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FOR DRAIN AND PIPE CLEANING, INSPECTION AND REHABILITATION PROFESSIONALS

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NOVEMBER 2017

NO SLOWING DOWN

SERIAL ENTREPRENEUR BUILDS A FAMILY
PUMPING BUSINESS INTO A FAMILY OF
COMPLEMENTARY COMPANIES **PAGE 18**



TECH PERSPECTIVE

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MONEY MACHINES

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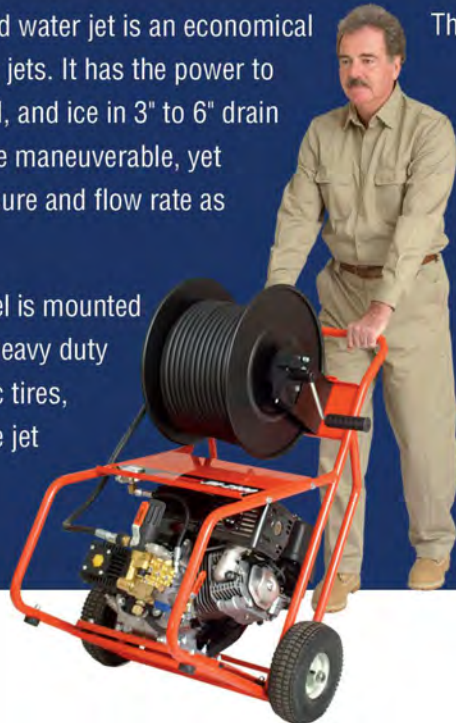
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ON THE COVER

Chuck's Septic Tank Sewer & Drain Cleaning owner Chuck Lang has built the septic pumping business his father started in 1970 into a family of companies providing a complete menu of water, wastewater and underground utilities services. (Photo by Amy Voigt)

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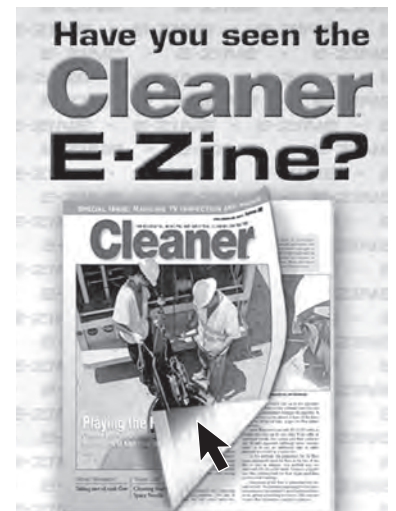
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Luke Laggis
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Setting an Example

Cleaning companies demonstrate civic responsibility and entrepreneurial spirit

By Luke Laggis

The city of Houston is just beginning to dig out from the wrath of Hurricane Harvey as I write this. Some of the city is still under water. Much of it is uninhabitable.

As focus shifts to cleaning up and rebuilding, the city is facing another flood — this one bringing hope rather than despair. Countless contractors are sending crews to help with cleanup and to get water and sewer systems back online.

I've said it before: You are first responders. You are health care professionals. Your role in community health is as critical as police, fire and emergency medical personnel. And the situation in Houston proved that.

Dauids Hydro Vac of White Bear Lake, Minnesota, immediately answered the call to help the people hurt by Hurricane Harvey. Company owner Mike Morehouse, along with his brother and father, packed up and headed to Houston on Aug. 29 while record rains were still drowning the area.

Morehouse and his family members didn't go to provide professional services or to pick up some extra business — they didn't even bring a hydroexcavator or their sewer cleaning equipment. Instead, they brought a boat. They drove through the night, registered at a checkpoint, and then changed into their wet gear and went to work.

They spent the next few days in some of the city's hardest-hit neighborhoods, going house to house to rescue those who needed help. They spent another day helping stranded residents get the medicine they needed. They weren't there for business. They weren't being compensated. They were just there to help.

You can read more about Dauids Hydro Vac in this issue of *Cleaner* and more about the family's efforts to help the victims of Hurricane Harvey at www.cleaner.com.

MORE FOR YOU

This month's issue also features a profile of Chuck's Septic Tank, Sewer & Drain Cleaning.

I met Chuck Lang Jr. at the WWETT Show earlier this year. His entrepreneurial enthusiasm was immediately evident. We were introduced in the Vacall - Gradall Industries booth, next to a big hydroexcavation truck that had caught my attention days earlier. With its American flag and bald eagle motif covering the truck from bumper to bumper, it was hard not to notice.

The truck, it turns out, was Lang's and a pretty good representation of him and his business ventures as well. His father started the septic pumping outfit in the 1970s. Lang helped push the company into new services, and new services led to the spinoff of additional businesses. The hydroexcavator on the floor in front of us was a prime example.

It represented growth and the expansion of services. And that wrap — all of Lang's equipment is wrapped in that same motif. When his local vehicle wrap company couldn't keep up with his new equipment additions, Lang and his wife bought their own equipment, formed a new company and started doing the wraps themselves. He saw a void — an opportunity — and he took it. Entrepreneurialism at it finest.

In fact, the growth and proliferation of Lang's family of businesses covers so much industrial ground that we're featuring a trio of separate stories on those companies in this month's issues of *Cleaner*, *Pumper* and *Dig Different*.

There are lessons to be learned from each of these stories, and I hope they can help you make your business stronger.

Enjoy this month's issue. **c**

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THE RIGHT FIT

Selecting a CIPP Lining Supplier

With the exponential growth of pipe rehabilitation, now is the time to add pipe lining to your company's service offerings if you don't already. But looking for the right CIPP lining manufacturer for your business can be a challenge. The number of companies that have their own products and installation processes can be overwhelming. Here are some tips on how to navigate that process. >> cleaner.com/featured

BUSINESS BASICS

Why You Must Read the Fine Print of Loans and Liens

Everyone has done it: Added new software to a laptop or purchased something online with a credit card, and then scrolled through the lines of microscopic type that make up the terms and conditions and clicked "accept" without reading a word. Most of the time that kind of response doesn't matter. But when it comes to taking out a business loan, the fine print is a big deal because if a blanket lien is lurking there, you could be putting your entire business in jeopardy. >> cleaner.com/featured



OVERHEARD ONLINE

“If your city has a lot of shift workers, why not become the shift-working cleaner who works nights and takes the days off just like your customers do? Just a simple change like that will help you stand out while also automatically attracting customers.”

— 5 Ways to Beat Your Competition
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UNDERGROUND UTILITIES

Contractor's Locating Experience Aids Massive Bridge Project

AEI Subsurface, based in Rhode Island and featured in the October issue, has flourished by focusing on the utility locating market. The company's excavation customers are able to safely complete their jobs because of the critical locating work AEI takes on. In this online exclusive, read more about a complicated bridge construction project the company worked on in 2015 that is a prime example of what has led to AEI's success. >> cleaner.com/featured



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SERIAL ENTREPRENEUR BUILDS A FAMILY
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COMPLEMENTARY COMPANIES

BY KEN WYSOCKY
PHOTOGRAPHY BY AMY VOIGT

If Chuck Lang Jr. believes in only one thing, it's this: You have to spend money to make money.

About 15 years ago, Lang, the owner of Chuck's Septic Tank, Sewer & Drain Cleaning, took a financial leap of faith and invested roughly \$300,000 in a Vacall - Gradall Industries combination sewer vacuum truck equipped with a hydroexcavating package. It was a bold gamble at that juncture in the company's history.

"It was a big investment for us at the time," says Lang, whose company is based in Grove City, Ohio, just outside of Columbus. "But you have to be willing to take calculated risks in order to grow a business. You can't always play it safe. If we hadn't bought that truck, we wouldn't be in the position we're in today."

From humble beginnings in 1970 as just a septic tank pumping outfit started by Lang's father, Chuck Lang Sr., the business has grown into a multimillion-dollar-a-year company. It employs 20 people, owns a large fleet of equipment and vehicles worth millions of dollars, and is one of the bigger drain cleaning players in the region around Columbus.



◀◀ Michael Snider of Chuck's Septic Tank Sewer & Drain Cleaning operates the controls on a Harben trailer jetter while clearing a drainline.

ABOVE Bucky Skaggs (left) and Kevin Lyons launch a CUES lateral inspection camera through a manhole in front of the customer's home.

Moreover, Lang Jr. — a self-admitted serial entrepreneur — has started several related businesses that mesh well with septic tank pumping and drain cleaning. CST Utilities, for instance, does horizontal directional boring, hydro-excavating, and utility construction and locating. In all, he's started 10 different companies, which makes Chuck's Septic Tank, Sewer & Drain Cleaning more attractive to customers who prefer one-stop shopping for services.

"I just can't stop," he says of his entrepreneurial streak. "If I see any opportunity where I can bolt on a new service (to existing businesses) and capture work, I do it." What leads him to believe he can enter markets where he has no experience? "I just don't let anyone tell me I can't do it," he says. "I just do it. I'm not sure where it comes from, but we do pretty well. Every company I have feeds another business, and that one feeds another."

Commercial and industrial cleaning generates about 70 percent of the company's drain cleaning revenue, while residential work produces the balance. The company started out as a primarily residential contractor, but it now works for a wide array of commercial customers, ranging from industrial plants and schools, to restaurants and office buildings.

"Commercial work pays better and the jobs are a lot bigger, so we make a larger profit on those jobs," Lang says, explaining the company's slow transition from residential to commercial work. "Problems occur more frequently because drain systems in, say, restaurants get used a lot more than those in homes, and more usage leads to more drain problems."

profile

CHUCK'S SEPTIC TANK, SEWER & DRAIN CLEANING INC.

GROVE CITY, OHIO

OWNER: Chuck Lang Jr.

FOUNDED: 1970

EMPLOYEES: 20

SPECIALTIES: Septic tank pumping

SERVICE AREA: 40-mile radius around Grove City

WEBSITE: www.cstutilities.com



INDUSTRY VETERAN

Lang is no newcomer to the industry, having worked for his father since he was a young boy. "I went out with him ever since I was five years old," he says. "This really is the only job I've ever had. If I wasn't at school, I was with him. I started driving a tank truck when I was 16, working after school and on weekends."

In 2002, Lang became a half-owner of his father's company. He became the sole owner in 2012. His father, now 81, is retired but still comes to work periodically.

The company's slow conversion to a diversified business occurred when the Langs realized the local market for pumping septic tanks had become saturated. Expanding geographically wasn't a realistic option because it would've required lowering prices to unsustainable levels in order to compete against entrenched competitors. "The profit margins in the septic business are so small that it doesn't make sense to go to the next county over," Lang explains. "We realized that in the early 2000s. ... We already were the largest (waste) hauler in Franklin County and couldn't capture any more business."



Owner Chuck Lang (left) speaks with camera technician Kevin Lyons about a lateral assessment job in the control room of the inspection van.

“IF YOU RUN A BUSINESS AND YOU THINK A DOLLAR ISN’T WORTH SAVING, YOU’LL NEVER MAKE IT. EVERY DOLLAR YOU SAVE IS PROFIT – SAVE A DOLLAR HERE AND A DOLLAR THERE, AND IT ALL ADDS UP.”
 Chuck Lang Jr.

So the company headed in a different direction: drain cleaning. That, in turn, led to cleaning grease traps and collecting fat and oils for conversion into biodiesel fuels. “When you see opportunity, you just take it,” he says, explaining how he and his father entered new, unknown markets. “There was no teacher there to teach my dad or me. No one is going to teach you how to take away their business. So we learned as we went — just started doing it. Back then, they didn’t have all these classes and trade shows or YouTube videos.”

They made some mistakes, Lang says, but they gained experience.

As the company grew, so did its fleet of equipment. In addition to the Vacall - Gradall Industries sewer truck, the company owns two Harben trailer jetters, equipped with 300-gallon water tanks and pumps that generate pressure of 4,000 psi and 18 gpm; and a jetting truck on a Ford chassis with an FMC Technologies pump (2,500 psi at 65 gpm) and a 1,500-gallon water tank. Kaffenbarger Truck Equipment Co. and Ace Truck Body outfitted many of the company’s service vehicles with shelving and other accessories.

The company also owns two separator trucks, used for collecting fats, oil and grease. Marengo Fabricated Steel built out the trucks on Sterling 9500 chassis with 4,000-gallon steel tanks. The company also owns six vacuum trucks, used for cleaning septic tanks. The pump trucks were built out by Keith Huber Corp. (owned by Hol-Mac Corp.) on Peterbilt 335 chassis. Chuck’s Septic Tank, Sewer & Drain Cleaning also owns Ford, Chevrolet and GMC service vans that carry various sizes of drain cleaning machines made by Spartan Tool as well as RIDGID SeeSnake pipeline-inspection cameras and CUES push cameras.

“My philosophy is buy good equipment from companies with great customer service,” Lang says. “It’s not always just about the equipment. A lot of companies make good equipment these days, so all things being equal, I go with companies that provide the best service.”

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IT'S A WRAP: CONVERTING VEHICLES INTO ROLLING BILLBOARDS

When business opportunities knock, it's hard for Chuck Lang Jr. to not answer the door. A good example is the vinyl-wrap business, Rubberneck Imaging, that he started about two years ago. His wife, Becky Lang, runs the operation.

Why would Lang, the owner of 10 different businesses based in Grove City, Ohio — including Chuck's Septic Tank, Sewer & Drain Cleaning — get into producing vinyl wraps for commercial vehicles? Simple: dissatisfaction with existing vendors.

"I went to two or three places to get a service truck wrapped," Lang recalls. "And when I got the truck back, it didn't look that good and they didn't get it done quickly, either. It took about two weeks. So I told the guy I was going to buy a machine so I could produce the wraps myself. He just laughed."

Lang ended up having the last laugh. He invested approximately \$75,000 in various machines and software needed to produce wraps, including a commercial vinyl printing machine, a laminator and a vinyl cutter. Then he and Becky went about learning how to run them. "It took a lot of hours — many long nights," he says. "We messed up but just kept going back. We had to learn how to use the design programs and finally got it down."

"Becky was ready to pull her hair out when we started," he adds. "There are all kinds of tricks to keep a wrap from wrinkling and bubbling. There's basically an art to doing it right." Now, the company can produce a wrap for a service van in three to four days. Larger wraps — say, for a vehicle the size of a combination vacuum truck — might take up to a week and a half.

Lang says the venture has been a worthwhile investment, noting that a wrap for a combination vacuum truck could easily cost more than \$20,000, while a service-van wrap costs about \$6,000. "So we've already got our money back," he says.

What happens when all of his companies' vehicles are wrapped? Lang says he's not worried about idle equipment because he buys two to three new vehicles a month. "I don't really see an end to it," he says. In addition, the company is making wraps for a limited number of external customers, too.

Lang believes vinyl wraps are the best form of advertising for contractors, and that's a difficult point to argue after taking a look at the company's vehicles, which feature an eye-catching, red-white-and-blue patriotic theme.

"There's nothing better than a billboard going down the road," he says. "You're paying guys to drive down the roads anyway, so why not make the truck a billboard and attract attention? A vinyl wrap turns your company into a name brand overnight. I'd say it increased our sales in all of our businesses by about 30 percent."



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Michael Snider (left) runs the jetter while Dustin Robson feeds hose into a downspout drain.

