over, sort of like installing roof shingles,” Allen says.

CONVERGENCE OF TECHNOLOGIES

Because the branch lines typically are too short to line, Allen instead uses a Quik-Coating System from Pipe Lining Supply to seal them. It’s important to ensure that the polyurea-based resin overlaps the Repiper tee liner, he says.

The company also relies on drain machines from Quadra Plex and Picote Solutions to prep lines for lining, SeeSnake pipeline cameras from RIDGID and Miniflex cameras from Camtronics BV for pre- and post-lining inspections, and Gvision camera monitors from EPL Solutions.

“There’s no one silver bullet that solves every problem,” Allen points out. “The Repiper just puts another arrow in our quiver that we can use in conjunction with other technologies.”

A typical tee-liner installation takes about an hour, which Allen says might sound like a long time but actually is faster than reinstating lines.

Allen is confident enough about the integrity of the Repiper tee liners to give customers a 10-year warranty against failure. “It provides a good finish and it’s seamless, if it’s all overlapped properly. There are no lips or edges: Everything works with the (water) flow.”

Another benefit: If a liner fails, it often requires invasive techniques to access the host pipe and fix the problem. But because the tee-liner installation is such a controlled process, built piece by piece, it minimizes the potential for failure.

“It might eat a little more of your time, but it saves you from the liability (of failures) in the long run.”

In addition, the deflated tee liner is flexible, so it can travel easily through pipe bends, he adds.

LARGE POTENTIAL MARKET

Using the liners required a significant upfront cost — between \$10,000 and \$15,000 — for buying the many ancillary components required to install the tee liner, including steamers, bladders, hoses, push rods and air bleeders, Allen points out.

On the other hand, a recently completed project in the city of Lahaina on Maui demonstrates the value of the investment. Allens Plumbing won a bid to reline 116 leaking cast iron stack pipes in a 58-unit, two-story condominium complex, built in the 1970s. The revenue from that job more than covered the initial startup costs, he says.

It took five technicians three months to complete the job. “And I wouldn’t have even attempted it without the Repiper technology.”

The project also illustrates why Allen is so bullish on lining stack pipes versus sewer lines. The math is simple: There’s usually only one main sewer line for an apartment building or condo complex, but there are dozens and dozens of stack pipes in even a small condo or apartment complex, he notes.

Moreover, when crews work on a large vertical-lining project, there’s less fuel consumed and decreased truck wear and tear because they’re not driving to multiple jobs every day, he adds.

“I’ve been saying for years that aboveground pipe rehab is the holy grail of plumbing. And with the Repiper technology, it looks like we’ll be stacked up (with projects) for a long time.” **c**

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SPOTLIGHT

Versatile nozzle reduces downtime

By Tim Dobbins



Sewer cleaning contractors have long relied on the use of multiple nozzles to descale lines and clear blockages. Retracting the hose and changing nozzles during descaling can be time consuming.

After extensive engineering and testing, Warthog Nozzles by StoneAge developed the Switcher nozzle to reduce that inefficiency. The Warthog Magnum Switcher was designed to allow operators the ability to descale and power through blockages with one multifunctional nozzle. The Magnum Switcher head contains two sets of nozzles, angled for pulling/flushing or descaling/cleaning that can be switched while in the sewer line.

“The operator can go back and forth between pulling/flushing and descaling/cleaning while the tool is in the line by simply turning the pump off and then back on and up to full pressure again,” says Anne Brennan, dealer manager at Warthog. “This redirects the water to the required ports for the specific function.”

The Switcher can be used with pressure ranges from 1,200 to 8,000 psi and a flow range of 14 to 100 gpm and accepts inlet sizes from 1/2 to 1 1/4 inch. This versatile design is available in four industry-specific patents to handle an array of jobs. “Steep inclines or long runs are easily handled, and larger amounts of debris can be flushed when the pulling/flushing jets are engaged,” Brennan says. The Switcher uses the power of water to clear obstructions and clean any kind of debris in the pipe, from roots to grease and hard deposits.

Built with lower-cost productivity in mind, using one nozzle for multiple applications can decrease operational expenses by conserving water, equaling fewer runs to refill water tanks and, in turn, lower fuel consumption. It also saves the time it would normally take to exchange nozzles for various applications on the job site. The Switcher is completely rebuildable and easily maintained in the field, reducing downtime associated with offsite maintenance. Operators using this technology have indicated a huge value in the ease of getting the Switcher through an obstruction with the thrusting jets engaged and being able to clean the pipe wall thoroughly when using the descaling jets.

“For me, it’s the versatility,” says Jason Demartini of Vallejo Sanitation in California. “It has the ability to cut roots in cleaning mode without blowing up toilets. It’s also important that it climbs hills effectively. It’s revolutionary. There is no other product on the market today that will switch like that.” 866-795-1586; www.warthog-nozzles.com.