“THIS IS THE THING: IF YOU DON’T PAY PEOPLE WHAT THEY’RE WORTH – A GOOD WAGE – THEY’RE GOING TO QUIT. THEN YOU HAVE TO TRAIN SOMEONE ELSE, AND THERE ARE COSTS ASSOCIATED WITH THAT.”
 Chuck Lang Jr.

TECHNOLOGY BOOSTS PROFIT

Lang says using GPS technology has improved the company’s profit margins by reducing truck-idling time, among other things. As a result, the company cut its annual fuel expenses by roughly 20 percent. The GPS system, made by Fleetmatics, also monitors things such as how long a vacuum truck’s PTO system runs, how fast technicians are driving, hard braking and so forth. “The system will send managers a text if a truck is idling too long,” he explains.

Company supervisors monitor their GPS screens all the time to make sure employees are working as efficiently as possible. “Look what it would cost you to have 20 guys standing around for even just 15 minutes a day,” he points out. “That comes out to hundreds of thousands of dollars a year.”

The GPS systems can also track engine-idling time, which helps the company knock down its fuel-tax liability. In Ohio, gas used while performing off-road activities can be deducted from the state tax companies pay on gasoline purchases. The GPS system uses sensors that track how much gas is burned during idling time and sends that data to a business-management system, also made by Fleetmatics. “It probably saves us from paying anywhere from \$5,000 to \$8,000 a year to the state in fuel taxes,” Lang says.

The business-management software also keeps track of many different metrics related to profit and performance. For instance, all technicians have an iPad that they use to clock in and out of jobs. That helps management determine how efficiently they operate. Furthermore, instead of having technicians write up an invoice that later is turned in for office workers to process and input into a program, they use the iPads to create an electronic invoice that then gets automatically entered into the management system.

CONTINUED >>



Bucky Skaggs (right) sets up for a sewer main inspection in Columbus, Ohio.



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Dustin Robson (left) and Michael Snider make adjustments while jetting a drainline for Fairmoor Elementary School in Columbus, Ohio.

“That takes out the data-entry step in the office,” Lang explains. “We probably save \$40,000 to \$50,000 a year by going paperless. A lot of times, you can’t read the technicians’ writing, which slows things down. But the iPad takes care of that, too.” Technicians can also enter other pertinent information that gets embedded in customers’ files in the management system.

“I believe in collecting a lot of data,” Lang says, explaining why he invested roughly \$35,000 in the business-management system. “The thing about it is that if you take care of dollars, they take care of you. If you run a business and you think a dollar isn’t worth saving, you’ll never make it. Every dollar you save is profit — save a dollar here and a dollar there, and it all adds up. And pretty soon, you can buy another septic truck, for example, or hire another employee.”

GROWTH BRINGS CHALLENGES

Building a business comes with its share of challenges. For Lang, the two biggest issues were finding the capital to keep buying the equipment needed to grow and finding the right people to help maintain that growth. For the former, Lang says establishing good credit and relationships with banks was critical. To help with the latter, he says the company offers above-average wages, a retirement plan and paid vacation time, plus it pays 100 percent of health insurance premiums.

“We also give them bonuses,” Lang adds. “This is the thing: If you don’t pay people what they’re worth — a good wage — they’re going to quit. Then you have to train someone else, and there are costs associated with that. So it’s better to just pay a decent wage to hold good employees. Some you won’t be able to hold, but if you pay a decent wage, employees will be more loyal to you.”

Continually upgrading and investing in new equipment also serves as a good recruiting tool. He says job candidates often comment about the company’s equipment. “They see our trucks going down the road and it pulls them in,” Lang notes.

He also emphasizes professionalism by requiring employees to wear company uniforms. He spends between \$40,000 and \$50,000 a year on uniforms for employees across all of his businesses, and he says it’s money well spent because in-the-field employees represent the public face of his various companies.

“They represent our company, and I want them to represent us the way they should,” he explains. “I’ve had companies show up at my door with employees that don’t wear uniforms, and it doesn’t look good — you don’t even know where they’re from. How do you know they’re not employees from a subcontractor? I want our customers to know exactly who they’re dealing with.”

MORE GROWTH ANTICIPATED

Looking back, Lang says he’s not surprised that the company grew; that’s what he envisioned would happen. What surprises him is how quickly it occurred. “We’re probably 10 times bigger in terms of revenue than we were seven or eight years ago,” he says. “We’ve really grown a lot in the last five years.”

As he looks ahead, he sees more growth for the company. “I don’t turn



MORE COVERAGE IN PUMPER AND DIG DIFFERENT

There’s much more to the Chuck’s Septic Tank story. The CST family of businesses is also featured in this month’s issues of *Pumper* and *Dig Different*. The companies’ services span the gamut, from directional boring and hydroexcavation to septic pumping and grease recycling, even custom-wrapping their own vehicles and equipment. They don’t just do it all, they do it all well.

>> Get the rest of the story in *Pumper* and *Dig Different*.



away work,” he says. “I’m not afraid to buy even more equipment and put more people to work. We’re in full-growth mode. I’m not slowing down. And Columbus and the surrounding cities are growing very quickly, so there’s plenty of work to go around.”

As a long-term goal, Lang says he’s aiming to double the size of the company within the next three to five years. “The only thing that would hold us back is if the economy takes a dive,” he says. “But it won’t be for lack of buying more equipment,” or adding on new businesses, as the case may be. **C**

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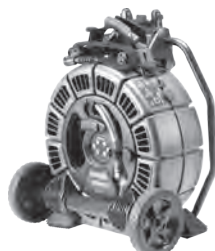
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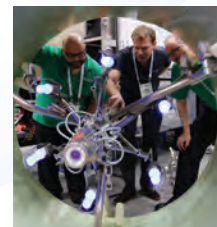
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A Rig Built for Cleaning Rigs

Contractor's customized vac truck packs cleaning punch on drilling pads in Pennsylvania oil fields

By Ken Wysocky

Costy's Energy Services' customized liquid vacuum truck from F.S. Solutions features four pressure-washing guns and a 4,620-gallon debris tank that serves primarily as a water tank. The truck has cut the time required to clean oilfield drilling equipment by 30 to 40 percent.

When drilling rigs aren't working, they're not making money for production companies. As such, when a rig is finished drilling, it's critical for contractors like Costy's Energy Services to clean all the associated components — frac tanks, drilling structures and the like — quickly and efficiently, so they can be moved on to the next drilling site as fast as possible.

To hasten the cleaning process and improve customer satisfaction, Costy's Energy Services — an oilfield-services company based in Mansfield, Pennsylvania — invested roughly \$350,000 in a customized liquid vacuum truck manufactured by F.S. Solutions. The hybrid truck features four pressure-washing guns for maximum cleaning productivity and a 4,620-gallon debris tank that serves primarily as a water tank, says Matt Kurzejewski, chief operating officer and vice president of Costy's Energy Services.

"We call it Poseidon, the god of rig wash," he says, referring to a decal on the side of the truck's tank. "We've found it's a very fitting nickname."

The bottom line: The truck decreases rig-cleaning time by an average of 30 to 40 percent, which translates into dramatically less downtime in between moves from one drilling pad to the next. "Downtime costs production companies about \$4,200 an hour," Kurzejewski says. "We did our last rig move in about one and a half days less than normal, so we saved that customer about \$151,000. And when you can provide better service for customers and save them money, too, it helps ensure long-term business relationships."

As a bonus, the truck is much easier to maneuver on congested drilling pads than the equipment the company used before. Drilling pads are

money machines

OWNER: Costy's Energy Services LLC, Mansfield, Pennsylvania

VEHICLE: Customized vac truck with four high-volume pressure washers

FUNCTION: Cleaning drilling-rig components in Pennsylvania oilfields

FEATURES: 2018 Kenworth Truck Co. T880 tandem-axle chassis; four pressure-washing guns; hydraulically driven, 350 cfm vane vacuum pump; two 800,000 Btu water heaters; two hydraulically driven triplex water pump systems (20 gpm at 3,000 psi each) with infinite variable-flow control

WEBSITE: www.costysenergy.com

COST: About \$350,000

F.S. SOLUTIONS WEBSITE: www.fssolutionsgroup.com

notoriously congested — a thicket of vehicles, equipment and structures that compete for elbow room in a space that measures roughly 350 by 350 feet. And the drilling rig itself consumes almost half that space. But maneuvering in close quarters is much less of an issue now for Costy's Energy Services, courtesy of the truck's 38-foot length.

The one-of-a-kind unit is built on a Kenworth Truck Co. T880 tandem-axle chassis. The truck features a hydraulically driven, 350 cfm vane vacuum pump; two 800,000 Btu water heaters; and two hydraulically driven triplex water pump systems (20 gpm at 3,000 psi each) with infinite variable-flow control. (Each pump system supplies water for two pressure-washing guns; when used in tandem, the guns' water flow maxes out at 10 gpm.)

WANTING MORE

Kurzejewski's father, Dan, first approached F.S. Solutions officials approximately two years ago about developing a customized vehicle. At the time, the company's rig-cleaning method required a dually pickup truck, a 26-foot-long trailer equipped with four separate pressure washers and a 30-foot-long water truck — an unwieldy combination on crowded drilling pads.

"He wanted to build something much more bad-ass than what we had ... something no one else would have," Kurzejewski says. "He wanted more volume of water per minute and more pressure to cut cleaning time and significantly improve rig-moving time."

A key feature on the truck are the pressure washers, which Kurzejewski says are very reliable because they're hydraulically powered. "If the pumps aren't hydraulically driven, they tend to need a lot of maintenance and repairs on a consistent basis," he says.

The pressure washers are used on everything from derrick components to frac tanks, which are particularly difficult to clean. How dirty can a frac tank get? Kurzejewski says that to get an idea, imagine opening a 30-year-old oil can. "Empty it out, jump into it and roll around inside the can," he says. "That's how dirty it can get. The drilling fluids thicken and solidify, and everything on the pad has to be cleaned before it can be moved."

IMMEDIATE IMPACT

Costy's Energy Services took delivery of the truck in early June. After the first job, Kurzejewski came away impressed with its performance. "It definitely gave us increased efficiency and productivity," he says. "And the customer was even more impressed than we were because they'd never seen anything like it before."

To run all four pressure washers at the same time still requires four employees, plus a supervisor to monitor the truck. The company's old cleaning configuration also required four employees and a supervisor, so there's no savings in terms of labor and operational costs, Kurzejewski points out. But in terms of improving customer service, there's no question the unit is making an impact, he says. In addition, since the tank can also be used to vacuum up liquid waste, there's potential for eventually breaking into new business markets.

"The truck cost about three times as much as the equipment we used to have (to do the same jobs)," he points out. "But it has created an uptick in our business — the word gets around in the oil-fields. Overall, it's increasing our performance and enhancing our business relationships. So it's been a very worthwhile investment in the long term." **C**

"It definitely gave us increased efficiency and productivity. And the customer was even more impressed than we were because they'd never seen anything like it before."

Matt Kurzejewski

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Davids Hydro Vac owners Mike and Heather Morehouse (front) with their staff and fleet of Vactor HXX hydroexcavators outside the company's headquarters in White Bear Lake, Minnesota.

MAKING SOMETHING HAPPEN

MINNESOTA HYDROVAC SPECIALIST EYES NEXT MOVE AFTER BUILDING A 12-TRUCK OPERATION WITH TWO LOCATIONS IN JUST EIGHT YEARS

BY KEN WYSOCKY PHOTOGRAPHY BY BRAD STAUFFER



Mike Morehouse faced plenty of obstacles when he started his business in 2009, which makes the company's growth and success even more impressive.

Eight years later, Davids Hydro Vac — based in White Bear Lake, Minnesota — has 32 employees, 12 hydroexcavation trucks and a satellite office in South Dakota.

"I feel very fortunate and blessed that I was able to put all this together," says Morehouse. "When I started out, I was 29 and had nothing. I was at a point where I needed to make something happen."

FINDING CONNECTIONS

Morehouse's wild ride began in 2009 when he lost his job. He had just \$18,000 to his name, a couple of credit cards, and a pregnant wife.

Through business contacts, he knew about some work coming down the pipe and decided to strike out on his own. He landed a contract to do utility line locating for an energy company on a pipeline project in northern Minnesota.

The bad news: He didn't have a hydrovac truck. The good news: When it looked as though he might land the contract, he took a friend's advice and contacted Jack Doheny of Jack Doheny Cos., a 40-year veteran of vacuum truck equipment sales, rental and service.

Davids Hydro Vac operator John Shuneman (left) and laborer Jason Bauer vacuum debris from a utility line cleanout in downtown Minneapolis.

profile

DAVIDS HYDRO VAC INC.

WHITE BEAR LAKE, MINNESOTA AND TEA, SOUTH DAKOTA

OWNERS: Mike and Heather Morehouse

FOUNDED: 2009

EMPLOYEES: 32

SERVICES: Hydroexcavation, jetting, manhole and catch basic clean-up, holding-tank cleaning

SERVICE AREA: Upper Midwest

WEBSITE: www.davidshydrovac.com



“I HAD TO BORROW MONEY FROM MY FAMILY AND DIDN'T EVEN KNOW HOW I'D PAY FOR FUEL. **BUT I KNEW I HAD TO GO BIG AND RISK IT ALL.**”

Mike Morehouse

“Tom and Jack Doheny were instrumental in getting me started,” Morehouse says. “My business wasn’t even incorporated yet, but Jack took a liking to me. We threw a rental agreement together in two weeks. I had to borrow money from my family and didn’t even know how I’d pay for fuel. But I knew I had to go big and risk it all. If nothing else, I felt confident in myself because I knew I was good at what I do.”

Jack Doheny says he could tell Morehouse understood the industry and knew what he was doing. “Hard work doesn’t scare him. Plus, I was raised in Minnesota, and I know the work ethic people have there — they don’t mind getting their hands dirty — so I didn’t consider it a big risk. Even over the phone, I could tell Mike was a straight shooter.”

Used vacuum trucks are hard to come by quickly, but Jack Doheny Cos., had just taken in a rental hydroexcavator (a 2007



ABOVE Davids Hydro Vac operator Randy Becker guides the Vactor HXX hydroexcavator’s boom inside a shored trench while he and laborer Nate Otto clear the site for a utilities relocation project.

>> One of Davids Hydro Vac’s hydroexcavators rolls to its next work site on a residential street in Minneapolis.

Vactor HXX PD) that would be ready in seven days — just two days before Morehouse was to start work on the pipeline project. So after using an online service to incorporate their company, he and his wife, Heather, flew to Michigan to pick up the truck and drive it back home.

“We were in such a hurry because I had to be in Bemidji, four hours north of the Twin Cities, in less than two days,” Morehouse says. “While Heather was filling out paperwork, people from Doheny were helping me grab everything I’d need. Then they gave me a slap on the rear, and we hit the road. About eight hours after we got home, I was headed for the job site.”

UPS AND DOWNS

The four-month-long pipeline job went well, but after that, work became scarce, and when Morehouse couldn’t make the lease payments, he had to give the truck back. “I felt like I’d let everyone down,” Morehouse says.

But after Morehouse found a job as a jetter-truck operator at a Wisconsin-based company, he got a call from another power utility that had heard about him through word-of-mouth. The company was dissatisfied with its hydroexcavating contractor and wanted to hire Morehouse. “Jack had told me that if I ever needed anything, I should just give him a call,” he says. “So I did, and we went through the whole thing all over again in August 2010.”

After that job, things slowed again, but Morehouse kept passing out business cards and making contacts. Soon, he was receiving steady work. “The exposure I received from working for that power company was key,” he says. “All it takes is one person who notices you do good work to go tell someone in the construction field that there’s a hungry kid out there busting his tail.”

Business quickly grew, and Morehouse leased a second truck in March 2011, a third in June 2012 and a fourth in March 2014. Making the payments was still difficult, but he increased cash flow in 2012 by finding a bank willing to finance the three trucks he owned at the time. That made his monthly payments more manageable.

HEADING WEST

Dauids Hydro Vac has continued to grow. The company is now running 12 Vactor HXX hydroexcavators, with a satellite office in Tea, South Dakota.

“We had been doing market research and paying attention to where our customers were,” Morehouse says. “When people think of expanding, it’s often to a heavily populated area because that is where you think the need for your trucks is. I didn’t feel like going where there were other truck



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companies set up. I didn't feel like that was necessarily the right move, and I didn't want to compete with a lot of people."

Tea is a small community near Sioux Falls, South Dakota, with a population just shy of 4,000. It's about a six-hour commute from White Bear Lake. "We're learning a lot over there," Morehouse says. "This is the first time we've done this, so we're learning how to adapt and deal with different situations."

The company keeps one hydrovac in Tea permanently but sends two more trucks from its headquarters when work requires it. The company is also looking for more local people to add to the staff there and support the community.

As the company's fleet has grown, so has the number of employees. That required Morehouse to do something he thought he never would do — step back from operating the trucks and focus on the company's growth. Hiring general manager Dustin Odegaard has allowed him to do just that.

"This is the first year that I have not had to operate a hydroexcavator," Morehouse says. "I wanted to prove to myself and everybody else that I didn't have to be the operator anymore — that the company can run without me doing that every single day. I should've gotten out of the truck two years ago. I should've listened to the people who were telling me to do that back then."

Getting out of the truck has also allowed Morehouse to attend conventions and trade shows. "It has literally opened my eyes to what the industry has to offer," he says.

**"IT'S ALL ABOUT TIME.
TIME IS MONEY, AND
CUSTOMERS DON'T
WANT TO PAY US
TO WASTE TIME."**

Mike Morehouse



GIVING CUSTOMERS MORE OPTIONS

Davids Hydro Vac initially focused on the typical hydroexcavation jobs — potholing, utility locating, trenching. Over time though, owner Mike Morehouse learned more about the machine's capabilities and began to add services.

The White Bear Lake, Minnesota-based company now offers many sewer cleaning services, such as manhole and catch basin cleanup, jetting, holding-tank cleanouts and water main break cleanups.

"It's definitely a risk any business owner has to take, and we took it. It's paid off so far," Morehouse says. "It just gives customers another reason to call us "My main goal is to get the vac truck out there, so we have services that complement hydroexcavation."

Morehouse is quick to note that the company isn't looking to get into those sewer-cleaning services full time. They were added to supplement the services they already provide.

To help with those jobs, Morehouse bought a trailer unit from Vactor about two years ago at a trade show. "It's been a nice addition," he says. "It's held its weight with those jobs, and it satisfies most of the customers. And I didn't need to invest in a \$500,000 truck."

The company's sewer cleaning work is mostly residential. Morehouse prefers to leave large municipal jobs — sewer cleaning, lining and other services — to other contractors or the cities themselves.

About 20 percent of the company's annual business is water and sewer related, with most of that coming from water main breaks and lift station cleanouts.

"A lot of it is emergency stuff," Morehouse says.



Davids Hydro Vac laborer Jason Bauer (left) and operator John Shuneman clean out a utility access point along a street in downtown Minneapolis.

VARIETY OF APPLICATIONS

Morehouse prides himself on finding ways to work smarter, cut operating costs and serve customers better. A good example is the network of dumping sites he has established in strategic locations to reduce travel time.

"It's really hard to find places where you can dump slurry," he notes. "So whenever I had extra time, I would drive out to farmers and sand and gravel pits and ask if they'd accept slurry. I got a lot of 'noes,' but also received enough 'yeses' that I now have sites in and around the Twin Cities metro area. It's all about time. Time is money, and customers don't want to pay us to waste time." He has done the same thing to establish convenient water-refill locations.

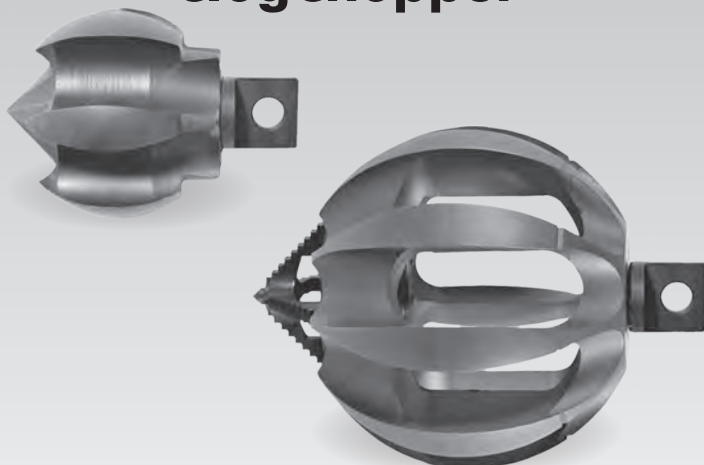
Morehouse enjoys the variety of ways he can wield hydroexcavation technology

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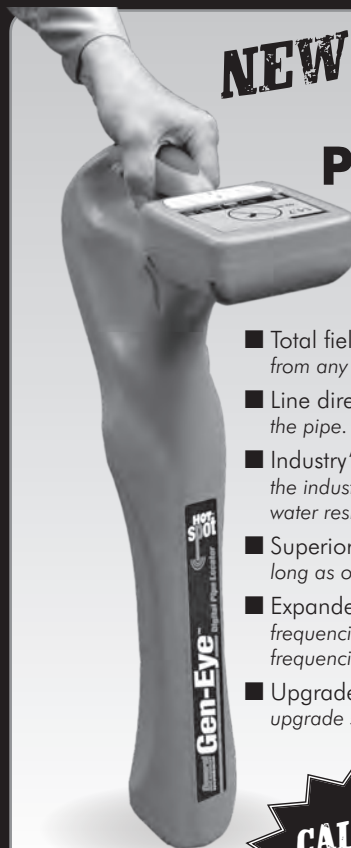
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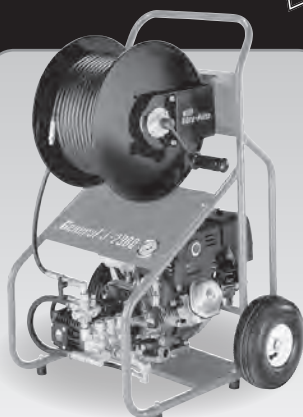
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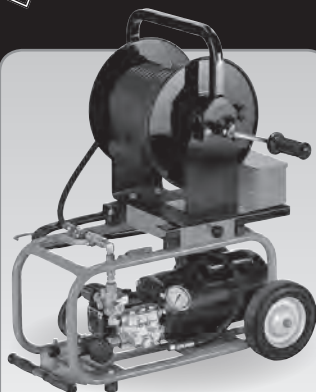
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Mike Morehouse

to solve customers’ problems. One day, he might expose building footings for a client who needs to know how deep they’re set. The next day, he might excavate in the basement of a giant building, perhaps 300 feet away from the truck. Or work on tunnel maintenance. Or potholing.

Emergency work is also part of the mix. Davids Hydro Vac excels at challenges that other companies don’t want or aren’t equipped to handle. In one instance, a contractor in Minnesota was boring under a lakebed to install a natural gas pipeline when a ground fracture released drilling mud into the shallow lake.

To solve the problem, Morehouse and his crew took a 6-foot-diameter, 6-foot-long piece of culvert pipe and set it down vertically over the fracture, containing the drilling mud. Then, they strung 400 feet of hose from shore and vacuumed mud out of the pipe. The truck expelled the mud through a decant hose and into a tail ditch, where vacuum trucks from another company sucked it up and hauled it away. “I was just blown away that one of our trucks could pull material that far,” he says.

SAFETY STANDARDS

Regardless of the application, safety is paramount in hydroexcavating, for employees’ well-being and to keep customers satisfied. Davids Hydro Vac employees undergo a year of training before they’re allowed to operate a \$500,000 hydrovac truck on their own.

“It only takes one incident to cause a lot of problems, so we’re all about safety, safety, safety,” he says. “We might work for power companies and then water and sewer utilities and then mainline gas general contractors, and they all have different safety standards.

“Plus there are different ways to excavate soil. Most people think you’re just spraying water on the ground, but it’s a science — there’s a right way to do it. And you also need to know what you can get the truck into and out of. These are big trucks, and there’s a lot going on at construction sites. That’s why it takes a year for training. It’s for my comfort level and for my customers. I want our customers to know they’re getting an experienced operator.”



Randy Becker guides the Vector HXX hydroexcavator’s boom inside a shored trench while he and laborer Nate Otto clear the site for a utilities relocation project.

A BRIGHT FUTURE

After operating for eight years, Morehouse finally feels established: “We’re here to stay. We’ve got a good reputation, and that makes me want to work even harder. The guys and I all have something to prove.”

Morehouse says his company isn’t done growing yet. He’s already eyeing up an expansion into western Wisconsin in the next few years and hopes to continue building a presence in the Dakotas. “I’m going to stay focused and just be me,” he says.

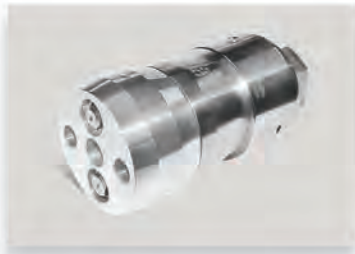
Morehouse and his wife still have the David-versus-Goliath mentality that spurred the idea for the company, and they say that will never go away. “I’m going to fight for the little guy, and I want to be a part of change,” Morehouse says. “I’m going to advocate for hydroexcavators and for the industry. I think our industry is full of amazing people who work really hard for a living.” **C**

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Jet Cutter Saves Development Project

Operators overcome a myriad of challenges while removing 25 yards of concrete from sewer system

By Jared Raney

When concrete slurry poured into sewer mainlines in a coastal condo development near Los Angeles, the crew had no idea they were about to block all the sewage flow from nearby Marina del Rey.

During ground stabilization work on the development, the general contractor bored into an unmarked sewer line. After unknowingly piercing the 10-inch line, the crew proceeded to pump a mix of cement and natural aggregates into the ground under pressure. It wasn't until they had already poured more than 25 cubic yards of the slurry mix into what they thought was just very aerated soil that the mistake was realized.

The slurry flowed into adjacent 15- and 18-inch sewer lines, hardening into an impassable blockage between the marina and the wastewater treatment plant.

The contractor struggled to find viable solutions short of complete replacement — which would have meant redoing stabilization work and essentially starting the project from scratch, not to mention the inordinate effort of replacement itself. Eventually, a call was made to Pacific Sewer Maintenance in hopes that its new high-pressure jet cutting system from IDTec could provide a quick fix.

But there was one catch: The company had only taken delivery of its new truck a day before. The team was mostly untrained and completely unpracticed on the equipment.

BELOW: A cleaning crew vacuums small debris from a downstream manhole during the concrete removal process.



<<<< A general contractor was desperate for a solution after inadvertently pouring 25 yards of ground-stabilizing concrete slurry into sewer mainlines in a coastal condo development near Los Angeles. Eventually, Pacific Sewer Maintenance stepped in with a high-pressure jet cutting system from IDTec.

>>>> Pacific Sewer Maintenance owner Scott Gayman monitors progress as his crew jets concrete from a sewer line.



“The pipe itself is under sea level most of the time, so it’s regularly got salt water flowing through it, and we’re working in a very harsh environment.”

Scott Gayman

“We had received almost no training by the time we got started because the training was meant to commence following the commission of the truck,” says Scott Gayman, owner of Pacific Sewer Maintenance. “But the contractor understood that; we were absolutely clear with them.”

Luckily, as Gayman says, “the equipment itself is fairly straightforward — not terribly difficult to learn. The thing that takes awhile, as with all equipment, is learning finesse.”

LEARNING CURVE

His operators struggled for the first few weeks, including a few beginners’ mistakes resulting in downtime for equipment repairs.

“Total time on the project was about 2 1/2 months,” Gayman says. “Because the equipment was new to us, and we were — or are — new operators, we didn’t really understand the finesse of the machine.”

Inexperienced operators trying to maneuver the unit through and around the abrasive chunks of cement took a toll on the hose that supplied water to the high-pressure nozzle. Eventually, they were forced to find a different type of hose that was more fitting for the situation.

“We were cutting through our hose on a regular basis,” Gayman says. “There were a few weeks — maybe near three weeks out of that 2 1/2 months — where the equipment was down because we had damaged something.”

Being new to the equipment also caused difficulties during repairs. Crew members had to learn the equipment’s parts and components, as well as how to replace them, on the fly.

“In the long run ... with the damage that we did to it because of the situation we were in, we learned a massive amount of information regarding repairs, maintenance and care for the equipment,” Gayman says. “In 2 1/2 months, we went through the crash course, learning about a year’s worth.”

DESPERATE MEASURES

An unknown system run by an inexperienced team may seem risky, but site factors ruled out other

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◀◀◀ Crews used a Vactor jet/vac truck to suck up small debris while a catch basket in the manhole took care of larger chunks. Some pieces were so big that workers had to maneuver them out manually using hooks and other tools attached to long poles.

BELOW Pacific Sewer Maintenance took on the job only a day after taking delivery of the new high-pressure jet cutting truck.



“We were at a manhole on the far end of the obstruction, trying to get the cement removed upstream from the manhole we were at while all of the pumps were also running inside the manhole.”

Scott Gayman

options, including complete replacement, and compounded the need for a better solution.

With only one other system of its kind in the U.S. at that time, the jet cutter was an unknown, but after a demonstration, the contractor was willing to take a leap of faith.

The job provided many challenges and learning experiences for the fledgling crew, including obstacles of the bay area sewer system. “The pipe itself is under sea level most of the time, so it’s regularly got salt water flowing through it, and we’re working in a very harsh environment,” Gayman says.

Geography wasn’t the only tricky factor: Four bypass pumps shared the manhole they were working out of. “We were at a manhole on the far end of the obstruction, trying to get the cement removed upstream from the manhole we were at while all of the pumps were also running inside the manhole,” Gayman says.

The Pacific Sewer Maintenance team wasn’t even the only crew working out of the manhole because the process required a separate cleaning crew to remove the concrete once it was broken up.

“The most difficult part of the job was coordination,” Gayman says. “Organizing when the pumps needed to be on and off, and then organizing our work against when the pumps needed to run, the job site crews that needed to be on site, and the cleaning crew — balancing all of those was difficult in the first few weeks.”

Crews alternated first breaking up the concrete with the jet cutter and then using a Vactor to suck up small debris while a catch basket in the manhole

took care of larger chunks. Some pieces were too big even for that, so workers had to maneuver them out manually using hooks and other tools attached to long poles.

“Once we kind of got into the work and became a more cohesive unit, the job became much easier,” Gayman says.

A BETTER SOLUTION

While concrete spills aren’t an everyday issue for utilities, they aren’t uncommon, either. Historically, there has been no way to remove concrete from pipelines, leaving only two options: complete replacement — a costly and time-consuming prospect — or do nothing.