1 HYDRA-FLEX REAPER SEWER JETTING NOZZLE

The Reaper 1-inch sewer jetting nozzle from Hydra-Flex is designed for larger, 6- to 18-inch pipes. It cleans drains, industrial pipes, sewers and tubes by clearing blockages, grease and roots with fewer passes. The 0-degree rotating front jet produces a straight water stream that blasts at up to 4,000 psi while rotating to form a 30-degree cone of coverage. Unlike other Reaper nozzle sizes, it has eight rear jets instead of four, increasing the maximum thrusting and pulling power with a 20-degree angle. The Reaper 1-inch nozzles are field repairable. 952-808-3640; www.hydraflexinc.com.

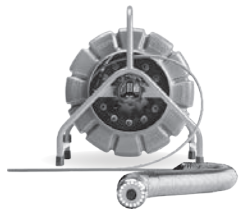
2 AVANTI INTERNATIONAL AV-100 CHEMICAL GROUT

Avanti International’s AV-100 chemical grout now comes in 30-pound bags; it’s used to stop leaks, stabilize soil and rock, and permanently control groundwater. Using two 30-pound bags in a 60-gallon batch gives a 12% grout concentration without having to recalculate mix components. AV-100 is an ultra-low viscosity, chemically reactive gel that can travel anywhere water can travel, and it cures to create an effective, long-lasting water barrier while providing soil stabilization. It is designed to stabilize soils and stop water infiltration in manholes, mainlines, laterals, tunnels, mines and other underground structures. 800-877-2570; www.avantigrout.com.

3 PARAMOUNT PIPE LINING PRODUCTS CALIBRATION TUBE

The high-frequency, light-duty, yellow calibration tube is the newest addition to the Solace family of calibration tube products offered by Paramount Pipe Lining Products. The tube uses an advanced, high-frequency seaming and sealing system. The seam/seal application includes a welded overlap seam to ensure an airtight calibration tube. Recommended for single use, it is manufactured using ultraflexible, lightweight polyethylene fabric with a PVC coating, and it can be installed via inversion or pull-in-place. 833-663-2477; www.paramountcipp.com. **c**

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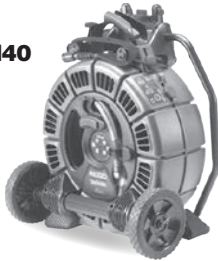
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Aries Industries announces new dealer in Canada

Aries Industries announced it has strengthened its international market reach by adding Ontario-based JD Brule Equipment to its dealer network. JD Brule Equipment, based in Greely, has worked in the underground infrastructure industry for more than 30 years. As an Aries dealer, JD Brule Equipment will sell and service Aries video inspection equipment and vehicles for customers throughout Ontario and Quebec.

Vac-Con names new general manager for Vector Technologies

Vac-Con named Ned Zolinski general manager for Vector Technologies. In this role, he will oversee all aspects of the business from plant operations to sales and marketing. Zolinski holds a bachelor's degree in mechanical engineering and a master's degree in business administration, both from Colorado State University.

Milwaukee Tool opens new service hub

Milwaukee Tool expanded its footprint with a new service hub in Greenwood, Indiana. Anticipated to open in March 2021, the centralized repair facility will complement the company's other service hub in Greenwood, Mississippi. Both the Indiana facility and service hub in Mississippi will act as the main axis points for the company's service operations for users around the U.S. The Indiana facility will employ more than 450 people.

Paramount Pipe Lining Products receives NSF/ANSI 14 listing

Paramount Pipe Lining Products announced that NSF International determined its Paramount Pipe Lining System products comply with NSF/ANSI 14. The approval relates specifically to the Paramount Pipe Lining System CIPP products.

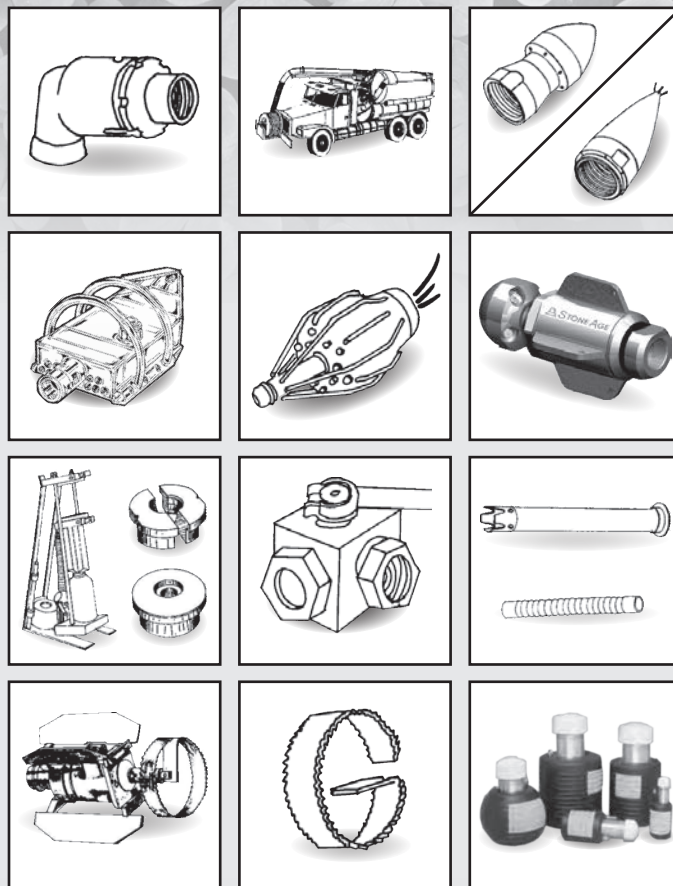
Mr. Rooter celebrates strong first half of 2020