“It’s an unsolvable problem without digging, so until they can get a better solution, which is what we hope to do, they just have to do regular service on it and hope everything works out,” Gayman says. “They can’t do anything about it, and it just becomes part of the system.”

One such blockage that had been “part of the system” for four years in a neighboring town was cleared easily with the 14,500 psi jet cutter. That job took only three days.

Since taking delivery of the truck in April, the company has used the system on three contracts, and it is already planning on purchasing a second truck to expand service to northern California, possibly farther. Gayman says he anticipates using it for everything from root removal and calcium deposits, to lateral reinstatement and lining prep.

INITIAL SUCCESS

Though untrained, Gayman and his team successfully cleared all the concrete from the Marina del Rey main, earning approval not only for a growing segment of their business, but also for a promising new solution in the sewer cleaning industry.

“Once the process becomes really known, we feel that there’s going to be a high demand,” Gayman says. “It is something that is more common than you hear about, but it’s been one of those unsolvable issues — up until now.” **■**

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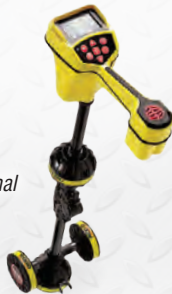


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Cleaner

SEWER NOZZLE

COMPANY DIRECTORY 2017

COMPANY	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
All Jetting Technologies, Inc. 2740 Martin Downs Blvd., Ste. 318, Palm City, FL 34990 772-286-1218 • (f) 772-286-0069 www.alljetting.com info@alljetting.com SEE AD ON PAGE 88 	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		
Aqua Mole Technologies Inc. 11050 Industrial First Ave., North Royalton, OH 44133 877-457-2782 • 440-237-2984 (f) 440-237-2987 www.aquamole.com aquamole@sbcglobal.net SEE AD ON PAGE 82 	Custom Drilled Nozzles	Aqua Mole offers custom designs for specific applications: cleaning from downstream up, from structure out to the main, long distance pulling, specific types of debris removal, etc. We can work with ANY jetter, no matter the flow rate.							
	Monster Mole	Dual angle nozzle used to clean sand, gravel and grit	2" to 24"	1.7 to 80	200 - 10,000	.3 oz for 1/8" NPT up to 16 oz for 1" NPT	1	6	1/8", 1/4", 3/8", 1/2", 3/4", 1" NPT
	RH Super Thruster (15° or 20° rear angle)	Maximizes distance capability w/ penetrating power	2" - 24"	1.7 to 25	200 - 10,000	.5 oz for 1/8" NPT up to 3.0 oz for 1/2" NPT	1	3, 4, or 6	1/8", 1/4", 3/8", 1/2" NPT
	Degreaser & High Thrust Degreaser	Clearing grease blockages, pushing debris forward	2" - 24"	2.5 to 80	200 - 10,000	.3 oz for 1/8" NPT up to 16 oz for 1" NPT	3	6	1/8", 1/4", 3/8", 1/2", 3/4", 1" NPT
	Super Pusher	Optimized nozzle for pushing debris forward	2" - 24"	2.5 to 25	200 - 10,000	.5 oz for 1/8" NPT up to 3.0 oz for 1/2" NPT	3	6	1/8", 1/4", 3/8", 1/2" NPT
	Thruster 3R, Thruster 4R, Thruster 6R	Clear blockages going upstream	2" - 24"	1.7 to 80	200 - 10,000	.3 oz for 1/8" NPT up to 16 oz for 1" NPT	1	3, 4, or 6	1/8", 1/4", 3/8", 1/2", 3/4", 1" NPT
	Blind Thruster 3 Rear, 4 Rear, or 6 Rear (jets)	Pulling distance (more jets = more coverage)	2" - 24"	1.7 to 80	200 - 10,000	.3 oz for 1/8" NPT up to 16 oz for 1" NPT		3, 4, or 6	1/8", 1/4", 3/8", 1/2", 3/4", 1" NPT
	Flusher, Flusher 8R & Flusher 12R	45° rear angle for flushing line from either end	2" - 24"	1.7 to 100	200 - 10,000	.3 oz for 1/8" NPT up to 16 oz for 1" NPT		6, 8, or 12	1/8", 1/4", 3/8", 1/2", 3/4", 1" NPT
	Corner Mole (3 jets @ 45 degree, w/ one 90 degree side jet)	Helps operator to make tight turns	2" - 24"	1.7 to 25	200 - 10,000	.3 oz for 1/8" NPT up to 1.5 oz for 1/2" NPT	1	3 @ 45°, 1 @ 90°	1/8", 1/4", 3/8", 1/2" NPT
	Rotor Jet, 90 degree side jet, 45 degree rear	360° of coverage for polishing a line after cleaning	2" - 24"	2.5 to 50	500 - 10,000	.7 oz for 1/8" NPT up to 11 oz for 3/4" NPT		2 side / 2 rear @ 45°	1/8", 1/4", 3/8", 1/2", 3/4" NPT
Arthur Products Co. 1140 Industrial Pky., Medina, OH 44256 800-322-0510 • 330-725-4905 (f) 330-722-2698 www.arthurproducts.com apc@apclsq.com SEE AD ON PAGE 50	Cnt-r-KUT™ Elite Kit	Roots and Other Blockages	2" - 12"	4 to 80	2,000 - 10,000	varies	Cust Spec	Cust Spec	3/8" - 1/2"
	Cnt-r-KUT™ Elite Mini Kit	Roots and Other Blockages in tight spaces	2" - 12"	4 to 80	2,000 - 10,000	varies	Cust Spec	Cust Spec	3/8" - 1/2"
	Cnt-r-KUT™ Basic Kit	Deicing/Degreasing, Penetration, Flushing	2" - 12"	2.5 to 80	2,000 - 10,000	varies	Cust Spec	Cust Spec	3/8" - 1/2"
	Cnt-r-KUT™ Basic Mini Kit	Roots and Other Blockages	2" - 12"	2.5 to 80	2,000 - 10,000	varies	Cust Spec	Cust Spec	3/8" - 1/2"
	Cnt-r-KUT™ Tow Hook	Pulling and towing Applications	2" - 12"	2.5 to 80	1,200 - 15,000	varies	Cust Spec	Cust Spec	3/8" - 1/2"
	Cnt-r-KUT™ Tow Hook Mini	Pulling and towing Applications	2" - 12"	2.5 to 80	1,200 - 15,000	varies	Cust Spec	Cust Spec	3/8" - 1/2"
	Mini-Mole	Special tapered thread for use in small tube cleaning on rigid lance	.200" - 1"	1.7 to 20	1,200 - 10,000	varies	Cust Spec	Cust Spec	Special tapered thread
	Rodder Jets	General tube cleaning for use on Rigid Lance	.250" - 1"	1.7 to 40	1,200 - 15,000	varies	Cust Spec	Cust Spec	Various male thread sizes
	Cnt-r-KUT™ Centering Device	Flexible elastomer for nozzle centering - for your existing nozzles	1" - 24"	1.7 to 80	1,200 - 10,000	varies	Cust Spec	Cust Spec	3/8" - 1/2"
	Mega-Thruster PX Revolver	Full 360° rotation for cleaning & polishing; designed for long runs	1" - 24"	1.7 to 80	1,200 - 10,000	varies	4	3	3/8" - 1/2"

COMPANY	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
Chempure Products Corp. PO Box 740, Bolivar, OH 44612 800-288-7873 • 330-874-4300 (f) 330-874-4448 www.rootrat.net lloyd@chempure.com SEE AD ON PAGE 42	Root Rat	Root & Enc	2" - 30"	4 to 150		0.5 lbs. - 5 lbs.			
Envirosight 111 Canfield Ave., Unit B3, Randolph, NJ 07869 866-936-8476 • 973-252-6700 (f) 973-252-1176 www.envirosight.com office@envirosight.com SEE AD ON PAGE 5 	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"
Enz USA Inc. 1585 Beverly Ct., Unit 115, Aurora, IL 60502 877-369-8721 • 630-692-7880 (f) 630-692-7885 www.enzusainc.com sales@enzusainc.com SEE AD ON PAGE 16 	Bulldog Antiblaster	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	Penetrating 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"	
General Pipe Cleaners 1101 Thompson Ave., McKees Rocks, PA 15136 800-245-6200 • 412-771-6300 www.drainbrain.com info@drainbrain.com SEE AD ON PAGE 2	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"
Jetstream of Houston 5905 Thomas Rd., Houston, TX 77041 800-231-8192 • 832-590-1300 (f) 832-590-1304 www.waterblast.com sales@waterblast.com SEE AD ON PAGE 25	15K Orbi-Jet	Surface Cleaning	N/A	25	15,000	N/A	4		1/2" NPT Female
	15K Straight Tip	Surface Cleaning	N/A	51.7	15,000	N/A	1		1/4" NPT Male
	15K Fan Tip	Surface Cleaning	N/A	51.7	15,000	N/A	1		1/4" NPT Male
	15K Rotomag	Pipe Cleaning	>3"	50	15,000	N/A	2	2	3/4" NPT Male
	15K Tube Spinner w/Nozzle	Tube Cleaning	>.5"	50	15,000	N/A	Various	Various	Various
	15K Compact Nozzle	Tube Cleaning	>.5"	36.2	15,000	N/A	Various	Various	Various
	15K Evaporator Nozzle	Tube Cleaning	>.5"	36.2	15,000	N/A	Various	Various	Various
	15K Abrasive Nozzle	Surface Cleaning	N/A	8	15,000	N/A	Various	Various	3/8" NPT Female
	20K Orbi-Jet	Surface Cleaning	N/A	7.5	20,000	N/A	4		9/16" MP Female
	20K Straight Tip	Surface Cleaning	N/A	20.7	20,000	N/A	1		Gun Nozzle Holder
	20K Fan Tip	Surface Cleaning	N/A	20.7	20,000	N/A	1		Gun Nozzle Holder
	20K Rotomag	Pipe Cleaning	>3"	55.3	20,000	N/A	2	2	3/4" MP Female
	20K Pineapple	Pipe Cleaning	>3"	7.6	20,000	N/A	4	6	3/4" MP Female
	20K Tube Spinner w/Nozzle	Tube Cleaning	>.5"	14.6	20,000	N/A	2	2	Various
	20K Compact Nozzle	Tube Cleaning	>.5"	41.8	20,000	N/A	Various	Various	Various
	20K Evaporator Nozzle	Tube Cleaning	>.5"	41.8	20,000	N/A	Various	Various	Various
	20K Abrasive Nozzle	Surface Cleaning	N/A	4.8	20,000	N/A	Various	Various	9/16" MP Female
	40K Tornado Nozzle	Surface Cleaning	N/A	8.2	40,000	N/A	3 to 4		9/16" Button Seal
	40K UHPE Nozzles	Tube Cleaning	>.5"	7.8	40,000	N/A	Various	Various	Various

SEWER NOZZLE

COMPANY DIRECTORY 2017

COMPANY	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	
MyTana Mfg. Co. Inc. 746 Selby Ave., St. Paul, MN 55104 866-948-7576 • 651-222-1738 (f) 651-222-1739 www.mytana.com mytana@mytana.com SEE AD ON PAGE 23	Cornering	Navigating Elbows	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	Paper Products	1 1/2" - 8"+	2 to 8	1,500 - 3,000	< 8 oz.	1	3	1/8" - 1/4" - 3/8" - 1/2"	
	Blind Thrust	Pulling Power	1 1/2" - 8"+	2 to 8	1,500 - 3,000	< 8 oz.		4	1/8" - 1/4" - 3/8" - 1/2"	
	Monster Flush	Pulling & Cleaning	1 1/2" - 8"+	2 to 8	1,500 - 3,000	< 8 oz.	1	6	1/8" - 1/4" - 3/8" - 1/2"	
	General	Cleaning	1 1/2" - 8"+	2 to 8	1,500 - 3,000	< 8 oz.		6	1/8" - 1/4" - 3/8" - 1/2"	
	Degreasing/Delcing	Grease & Frozen Lines	1 1/2" - 8"+	2 to 8	1,500 - 3,000	< 8 oz.	3	6	1/8" - 1/4" - 3/8" - 1/2"	
	Rotating	Cleaning	1 1/2" - 8"+		1,200 - 4,000	< 8 oz.		2	1/4" - 3/8" - 1/2"	
	Drop Head	Tough Corners, Commercial	1 1/2" - 4"	2 to 2	1,500	< 8 oz.		3	1/8" - 1/4"	
	Jetter Leader	Navigating	3" - 8"	4 to 12	3,000	< 8 oz.		4	3/8"	
NLB Corp. 29830 Beck Rd., Wixom, MI 48393 248-624-5555 • (f) 248-624-0908 www.nlbcorp.com nlbmkgt@nlbusa.com SEE AD ON PAGE 41	Typhoon™ 10	Tube Cleaning	5/8" - 3/4"	9 to 20	15,000 to 40,000	2 oz. - 4 oz.	4 to 5		varies inches	
	Typhoon™ 20	Pipe & Tube Cleaning	6" - 10"	20	24,000	2 oz.	4 to 5		3/4" - 24"	
	TS-1	Tube Cleaning	1/2"	5.6 to 8.25	10,000 - 15,000		1 to 4	6	1/16" NPT	
	TS-1-20K	Tube Cleaning	1/2"	4 to 10	20,000		1 to 4	2 to 6	1/4" UFN	
	TS-1-40K	Tube and Pipe Cleaning	1/2"	4.75 to 8	40,000		1 to 2	2 to 3	1/4-28" UNF	
	RLM	Pipe and Tube Cleaning	1/2" - 1 1/2"	5 to 18	10,000 - 20,000		1 to 4	3 to 6	varies	
NozzTeq® Inc. 1949 Calumet, FL 33765 866-620-5915 • 727-223-4979 (f) 603-413-6744 www.nozzteq.com info@nozzteq.com SEE AD ON PAGE 66 	BL Swiper® (Med)	Reduces blown toilets/services	4" - 36"	10 to 266	400 - 4,000	2 - 12 lbs.		4 to 6	1/2" - 3/4" - 1" - 1 1/4"	
	JAWS® 100	High performance sewer cleaning or storm water cleaning	6" - 12"	5 to 80	400 - 4,000	4 lbs.		4	1/2" - 3/4" - 1"	
	Multi-Global Nozzle™	Sewer and pipe cleaning for penetration	2" and Up	4 to 170	400 - 4,000	2 lbs.	4	1 to 6	1/2" - 3/4" - 1" - 1 1/4"	
	JAWS™	High performance sewer and pipe cleaning heavy debris	6" - 30"	30 to 265	400 - 4,000	7 lbs.		5	1/2" - 3/4" - 1" - 1 1/4"	
	IceBear Penetrating Nozzle™	Sewer and pipe cleaning penetrating nozzle	1" and Up	4 to 170	400 - 4,000	1 - 3 lbs.	3		1/4" - 1/2" - 3/4" - 1" - 1 1/4" - 1 1/2"	
	C-RAY 200™	Bottom cleaning for sewer and pipe	12" - 36"	30 to 265	400 - 4,000	22 lbs.		1	6	1/2"
	C-RAY 400™	Bottom cleaning for sewer and pipe	15" and Up	40 to 350	400 - 4,000	42 lbs.		1	8	3/4" - 1" - 1 1/4" - 1 1/2"
	BL Swiper® (large)	Ventura effect type nozzle to clean with water in the line and sucks the water down	15" and Up	40 to 265	400 - 4,000	13 lbs.			39	
	Spinner Nozzles (No rebuilds)	Grease and other obstructions	4" and Up	14 to 350	400 - 4,000	3 - 15 lbs.		2		1/2" - 3/4" - 1" - 1 1/4" - 1 1/2"
	Goblin Grease Eater™	Grease nozzle sewer lines or storm lines	6" and Up	40 to 350	400 - 4,000	12 lbs.		1	10	3/4" - 1" - 1 1/4" - 1 1/2"
	MONRO-JET™	Hydro-Excavation	2" - 8"	3 to 20	2,000 - 36,000	2 lbs.		1		1/2"
	ORCA™	Two truck operation at either end of the pipe	15" - 60"	40 to 350	400 - 4,000	15 lbs.			8	3/4" - 1" - 1 1/4" - 1 1/2"
	MANTA™	Bottom cleaner for recycled water trucks	12" - 72"	60 to 528	900 - 3,000	45 - 60 lbs.		1	8 to 12	1/2" - 3/4" - 1" - 1 1/4" - 1 1/2"
	FIR™	All stainless type penetrators	2" - 12"	5 to 80	400 - 4,000	1 lb.		1	3 to 6	1/8" - 1/4" - 3/8" - 1/2" - 3/4" - 1"
C-RAY 800™	Dual truck operation for double the flow for large pipes	36" - 96"	120 to 350	400 - 4,000	50 lbs.			8	3/4" - 1" - 1 1/4" - 1 1/2"	
Sewer Equipment 1590 Dutch Rd., Dixon, IL 61021 815-477-7611 www.sewershop.com sales@sewerequipment.com	Avanti	Obstruction removing for extreme blockages and long distance challenge	3" - 12"	14 to 80	3,000 - 4,000	1 lbs.		6	1/2" - 3/4" - 1"	
	Tri-Star	Removal and blockage penetration, including ice	1/2" - 1"	14 to 80	3,000 - 4,000	1 lbs.	4	6	1/2" - 3/4" - 1"	
	Combi	Chain Cutter Aggressive root cutting and mineral deposit removal & general maintenance	1/2" - 1"	14 to 80	3,000 - 4,000	4 lbs.		6	1/2" - 3/4" - 1"	
	Mega Series	Storm lines, culverts, large diameter pipes	4" - 48"	18 to 80	3,000 - 4,000	3 lbs.	1	11	1/2" - 3/4" - 1"	
	Power Jet 500	Cleaning Large diameter where it is difficult or impractical to plug or reroute lines, older lines where pipe walls are delicate	20" - 60"	60 to 80	2,000 - 2,500	12 lbs.		12	1"	
	Roto-Max	Heavy grease removal and entire pipe cleaning along with room maintenance capabilities	4" - 20"	18 to 80	3,000 - 4,000	2 lbs.	1	6	1/2" - 3/4" - 1"	
Shamrock Pipe Tools, LLC 11210 S Choctaw Dr., Baton Rouge, LA 70815 800-633-7696 • 225-275-7696 www.shamrocktools.com info@shamrocktools.com SEE AD ON PAGE 8	Huracan® Nozzle	Cleaning	4" - 48"	10 to 120	1,200 - 4,000	4.7 lbs. or 10.9 lbs.	1	3 or 5	1/2" - 3/4" - 1" - 1 1/4" (NPT)	
	Wamax	Cutting concrete, major mineral deposits and solid blockages	8" - 34"	80	2,500	60 lbs.		8	1"	
	Warthog	Roots, Grease, General Cleaning	2" - 18"	12 to 35	2,000 - 4,000	1 - 5 lbs.	1	4	3/8" - 1/2"	
	Sandshoe	Sand, dirt and rocks	4" - 18"	12 to 18	2,000 - 4,000	7 lbs.		4	3/8" - 1/2"	
	Boat Nozzle	Large Pipe	24" - 60"	40 to 120	1,200 - 4,000	51 lbs.		11	1" - 1 1/4" (NPT)	
	Super Grande Penetrator Nozzle	Performance	2" - 30"	10 to 120	1,200 - 4,000	1.1 - 7 lbs.	1	3, 5 or 8	1/2", 3/4", 1", 1 1/4" (NPT)	
	Ultimate Penetrator Nozzle	Performance	2" - 30"	10 to 120	1,200 - 4,000	5 - 31 lbs.	1	3, 5, 8 or 10	1/2" - 3/4" - 1" - 1 1/4" (NPT)	
	Grease Nozzle	Performance	2" - 18"	10 to 90	1,200 - 4,000	5 - 10 lbs.	1	6 or 10	1/2" - 3/4" - 1" (NPT)	
	Cobia® Nozzle	Performance	6" - 36"	25 to 120	1,200 - 4,000	5 lbs. - 10 lbs.	1	6 or 10	3/4" - 1" - 1 1/4" (NPT)	

SEWER NOZZLE

COMPANY DIRECTORY 2017

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Spartan Tool 1506 W Division St., Mendota, IL 61342 800-435-3866 • 815-537-7411 (f) 888-876-2371 www.spartantool.com sales@spartantool.com SEE AD ON PAGE 96	Warthog	Roots, Grease, General Cleaning	2" - 18"	12 to 35	2,000 - 4,000	1 - 5 lbs.	1	4	3/8" - 1/2"
	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"
StoneAge, Inc. 466 Skylane Dr., Durango, CO 81303 866-795-1586 • 970-259-2869 www.sewer-nozzles.com bill.shires@stoneagetools.com SEE AD ON PAGE 4	Warthog WGR Magnum	Sewer jetting	8" - 36"	50 to 80	1,500 - 5,000	13 lbs.	1	4	1"
	Warthog WG-1	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"
USB USA LLC 7565 Owl Creek Dr., Douglasville, GA 30134 678-214-7965 • (f) 678-649-1766 www.usb-usa.com usb-usa-llc@gmail.com SEE AD ON PAGE 32	Primus	Grease, Crusts, Light Roots	4" - 24"	18 to 120	2,000 - 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	6/2.6/4.8/5/11.4/4	4	6/8/10/12	1/2" - 3/4" - 1" - 1 1/4" - 1 1/2"
	Pipe Wolf	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	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	22/33/66/1.54	4		1/4" - 3/8" - 1/2" - 3/4" - 1" - 1 1/4"
	Forward Spray	Total Blockages from Roots, Grease & other Obstructions	2" - 15"	8 to 80	2,000 - 4,000	.22/44/66/1.54/3.7	4	6/5/6/8	1/4" - 3/8" - 1/2" - 3/4" - 1"
	Triple J	Mud, Sand, Silt - Everyday Cleaning	4" - 48"	60 to 120	2,000	4.8/12.1/17.6/23.1/44		12/15	1" - 1 1/4"
	FD 2 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	2,000 - 4,000	6/12.1/17.6/23.1	1	6/8/10/12	1/2" - 3/4" - 1" - 1 1/4"
Vactor Manufacturing 1621 S Illinois St., Sreator, IL 61364 800-627-3171 • 815-672-3171 (f) 815-672-2779 www.vactor.com sales@vactor.com	HXXpose	Hydroexcavation		3 to 12	1,000 - 3,000			1	1/2" NPT
VARCO 7489 Mason King Ct., Manassas, VA 20109 866-872-1224 • 703-334-5980 (f) 703-334-5979 www.varcopumper.com ron@varcopumper.com SEE AD ON PAGE 26 	Super Sewer Squad Kit	Penetration, Flushing, Deicing, Degreaser, Polishing	1" - 24"	1.7 to 80	1,200 - 10,000	varies	Cust Spec	Cust Spec	1/8" - 1"
	Elite 6 Pack Nozzle Kit	Penetration, Flushing, Deicing, Degreaser, Polishing	1" - 24"	1.7 to 80	1,200 - 10,000	varies	Cust Spec	Cust Spec	1/8" - 1"
	Evaporator (EV)	Deicer, Degreaser	1" - 24"	1.7 to 80	1,200 - 10,000	varies	Cust Spec	Cust Spec	1/8" - 1"
	Impactor (LT)	Heavily fouled pipes	1" - 24"	1.7 to 80	1,200 - 10,000	varies	Cust Spec	Cust Spec	1/8" - 3/4"
	PX Revolver	Full 360° rotation for cleaning & polishing	1" - 24"	1.7 to 80	1,200 - 10,000	varies	Optional	Cust Spec	1/8" - 3/4"
	Round Nose (Button)	General Cleaning/Cornering	1" - 24"	1.7 to 80	1,200 - 10,000	varies	Cust Spec	Cust Spec	1/16" - 1"
	Round Nose Hex	Penetration or Flushing	1" - 24"	1.7 to 80	1,200 - 10,000	varies	Cust Spec	Cust Spec	1/8" - 1"
	B Style	Penetration or Deicing, Degreaser	1" - 24"	1.7 to 80	1,200 - 10,000	varies	Cust Spec	Cust Spec	1/8" - 3/4"
Water Cannon Inc. 4300 W Lake Mary Blvd., Units #1010-424, Lake Mary, FL 32746 800-333-9274 • (f) 888-928-9274 www.watercannon.com • sales@watercannon.com SEE AD ON PAGE 94	Arzino - Eggstyle	Drain Cleaning & Flushing	2" - 10"	7 to 80	4,000	4 oz. - 3.3 lbs.	1	6	1/4", 3/8", 1/2", 3/4", 1", 1 1/4" FPT
	Aqua Nozzle	Drain Cleaning, De-icing, Flushing	1" - 24"	2 to 80	1,200 - 15,000	.05 lbs. to .55 lbs.	3	9	1/4", 3/8", 1/2", 3/4", 1" FPT

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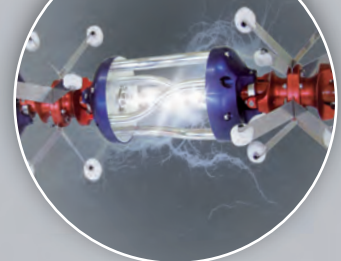
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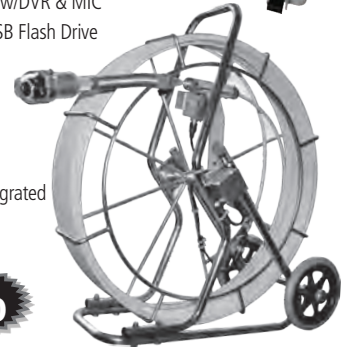
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Erik Gunn is a magazine writer and editor in Racine, Wisconsin. Direct Money Manager inquiries to editor@cleaner.com.

Cashing in for Retirement

Prepare yourself for the transition from selling your services to selling your business

By Erik Gunn

This could be you someday: You've spent your working life building up your drain cleaning business. Your reputation for quality service has enabled you to build a strong base of customers and an even broader reputation in your market. Now, you're ready to retire and cash in. You've got a qualified buyer, the price seems right, and before you know it, you're sitting on a windfall — maybe a million dollars, maybe a lot more.

At long last, it's time to work on your golf game, hang out with your grandkids, take those trips you've put off, or go help your local Habitat for Humanity group.

But first, you've got a little more hard work ahead. And if all this seems a long time off, *don't turn the page*. There's an important message here — even if selling your company feels like it's decades off.

MANAGING WEALTH

Selling a successful business comes with an unexpected responsibility: managing that newfound wealth.

Donald Kent is a principal with Bernstein, the private wealth management division of AB (formerly AllianceBernstein), a global investment firm. Bernstein, based in New York City, has offices in a dozen U.S. cities. His clients consist of families who have a high net worth of \$1 million or more.

"Ultimately, I help people clarify their goals and develop an investment strategy that makes sense, given what they have now and what they want to achieve," he says.

Many of his clients are small business owners who have just sold off their company. He's found that many are smart about their business — but not so much about their personal finances.

As one recent client acknowledged: "For 30 years, he managed his business and did a good job," Kent says. But managing his wealth after the sale, the man realized, "was really like running a business, and he knew nothing about it."

MISCONCEPTIONS

Among the most common misconceptions Kent hears from new clients is the long-outdated belief that "you should be able to draw 5 percent a year from your assets and be OK."

"Potentially that was true 20 years ago," Kent says, and at first glance, "it seems reasonable." But not anymore — for at least three reasons:

Reason No. 1: "People are living longer, and that means you need more money to sustain you over the long haul," he points out.

Just do the math: You're in your 60s, sell your business for \$2 million in cash, park the money in a savings account and decide you'll live on what seems like a reasonably comfortable \$100,000 a year — good for a 20-year run.

Not so fast. "For a typical couple in their 60s today who are of normal health, there's a 50 percent chance one of the two will still be alive at age 92," Kent points out. "A couple at the age of 60 needs to plan for at least 30 years." That once reliable 5 percent rule "almost for sure will lead them to bleeding their assets before they die."

Reason No. 2: Inflation is calm — but it's not at zero. So you'll run out even faster.

"If you need \$100,000 a year, five years from now that same lifestyle is going to cost you \$110,000, or even \$120,000," he cautions. Assume a modest 3 percent annual inflation rate and you've reached the bottom in 16 years.

"But wait!" you may say. "Of course I won't park my stash in a no-growth savings account! Look how Wall Street is booming!" Which brings us to ...

Reason No. 3: Despite the nearly eight-year upward trajectory of the stock markets, including recent record highs in the Dow Jones, the overall return on investments isn't what it used to be.

"Historically, stocks have earned 10 to 12 percent per year, and bonds have earned 4 to 6 percent per year," Kent says. "Probably you could pull 5 percent and maintain the level of your portfolio. We're not in such an environment today."

Current average growth is in the 6 to 8 percent range for equities and 2 to 3 percent range for bonds, he continues — and that's likely to be the picture for the next 20 years. Bottom line? Even that handsome new nest egg can't be counted on to support all of your years ahead. "And that can't be solved by asset allocation alone," Kent says. You'll need other resources.

CONVERSATIONS

Explaining those realities to new clients can be a sobering conversation, but it's also the start to helping them find a path forward to achieve their deepest goals and comfortably steward the fruits of their lifelong labors.

First is sorting out their current and anticipated expenses — and separating the essential ones from the frills. That isn't a "one-size-fits-all" exercise: It requires exploring people's deepest values.

"Helping the kids" — assuming the children are now adults and living their own lives — "you could say is discretionary," Kent observes. "But in some families, it isn't."

"For a typical couple in their 60s today who are of normal health, there's a 50 percent chance one of the two will still be alive at age 92. A couple at the age of 60 needs to plan for at least 30 years."

Donald Kent

Others may be committed to giving as much of their wealth as possible away to charity or to their religious institution. “They’d forgo a vacation to be able to contribute.”

Whether it’s travel, personal hobbies, community involvement, or any number of possible places to spend, the choices are practically infinite. It’s essential to set priorities and write a budget.

Even people accustomed to a disciplined spending plan in their business may have never lived by a household budget. For them, “coming up with that is the hardest part of the job.”

PLANNING AHEAD

In short, when a windfall comes your way, you’ve got two tasks: to get a clear picture of how long it will really last, and to sort out a realistic plan to spend wisely and help it grow.

Better still, though, is being prepared.

At the very least, consider short-term preparation, Kent says. Plenty of his clients come to him after the sale, but he advocates enlisting a wealth management professional sooner than that — when you’re putting your business on the block, if not before. That way, he points out, you can manage your own expectations for the transaction.