Mr. Rooter Plumbing, a Neighborly company, awarded five new franchise agreements and expanded to five additional territories for existing franchise owners from January through June 2020. This growth brings the total size of the network to almost 250 locations open and in development across North America, with a strong forecast of continued expansion ahead. **c**

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C01



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C11



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CBM



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williamseqpt@gmail.com,
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C11

2005 Vactor 2100, International 7600, 385 HP, Allison 4500, 15-yard, 1,500-gallon, 80 gpm @ 2,500 psi, 2 stage fan vacuum, JD 180HP aux engine. 26,093 miles, 3,752 hours. Call Brian for pics and further specs @ 303-898-9475. CO (C11)



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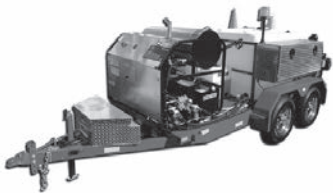
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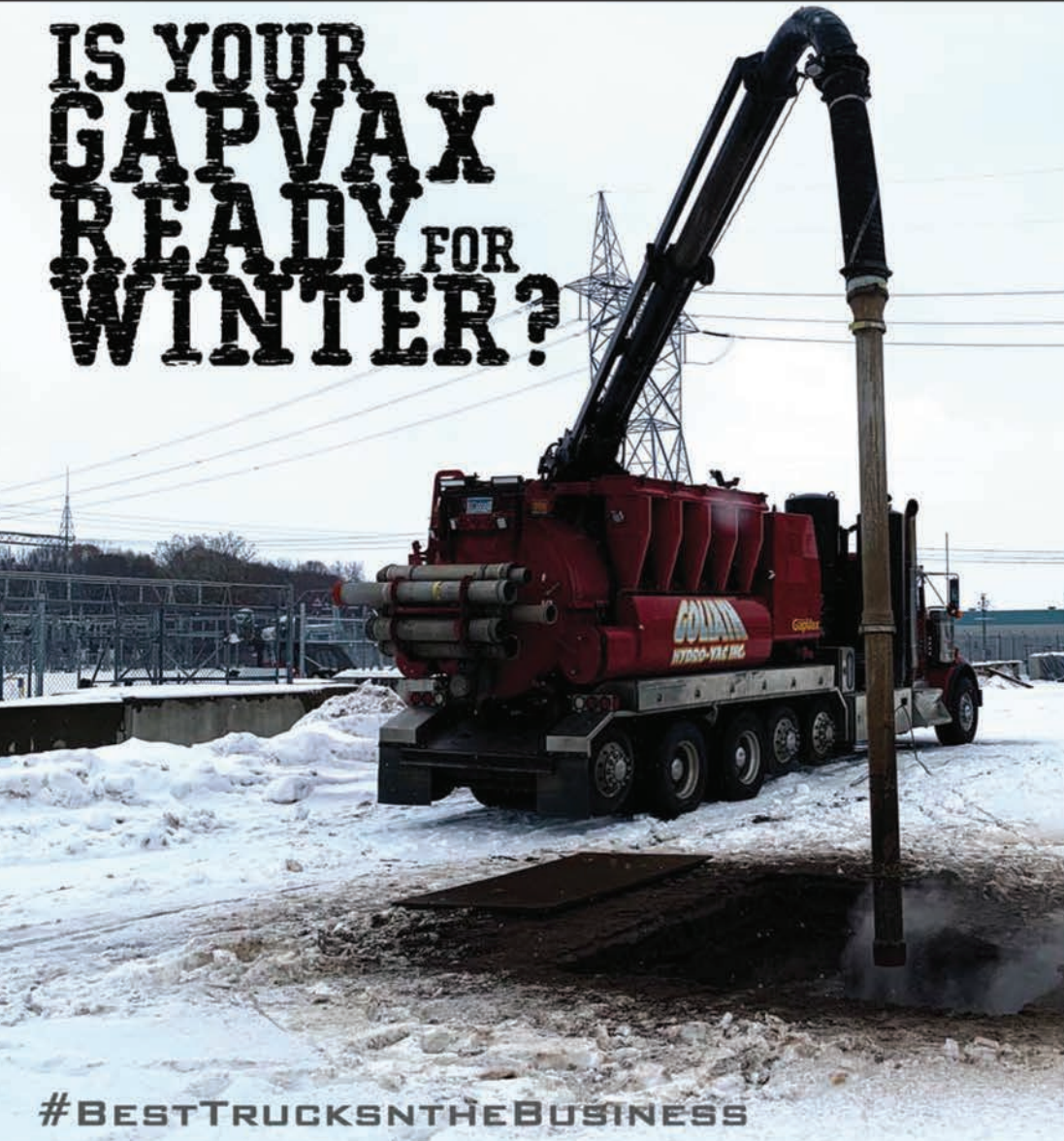
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