Knowing how much you really need to recoup could motivate you to price your business more aggressively. At the very least, if you know upfront the limits of your prospective proceeds, you can start thinking about other resources to tap to help pay for your postretirement life.

Planning ahead doesn’t have to start there, however. If you’re still midcareer, or even just starting out, it’s not too soon to adopt simple strategies that will improve your endgame position:

- If you’re not saving for retirement but consider the business equity to be your pension, chuck that idea pronto. Consult with your financial advisor, and establish a retirement account. As a business owner, you have several options. The tax advantages alone should be enough to motivate you.
- Consider your business spending patterns. “Often, people with small businesses in lean years scrimp and they save, and in great years splurge to reward themselves for the tough years,” Kent says. If that’s you, work with your management team and your outside accountants to put more discipline in your business budget. Saving for a rainy day can also yield extra money for retirement, for example.
- Enlist professional help — whether through a specialized wealth management firm, like Bernstein, or going to a fee-based financial planner. “Fee-based” is important: You want someone whose income doesn’t include incentives for you to purchase investment products, insurance policies or other such instruments from the planner’s business. And don’t be shy about asking direct questions so you know exactly what you’re getting.

Whether you’ve just sold your business, you’re getting ready to sell it, or you’re simply dreaming of that day years or even decades from now, it’s important to know that when it comes to how that act will change your financial life, you don’t have to go it alone.

Find a good advisor who can help you make sense of it — now and for the rest of your life. If for no other reason, just think how much more relaxing that kind of help can make your golf game. **c**

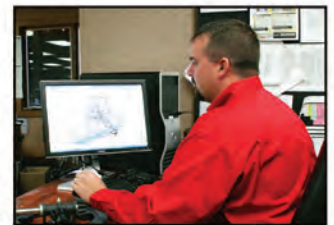
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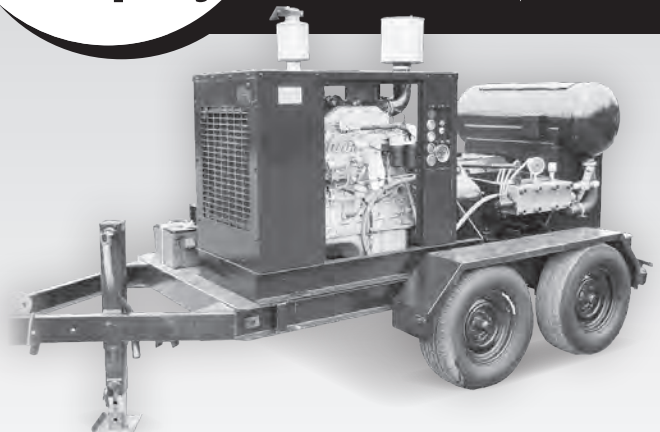
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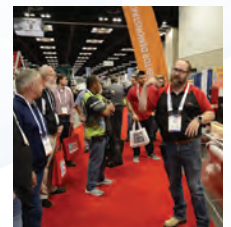
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7 Checks for Healthy Hydroexcavators

Proper maintenance of pumps and blowers is vital to keeping your truck operating at peak performance

By MaryBeth Matzek

When hydroexcavation contractors neglect basic care and maintenance, it can lead to big problems. Two of the biggest things you should be checking regularly are the unit's pumps and blowers.

"Without a blower or water power, a hydroexcavator is rendered useless," says Mike Selby, service manager at Vac-Con. "Other than the truck chassis, they are the most expensive components on a hydroexcavator."

Selby recommends performing a basic daily inspection on both pumps and blowers. The daily check "generally consists of a simple fluid level check, but I would also recommend checking the drive mechanism," he says, adding that pumps and blowers are similar, so some crossover is a given between the two.

After performing a basic daily check, experts suggest these regular maintenance checks to keep everything in good working condition:

CHECK FILTERS

Filters are crucial to both pumps and blowers, says Randy Johnson, president of GAP Pollution & Environmental Control in Johnstown, Pennsylvania. The filters prevent dirt and dust, which can damage internal parts, from passing through the blower.

Selby says it is vital to change or clean the inlet strainers or filters to keep foreign material out of the component and extend its life.

PRESSURE PROBLEMS

If there's a problem with the hydroexcavator's vacuum or pump, you'll likely notice a pressure change.

"If the blower starts making noise and the contractor is unable to get full vacuum, that's a sign something is wrong," Johnson says. "On the water pump, the inability to get full pressure is also a sign something needs to be checked."

CHECK FOR DEBRIS

The area around the pump should be kept free of material and debris. Material can collect there due to the dust and dirt blowing around during the job.



Filter bags in the baghouse are checked from the top of the hydroexcavator.

"My biggest advice to anyone is to run your equipment at a speed that is just enough to complete the work you are doing."

Randy Johnson

"Contractors should check the drive mechanisms for the same thing," Selby says. "Be sure all piping, boom, debris tank, screens and any other part that the blower vacuums through are free and clear of material for efficient vacuum conveyance to the tank."

WEATHER READY

Weather changes should also be taken into account when looking at maintenance of pumps and blowers. "In cold-weather climates, be sure to winter drain the pump to prevent damage from freezing," Selby says.

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If working in a hot area, water pumps need an extra check, he adds. "Most triplex water pumps are air-cooled, and in hot climates, they can overheat if cool air can't reach them."

DON'T OVERDO IT

Operators can get into trouble if they put too much pressure on their pumps and blowers.

"My biggest advice to anyone is to run your equipment at a speed that is just enough to complete the work you are doing," Johnson says. "When you run the truck too high, you can cause problems such as overloading the filters and damaging your blower, passing water that can wear out pump parts and waste fuel."

Selby agrees, adding that you should avoid running the pump dry for any extended amount of time. "There is no reason to run a pump dry for longer than 30 seconds since it only increases pump packing wear."

BLOWER JOINTS AND VACUUM RELIEF VALVES

Poorly sealed joints lead to low vacuum pressure for blowers, Johnson says. "Joints such as boom extension, rear body door, inlet and outlet seals can cause air to leak into the system, causing poor lifting at the end of the boom."

Vacuum relief valves protect the blower from overheating. When blowers run at high, they generate heat and the internal rotating components expand. If the vacuum exceeds the rated amount, the relief should open, allowing cool air into the blower and limiting the internal component expansion. If the vacuum relief fails, the blower can seize, causing major damage.

PLAN AHEAD

While you may be good about doing maintenance checks before or after a truck leaves the shop, Selby says it is important to think ahead.



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Operators should keep an eye on the hydroexcavation unit's blower sight glass and oil level on every job as part of daily maintenance work.

"Prior to working on a job site for an extended period of time, make sure you can obtain necessary replacement parts and consumables," he says. "All too often, contractors are working in areas unfamiliar to them. Due diligence in finding the closest parts and service supplier prior to the job can mean the difference in profit and loss when the machine does have a problem." **c**

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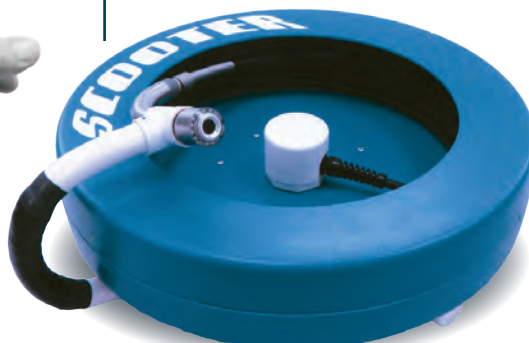


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Balancing Emotion and Logic in Business

Successfully managing a family-run business requires identifying critical issues and finding resolutions

By MaryBeth Matzek

When family members own a business together, separating work from family is nearly impossible. While the brain should drive business decisions, emotions and sentiment always come into play when it's a family-owned business.

"In order for family businesses to succeed and thrive, business owners must distinguish their emotional motivation and sentiment from their logical motivation," says J. Kelly Newcomb, owner of Newcomb Consulting Group, a family business consulting group, and Thrive!, a company wellness program. "With a family business, you need to step back and look at all the aspects of a decision. In particular, how it will impact both the family and the business."

Newcomb, who frequently speaks to wastewater, sewer and pumping groups, explained how the family/business dynamic might work for a sewer and drain cleaning business: If the owner wants to buy another truck or add to the equipment inventory, that extra expense may initially decrease the business' profitability and cash flow — which directly affects the family's finances — before it may increase again.

"Company wellness is so important and all-encompassing," he says. "It's about the quality of work, how well the business is doing and quality of life."

With only 16 percent of family businesses making it to the third generation, Newcomb says company wellness is an important topic.

TALKING MONEY

Family-business owners need to identify critical issues and then dig into these issues to create a solution or, in some cases when a solution isn't possible, a resolution. One of the most pressing issues for families is money — something no one wants to really discuss, he adds.

"Family businesses don't discuss money or they don't discuss it in a holistic way. People don't want to talk about money because it's hard. So many issues with family businesses come down to family issues or money issues."

Newcomb leaves the big questions about transferring wealth between different generations — such as the tax implications — to financial and tax professionals, but he does get involved if it becomes a discussion about how or why wealth is being shared among different family members. Such discussions are often matters of the heart, but they require an open mind. He also feels they take time, trust and commitment by all involved.

"For real win-win situations to occur, everyone has to want what's best for all involved," he says.

PLAYING FAVORITES

Another given in a family-owned business: favoritism. The company's employees pick up on that early on. "Parents need to realize what their child's strengths are," he says. "As a family-business owner, you need to demonstrate

"Family businesses don't discuss money or they don't discuss it in a holistic way. People don't want to talk about money because it's hard. So many issues with family businesses come down to family issues or money issues."

J. Kelly Newcomb

credibility and trust to your employees when it comes to how family is involved. This requires being aware of a family member's character and competencies. Basically, knowing what type of employees the family members are and what they can or cannot contribute to the company being successful."

Family problems can also find their way into the business. If there are three children, for example, but one child is not involved in the business, is it fair for him to get one-third (or cash equal to one-third) of the business when parents retire or pass away?

"I sometimes feel more like a family therapist than a business consultant," Newcomb says, adding that another common issue parents may not take into account concerns the view that a child's spouse is "not family," which is a stance Newcomb disagrees with.

"Treating spouses as outsiders is problematic on many levels. No one wants half of the family unhappy at Thanksgiving," he says. "You also have to think about the sacrifices and if they are worth the gain."

Another family problem is when parents own a business, but their children may not be interested in it. "A family business could be a killer for someone else's dream," Newcomb says. "Or the child may not have credibility with current employees, and there's no level of trust there."

FACING ISSUES

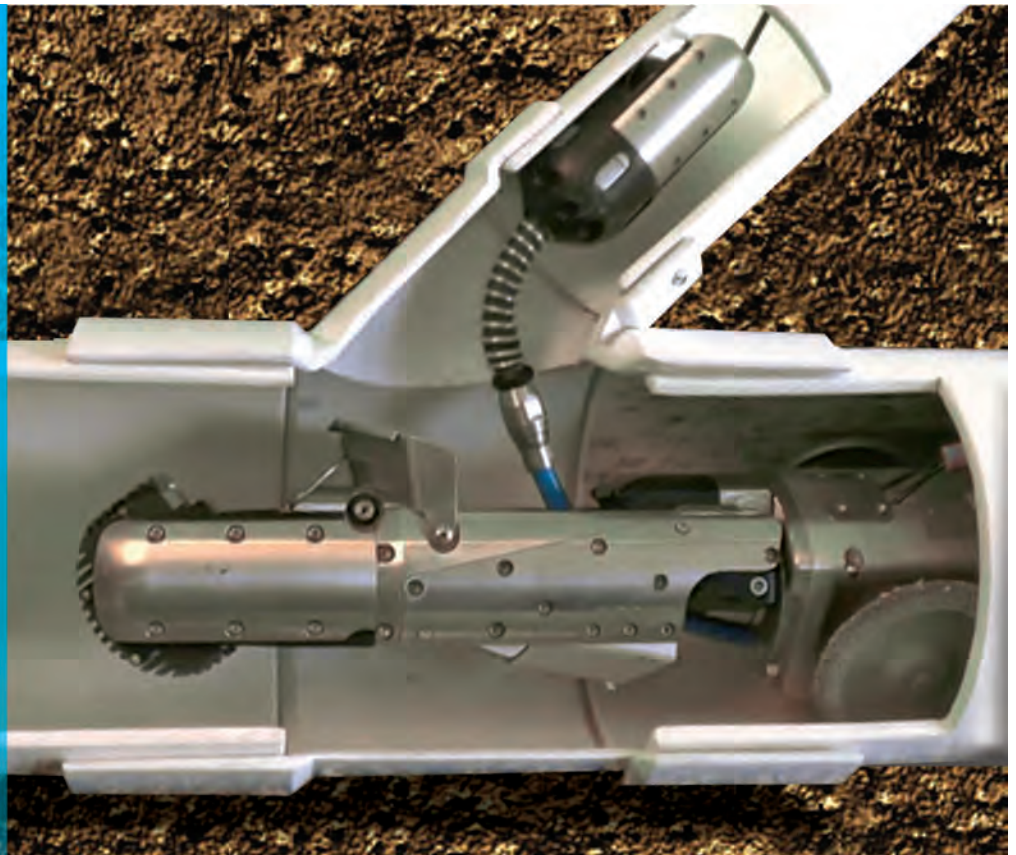
When looking at problems and finding a solution, Newcomb points to the five I's: identify, impact, importance, immediacy and implementation. "I always ask people: 'What is one thing you can do today about this issue?' You simply can't ignore critical issues without eventually suffering consequences."

Businesses call Newcomb in when they are facing challenging questions and issues, and they are not sure how to move forward. "It is hard to deal with complexity if we're emotional," he says.

For Newcomb, it's personal. "I think of my growing up in a family business, coming back to help the family out, and the challenges with helping them sell the business and leave it behind. I admit I ask hard questions, but I didn't get into this job to get people to like me. I got into this job so I can help businesses and the families involved. I am grateful that I get the chance to help other families every day." **c**

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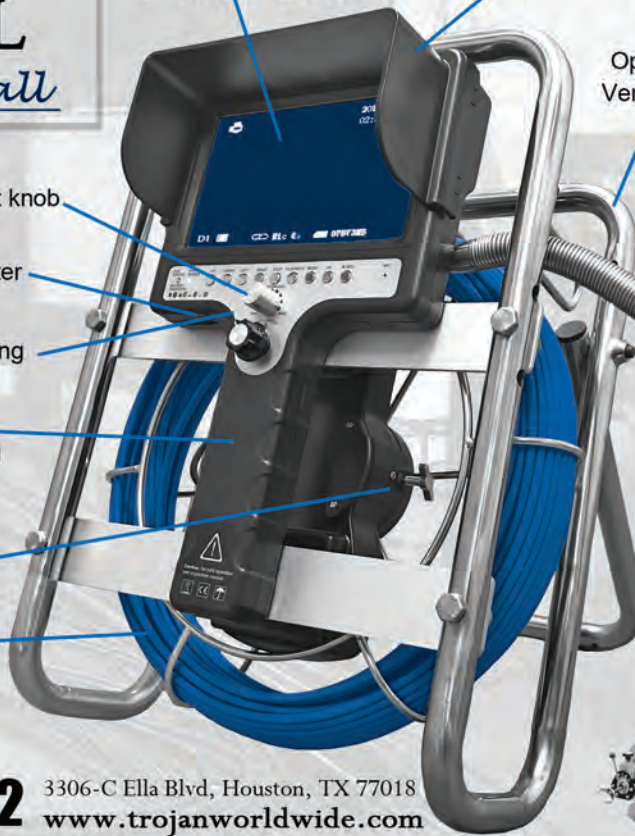
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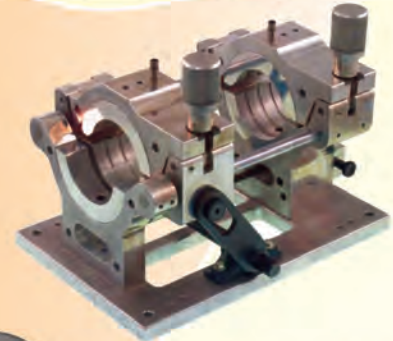
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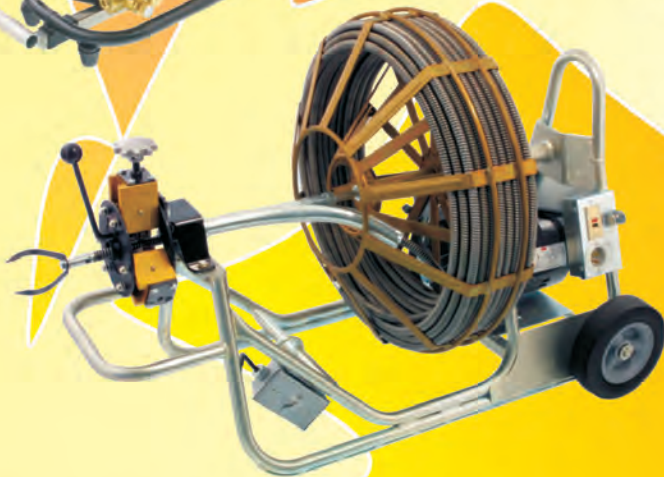
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The **Paradigm** vacuum excavator from **Vector Manufacturing** is designed for utilities and contractors involved in the installation, maintenance, and repair of underground water, sewer, gas, electric, and telecommunications lines. This compact, multiuse truck can dig holes with water or air; vacuum, contain and dispose of drill mud; power pneumatic, hydraulic or electrical tools; and provide transport and storage of replacement parts, equipment and tools. The truck's Park-n-Dig design minimizes the time between arriving on the job site and excavation, including the ability to dig up to 6 feet without additional pipe and hose. The air compressor is able to power utility tools such as jackhammers and tampers. It has substantial storage space for these tools, including a long-handle toolbox. It can tow up to 20,000 pounds. **800/627-3171; www.vactor.com.**



VECTOR TECHNOLOGIES MUDSLINGER

The **Mudslinger** line of powerful, compact trailer-mounted hydroexcavation vacuums from Vac-Con, in cooperation with **Vector Technologies**, uses a 66.8 hp Kubota diesel engine with a 1,200 cfm at 16 inches Hg positive displacement blower and comes with a 535- or 845-gallon debris tank with 55-degree hydraulic dump hoist and a hydraulic door. The water system is 4 gpm at 4,000 psi with 50 inches of 3/8-inch hose and comes with a 225- or 325-gallon HDPE water tank. A 9-foot boom with 24 inches of hydraulic extension, hydraulic up/down and 270 degrees of manual rotation is also available. It is mounted on a heavy-duty welded tube steel trailer. **800/832-4010; www.vector-vacuums.com.**



WACHS UTILITY PRODUCTS HYDRO-VAC

The **Hydro-Vac** from **Wachs Utility Products** can be used for valve maintenance hydroexcavation. Operating water distribution valves is essential in emergency situations such as a water main break. Minimizing costly damage while reducing customer interruption by being able to access and open or close the valve is critical. The trailer- or truck-mount systems can help gain access to buried valves by breaking up sediment with the 3,000 psi pressure washer and then removing it through 7/8-, 1 1/4- or 2.5-inch suction wands using a 500 cfm positive displacement blower providing 11 inches Hg vacuum to a 250-gallon hydraulic slide-and-dump spoils tank. **866/392-1060; www.turnvalves.com.**



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GUZZLER MANUFACTURING HI-RAIL

The **Guzzler Manufacturing Hi-Rail** industrial vacuum loader uses vacuum power to quickly and efficiently remove ballast, contaminated materials and spills from railroad trackbeds. Material is stored in a large collection tank for subsequent treatment and disposal or reuse. It has a loading boom, hydrostatic creep drive and a rear-mounted operator chair to quickly convert to operate on both railways and roadways. An optional three-camera system provides the operator with enhanced visibility to the operator location while the unit is vacuuming on railroad tracks and in switchyards. The camera system includes a 7-inch weatherproof LCD monitor and cameras mounted on the front and sides of the truck to provide a wide-area, real-time view of the surroundings, even during extreme weather conditions. **800/627-3171; www.guzzler.com.**



JET/VAC COMBO UNITS

SEWER EQUIPMENT MODEL 900 ECO

The **Model 900 ECO** from **Sewer Equipment** is available in 9-, 12- or 15-yard debris capacities, equipped with Dura-prene water tanks carrying 900 to 2,000 gallons of onboard water. Its Hydro Drive powertrain system eliminates the need for a transfer case. Both single-piston and triplex pump options are available at 55 to 80 gpm at 2,000 to 3,000 psi with a 4,400 cfm blower and 18 inches Hg, built on an eco-friendly platform that provides greater fuel efficiency and offers noise reduction. **888/477-7611; www.sewerequisite.com.**



VAC-TRON EQUIPMENT MINI COMBO SERIES

The **Vac-Tron Equipment Mini Combo Series** combines high cfm vacuum with jetter capabilities. Its Cat jetter pump is rated at 2,000 psi at 15 gpm and can be used to clean lateral lines up to 12 inches in diameter. It comes with 300 feet of 1/2-inch jetter hose with an electric hose reel. Options include a hydraulic boom or strong arm to maximize job performance by helping to reduce work fatigue that can sometimes occur from using a manually controlled vacuum hose. It is available mounted either on a trailer or truck. **888/822-8766; www.vactron.com.**



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ROOT CONTROL EQUIPMENT

ELECTRIC EEL MFG. EEL JET EJ3000

The high-pressure **Eel Jet EJ3000** gas jetter from **Electric Eel Mfg.** can be used to clean 2- to 8-inch-diameter drainlines up to 300 feet with power and portability to blast through clogs like sludge, ice, grease, sand, soap, dirt and debris. Its steel nozzles can penetrate and clean tough problems from pipe walls with a variety of spray angles. It offers pressures of 3,000 psi at 4.7 gpm, with a 13 hp overhead valve engine for smooth, quiet and dependable operation. Electric start is also available. It has a two-to-one gear-reduced triplex pump with pulsation for longer life. Throttle-back control automatically adjusts engine speed. Its low-tone muffler enables quiet operation. It uses 1/4- and 3/8-inch-diameter jetter hose and has 12-inch pneumatic tires for easy maneuverability on a rugged steel base with a front bar for motor protection. **800/833-1212; www.electriceel.com.**



NOZZTEQ LUMBERJACK

The **Lumberjack** cutting nozzle from **NozzTeq** is a low-torque, high-speed cutter for use with high water pressures. It is effective at cutting roots but is also commonly used to remove grease, tuberculation, protruding laterals and other buildups. Because it's low-torque, it's unlikely to cut through host pipes. The bearings are sealed, grease-lubricated, water-cooled, and largely maintenance-free. Water-cooled bearings are long-lasting and don't need additional lubrication. The cutters rotate at a minimum speed of 10,000 rpm with flow rates from 10 to 250 gpm at varying pressures. They operate in pipes from 3 to 48 inches. All models clean with chain links that have optional cutting blades for severe blockages. All models come with a propelling jet housing, and some have tow rings. **866/620-5915; www.nozzteq.com.**



PIPELINE RENEWAL TECHNOLOGIES CLEANSTEER 40

The **CleanSteer 40** from **Pipeline Renewal Technologies** uses high-pressure water for propulsion, steering and cleaning as it captures live inspection video from inside lateral lines. Its design means it can traverse multiple bends in pipe, steer through branches, and levitate above debris, allowing municipal contractors and commercial plumbers to locate failed pipes, cross bores and blockages, and clean pipes. It is fully water-driven, as six propulsion nozzles generate the power needed to pull its own flexible hose through multiple bends, and a side nozzle on the camera can be



aimed to steer through diverging pipes and hover past obstacles. An optional forward-facing nozzle can be pulsed to clear debris and other obstructions. The system works with any high-pressure water source, including pressure washers and combination trucks. Its 1/2-inch hose comes in lengths from 115 to 190 feet. **866/936-8476; www.pipeliner.com.**



ROOT RAT CUTTING NOZZLES

Root Rat cutting nozzles are used with jetters from 11 hp to large truck-mounted models. The cutters are made of hardened stainless steel and come with a toolbox with two interchangeable rotors: one with cables and the other with chains. The combination kit includes extra chain, cable and bearings. They need no repair or rebuilding other than bearing replacement, which can be completed in less than two minutes for less than \$10 in parts. **800/288-7873; www.rootrat.net.**

TAG NOZZLES KROKO

KROKO root cutters from **TAG Nozzles** can be used to help clean pipes from 4 to 24 inches in diameter. Powered by a turbine, it rotates on two high-quality bearings. Working with only water pressure, it requires minimal maintenance and no lubrication. It is made of resistant steel, and the removable jets are made of stainless steel. It shreds wood, roots, grease and mineral deposits up to 800 feet away. The **MINI KROKO** can be used in pipes from 4 to 10 inches and operates from 1,800 to 3,000 psi and 35 to 60 gpm. The **KROKO** can be used in pipes from 8 to 24 inches and operates from 1,800 to 3,000 psi and 50 to 80 gpm. **418/838-2195; www.tagnozzles.com.**



SAFETY EQUIPMENT

F.S. SOLUTIONS GEROTTO LOMBRICO REMOTE-CONTROLLED MINI-EXCAVATOR

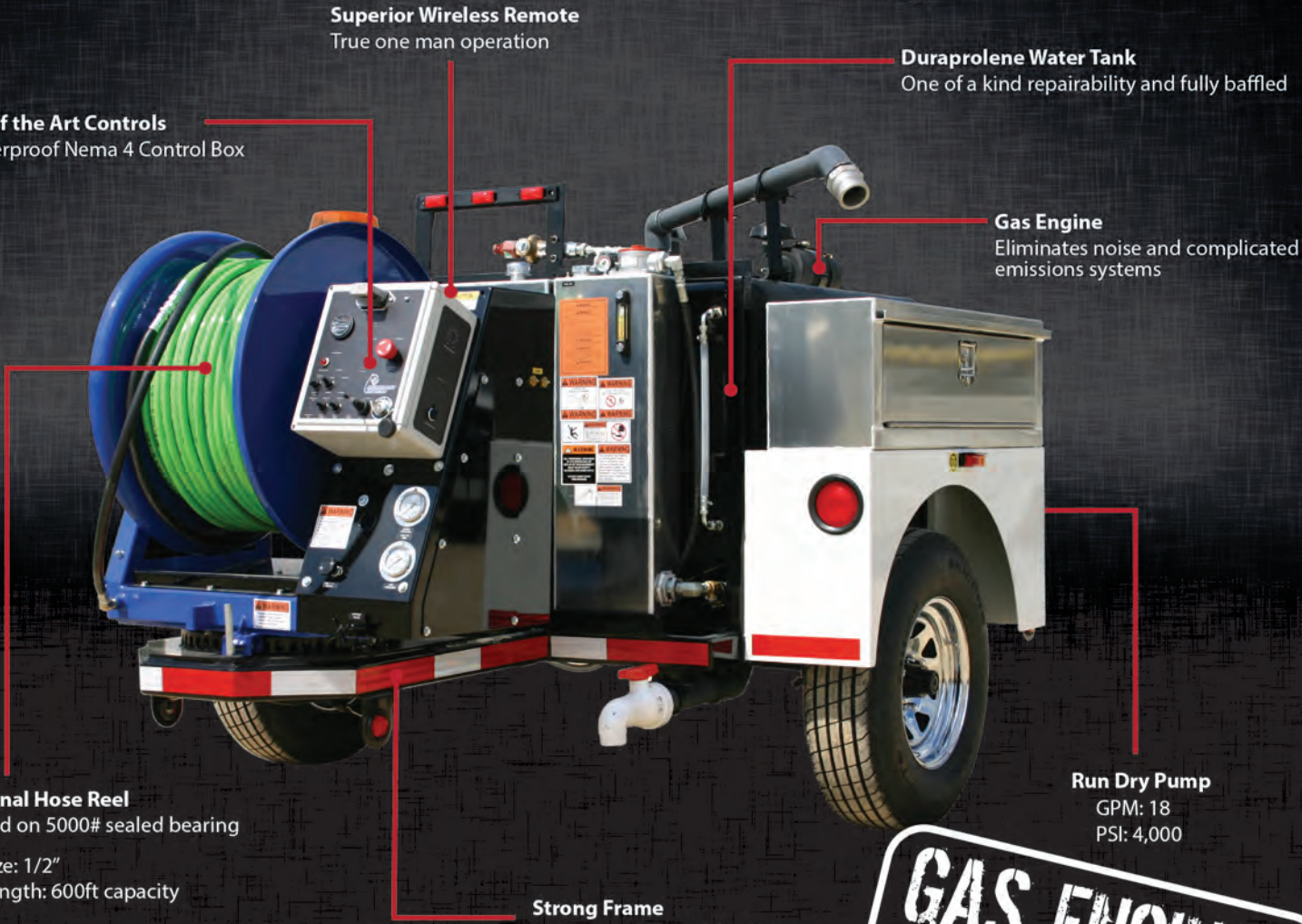
The **Gerotto Lombrico** remote-controlled mini-excavator, distributed in the U.S. by **F.S. Solutions**, is ideal for confined spaces and no-man entry. The track-driven unit can be used to vacuum settled material in sewage pipelines, manifolds and tunnels larger than 2.6 feet in diameter. Equipped with a suction tube, it is hydraulically driven from the vacuum truck's hydraulic circuit or a power pack and controlled through a hydraulic manual manifold. It includes customizable head configurations for a variety of applications, and it distances the vacuum truck operator from the powerful vacuum system, limiting the operator's exposure to tight spaces and potentially hazardous materials and increasing productivity and job-site safety. **800/822-8785; www.fssolutionsgroup.com.**



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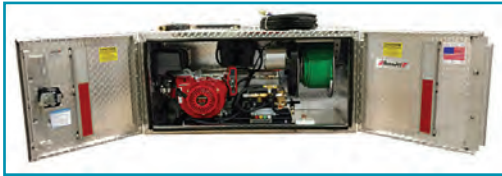
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TRUCK/TRAILER JETTERS

AMAZING MACHINERY BOSSJET PRO BOX JETTER

The BossJet Pro Box Jetter from Amazing Machinery can be mounted in many configurations. It comes with a Honda or Kohler engine, a triplex plunger pump and a Hannay Reels electric hose reel. All units are encased in a high-density aluminum box frame with an access panel on the side for exhaust release and ease of service. It comes with 200 feet of 1/4-inch I.D. jetter hose and laser and spin jet nozzles. It is designed to clean and clear 2- to 6-inch pipes. Options include a foot pedal, a trap kit, a remote reel and porta-potty head attachment for the smaller lines. All units include a washdown gun and wand, four pressure washer tips, and a chemical injector for easy cleanup. 800/504-7435; www.amazingmachinery.com.



CAM SPRAY TT4025HZ-350

The model TT4025HZ-350 trailer jetter from Cam Spray produces 25 gpm at 4,000 psi using a U.S. EPA Tier 4 final Hatz Diesel 74 hp turbo intercooled, liquid-cooled engine. It comes with an over-center clutch, control panel with hour meter, low-fuel gauge, low-fuel shutdown, over-pressure shutdown and digital pressure readout. The reel is hydraulic powered with variable speed and comes mounted on a slide-out with angle adjustment fitted with 500 feet of 5/8-inch hose, manual shut-off valve and analog pressure gauge. RCM wireless remote control modes include valve open, valve close, engine idle down with a 15-second time delay shutdown, emergency shut-off, two-speed engine rpm control and auxiliary 10-amp circuit with on/off control. 800/648-5011; www.camspray.com.



GENERAL PIPE CLEANERS TYPHOON

The Typhoon trailer jet from General Pipe Cleaners blows away blockages in big lines and long runs, delivering 12 gpm at 2,500 psi to blast lines clean of grease, sediment and debris. A 200-gallon holding

tank carries enough water to handle remote applications where access to water is limited. A 690 cc Honda engine powers the pump with Vibra-pulse to help slide the nozzle around tight bends and propel the hose down long lines. Its high-performance nozzles incorporate fluid mechanics that increase thrust, pulling power and cleaning power without needing to increase water flow or pressure. Two hose reels — a jet hose reel with 400 feet of 1/2-inch hose with variable-speed electric rewind, and a water supply hose reel carrying 150 feet of 3/4-inch hose — are mounted at the rear of the unit. Engine controls, including an hour meter, are mounted within easy reach in the lockable toolbox with slide-action doors just below the reels. 800/245-6200; www.drainbrain.com.

SPARTAN TOOL 738

The 738 trailer-mounted jetter from Spartan Tool has a weight of 875 pounds empty and 2,200 pounds full. One person can maneuver the unit, which is designed to clean pipes that are 3 to 12 inches in diameter. Its twin-cylinder, water-cooled engine provides up to 2,000 psi at 12 gpm, and the unit includes automatic low-water shut-off and rear-mounted operator controls. 800/435-3866; www.spartantool.com.



WATER CANNON INC. - MWBE 16T55

The 16T55 trailer jetter from Water Cannon Inc. - MWBE comes with an onboard 200-gallon water tank capacity and customizable jetter hose up to 500 feet. It is mounted on a two-wheel commercial jetter trailer. It comes with a poly toolbox, lights, a front jack with wheel, safety chains and aluminum fenders. The commercial high-pressure jetter is powered by a Honda GX690 twin-cylinder, electric-start engine with V-belt drive, trailer-mounted skid, and 15-gallon EPA- and CARB-approved poly fuel tank. Its TS-Series General triplex plunger pump offers 8 gpm at 3,500 psi, with a pump-mounted jetter pulse valve and foot valve with 8-foot jumper hose. Three jetter nozzles — the Penetrator, Flusher and De-Greaser/De-Icer — are included. 800/333-9274; www.watercannon.com. **C**



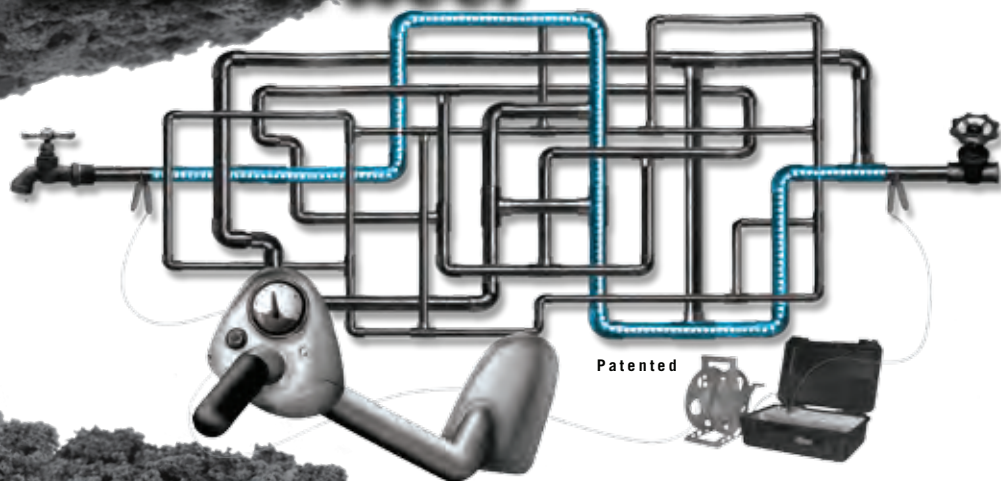
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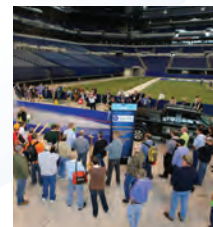
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PRODUCT SPOTLIGHT

GI Industries delivers cable machine and jetter in one

By Craig Mandli



There is only so much room on your truck to carry equipment. That's why versatile equipment like GI Industries' new high-speed pipe cleaning machine is so important.

The high-speed TCM-5000 pipe cleaning machine combines high-flow air/water flushing with brushing at variable speeds to provide the operator more control in various applications, creating a jetter and cable machine in one package. The variable-speed (0 to 1,750 rpm) control allows customers to use cleaning/drill heads or devices from other manufacturers. It provides contractors with greater flexibility in deciding which tools are correct for their applications. These systems can clean 1/2- to 24-inch lines at over 150 feet on a single unit.

"It saves money by not having to buy multiple systems for multiple sizes of pipe," says GI Industries general manager Brian Good. "This is going to be an ideal unit for plumbers and drain cleaners to have on their trucks." A single machines can clean sewer lines; cut out and remove roots; prep pipe for relining; reinstate laterals; and remove collapsed liners in cast iron, PVC, clay, copper and galvanized pipe.

It is designed with a soft-start circuit that reduces operator fatigue and machine wear, giving the operator more control while cleaning a variety of pipe sizes. As the brush spins, compressed air and/or water comes out of the head to assist in debris removal. The unit is available in two versions — a portable 44-pound unit and a cart-mounted 60-pound unit.

"This is a unit that offers 1,725 rpm while only pulling 9 amps," Good says. "It provides constant torque efficiently."

To provide more control while cleaning, a switch allows the operator to choose forward or reverse rotation, or neutral for flushing with compressed air or water. Good explains the control option helps in breaking debris off pipe walls and then flushing it down the pipe.

"If you have a stubborn deposit on the pipe wall, it allows you to hit it from different angles," he says. "That just adds to the efficiency."

Good says the feedback has been positive since releasing the unit on the market in early 2017. "I've had plumbers come up to me and say this is the drain cleaner they've been waiting 30 years for," he says. "Once they see what it can do and how easy it is to use, they're excited. The time-saving and efficiency are a bonus." 800/724-1944; www.giind.com.



1

1 STONEAGE BOP 622 BACKOUT PREVENTION DEVICE

StoneAge's BOP 622 backout prevention device for pipe cleaning with the AutoBox ABX-500 hose tractor reduces overall weight for quick setup, secure anchoring, and safe backout prevention. It features a flexible 7-foot stainless steel snout that shields the hose and enables the tractor to exert up to 200 ft-lbs of push force on the hose. The attached backout preventer stops the tool from exiting the pipe and can be used independently of the snout when needed. 866/795-1586; www.stoneagetools.com.



2

2 ADVANCED DRAINAGE SYSTEMS BARRACUDA HYDRODYNAMIC SEPARATOR

The Barracuda S4 from Advanced Drainage Systems is a hydrodynamic separator that removes sediment and other debris from stormwater runoff, protecting water resources. It is designed with teeth that mitigate turbulence in the storage chamber to prevent resuspension of captured contaminants. The Barracuda is designed to be used in single manhole jobs and offers multiple pipe configurations, flexible inlet and outlet positioning, quick installation, and easy inspection and maintenance. 800/821-6710; www.ads-pipe.com.



3



4



5



6



7

3 GENERAL PIPE CLEANERS METRO POWER DRAIN CLEANER

The Metro power drain cleaner from General Pipe Cleaners has a capacity of 75 feet of 5/8-inch Flexicore wire rope center cable and works in 3- to 6-inch lines. Its narrow profile is easier to load into trucks and works in tight places and on stairs. The Metro features a fold-down handle, stair climbers, truck loading wheel and tough frame on 10-inch heavy-duty wheels for easy transport. Automatic feed moves the cable into and out of drains fast, and the variable-speed control drives and retracts cable at up to 20 feet per minute. The power cable feed and guide tub combination keeps hands clean and free from the spinning cable. **800/245-6200; www.drainbrain.com.**

4 RIDGID MANUAL HYDRAULIC CRIMP TOOL

The RE 60-MLR manual hydraulic crimp tool from RIDGID crimps color-coded lugs and splices up to 600 MCM copper and 350 MC aluminum. Featuring a lightweight, compact, and ergonomic design, it includes RapidAdvance technology, which requires only one pump to engage the lug, and reduces the total number of pumps to complete the connection. The low handle force reduces hand strain, and a built-in pressure relief valve indicates when maximum force is reached and crimping is complete. The tool has 330-degree rotation and a slim latching crimp head design for confined panel space use. **800/769-7743; www.ridgid.com.**

5 COXREELS 1195 SERIES MOTORIZED HOSE REELS

The 1195 Series electric motorized hose reels from COXREELS now offer gear-reducing idler sprockets. This add-on reduces the rewind speed, increases motor torque and fits an optional three-way pin lock. The all-steel idler sprockets are chain sprocket assemblies with a corrosion-protective

coating that changes the drive ratio of the motor-to-drum drive system. They are available in three ratios (1:2, 1:3 and 1:4). The sprockets are mounted on a zinc-plated steel axle and rotate on two self-lubricated bronze bearings. **800/269-7335; www.coxreels.com.**

6 WATER CANNON INC. – MWBE SKID-STYLE PRESSURE WASHER

The V-belt drive skid-style hot-water pressure washer from Water Cannon Inc. – MWBE is powered by a Kohler diesel engine and has customizable psi ratings from 3,200 to 4,000 and flow from 4 to 8 gpm. It is self-contained with dual 15-gallon poly diesel fuel tanks, a 12-volt battery start, and a 45-amp charging system, so no external power is required. It has a stainless steel coil wrap, a burner hood, Beckett burners, a control panel, an adjustable thermostat and safety pressure release valve controls. A gun/wand assembly, 50-foot high-pressure hose, Maxi-Flo 20 percent chemical injector, four color-coded spray nozzles and a color-coded chemical nozzle are included. An optional wheel kit is offered for portability. **800/333-9274; www.watercannon.com.**

7 MYTANA HOT CLEAN AND COLD WEATHER PACKAGE

Designed for powerful hot water jetting, MyTana's Hot Clean and Cold weather package contains everything you need to clear frozen and clogged lines ranging from 1.5 to 6 inches in size. Driven by a 390cc Honda engine, the Model M30 jetter delivers 4.5 gpm at 3,000 psi with automatic throttle-down, plus remote control for indoor deployment. A HotBox unit heats the water for more effective cleaning, and works downstream to keep the pump running cool. This package comes job-ready with machine, hoses and tools. Quick setup and wrap up maximize your productivity. **800/328-8170; www.mytana.com. c**

StoneAge welcomes new solutions manager

StoneAge announced the addition of Anne Brennan as its new western regional solutions manager. She will be based at the company's headquarters in Durango, Colorado, and she will provide sales and service to customers throughout the western states.

Envirosight acquires MyTana Mfg.

Envirosight completed the acquisition of MyTana Mfg. on July 31. MyTana Mfg. will continue to provide for its customers while leveraging Envirosight's expertise to expand its channels to market, diversify its marketing and evolve its technology platform for its inspection products. Jock Donaldson, MyTana Mfg.'s president, will retire at the end of the year, and general manager Dale Graber will stay with the company and join Envirosight's management team.

McLaughlin hires Lee as regional sales manager

McLaughlin welcomed Cory Lee as regional sales manager. He will serve the company's clients in the Southwest. Lee, previously with Vermeer, brings more than 15 years' sales knowledge and five years' management experience to his new role.



Bahia Shrine Potentate Mitch Lokken, left, received a check for \$18,000 from the owners of Pat's Pump & Blower.

Pat's Pump & Blower charity golf tournament

Pat's Pump & Blower held its inaugural charity golf tournament at the Mission Inn Resort & Spa in Florida to benefit the Bahia Shriners Transportation Fund. The fund enables the transport of patients and their families to the various Shriners Hospitals for Children, which provide burn and orthopedic treatment.

Prime Resins adds to tech sales staff

Prime Resins announced the addition of Rick Broadrick and Steve Loudermilk to its technical sales team in the west and southeast regions, respectively. Broadrick brings more than 30 years' experience in the geotechnical and ground improvement industry, most recently with Nicholson Construction. Loudermilk brings over 17 years' experience in technical manufacturing sales and was with Sprayroq for the past four years.



Rick Broadrick



Steve Loudermilk

Advanced Drainage Systems acquisition of DURASLOT announced

Advanced Drainage Systems announced that it acquired DURASLOT, a manufacturer of stormwater collection surface drains used in construction applications.

General Pipe Cleaners' Andy Zelazny retires

Andy Zelazny, national sales manager for General Pipe Cleaners, announced his retirement at the end of September. He joined the company in 1977 and was named national sales manager in 2001.

Trelleborg strengthens pipe seals team in North America

Trelleborg appointed Matt Resler as key account manager for plastic pipe seals and announced the promotion of Tim Sparrow to sales director for the region. Resler will be based in Chicago and will be responsible for driving new business growth and fostering relationships with existing customers for the company's plastic pipe seals. Sparrow previously worked at Hilti and will be responsible for sales of all pipe seal products in North America. **c**



Matt Resler



Tim Sparrow

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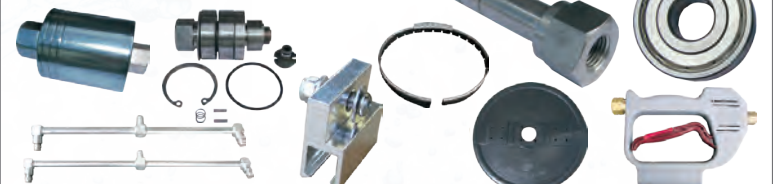
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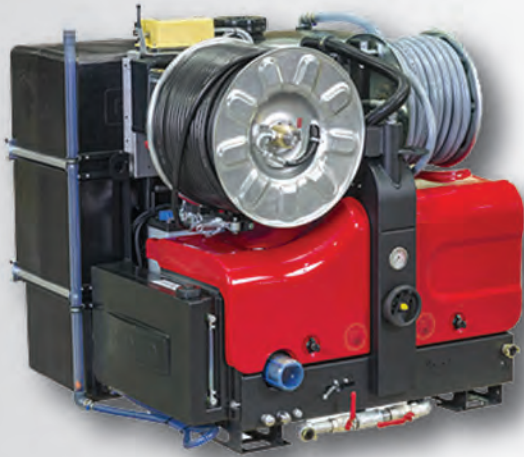


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