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ON THE COVER // Colin Luttrell's path to running his own plumbing and drain cleaning business was somewhat unintentional. While preparing for a move from his home state of New York to North Carolina where he planned on pursuing a career as an emergency medical technician, Luttrell was doing small plumbing jobs on the side. Suddenly that side work took off and the move never happened. A few years later, Luttrell is operating a successful and growing business. "It's funny how life works sometimes," he says. (Photography by Sarah Marcellus)



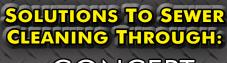




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FROM THE EDITOR

// Kyle Rogers

TAKING ACTION

Achieving the dream of entrepreneurship starts with simply launching a company, even if there are plenty of business lessons yet to come



Email me with comments, questions or opinions at editor@cleaner.com

O BREAK IT DOWN SIMPLY, the Cleaner magazine readership probably largely falls into one of two categories — employers and employees. Either you're the boss, or you have a boss. And some people currently in the latter category will one day transition to the former category.

That journey to entrepreneurship always looks a little different for every person. Sometimes it starts despite a person not even considering business ownership initially, as was the case with the two contractors profiled this month.

Colin Luttrell, owner of Colin the Plumber in Rochester, New

York, says he never planned on starting a company. Only a few years ago, he had left his job as the manager of another company's service plumbing division and was doing small plumbing jobs on the side in the interim as he prepared to move his family to North Carolina and shift careers. But one of those side jobs required him to pick up some liability insurance. Then another customer called. And another.

"Things sort of kept snowballing from there. I suddenly realized we had to stay in New York to capitalize on all the business potential," he says.

He officially became a small-business owner.

As with Luttrell, owning his own company wasn't something initially on Joe Fuentes' radar either. It took a comment from a business agent addressing a class during Fuentes' plumbing apprenticeship to spark the idea: "Some of you guys in this room will become contractors."

"Becoming a plumbing contractor had never crossed my mind," Fuentes says. "When he said that, it sort of awakened something inside me. He planted a seed in me personally and it took root and stayed in my mind that I should become a contractor."

Eight years later, Fuentes left his job as a union plumber, purchased a used service truck, and set up shop in his garage as owner-operator of S&J Plumbing in the Chicago area.

The stories of Luttrell and Fuentes got me thinking about the pathway to entrepreneurship. It doesn't just happen. It requires having the thought to do it and then actually acting on that thought. Some may think from time to time about starting their own shop, but they never do anything about it.

There's obviously a lot that goes into starting your own business, and it's important to not make any rash choices. But overthinking can also lead to inaction, and if you want to become a business owner, action is what is required at some point.

Maybe the stories of these two entrepreneurs can be part of the push you need to finally act if owning your own business is something that interests you. Even if it's not the only important factor, action is a crucial step. You'll never be able to perfectly prepare in advance, and that's OK.

"I'm still learning about what works and what doesn't," Luttrell explains. "There always seem to be a million things to learn. I'm trying to figure out how to work on the company, not in it."

Enjoy this month's issue. c



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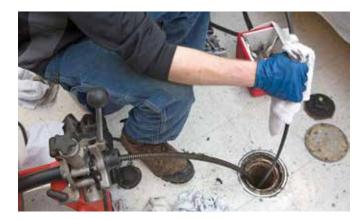
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THE ACCIDENTAL ENTREPRENEUR

RUNNING HIS OWN BUSINESS WAS NOT PART OF COLIN LUTTRELL'S PLAN ONLY A FEW YEARS AGO, BUT NOW AFTER A PERIOD OF RAPID GROWTH HE HAS A STRONG VISION FOR THE FUTURE OF HIS COMPANY // By Ken Wysocky



IN 2021, LONGTIME PLUMBER AND DRAIN CLEANER

Colin Luttrell was just about to move with his family from New York to North Carolina, where he planned to eventually become a firefighter and do plumbing jobs on the side.

But instead, the accidental entrepreneur — who was doing small side jobs at the time, working out of his wife's Mazda SUV until it came time to move — decided to stay in Rochester and capitalize on growing demand for his services by establishing Colin the Plumber, a drain cleaning and service plumbing company.

"I never planned on starting a company," Luttrell says. "But as we were getting ready to move, I agreed to do a water service installation, which required me to buy liability insurance. Then another customer called with a long laundry list of things he needed fixed. Things sort of kept snowballing from there. I suddenly realized we had to stay in New York to capitalize on all the business potential."

Today, the 31-year-old contractor runs four service vehicles, owns a large inventory of drain cleaning equipment, employs three technicians and provides a wide range of services, primarily residential service and repair plumbing, drain cleaning and trenchless pipeline rehabilitation.

By the end of 2023, the company's sales had increased by 200%. And in 2023, Luttrell started renting a 2,000-square-foot shop that includes an office, a tool room and enough space to park two trucks inside.

«Colin Luttrell and his wife Saige.



"It's wild how things turned out," Luttrell says. "It's funny how life works sometimes."

COMPILING EXPERIENCE

While Luttrell didn't know it at the time, the four different plumbing jobs he held after graduating from high school in 2011 helped prepare him to run his own company. In particular, he credits the mentoring he received from a master plumber at his first job, John DiTulio, who taught him the basics of plumbing.

Furthermore, his fourth job as an estimator and project manager at a commercial plumbing company inadvertently ignited his entrepreneurial spirit.

"I noticed how much residential service work the company was turning away and referring to other plumbing companies," Luttrell recalls. "So I proposed creating a service plumbing division, which they agreed to do. And I was named the division's manager."

After two years at that job, he and his wife, Saige, decided to move to North Carolina where houses were much more affordable. Luttrell had already accepted a job he intended to stick with while working toward certification as an emergency medical technician and he and Saige were ready to make an offer on a house. That's when he decided to make the abrupt career U-turn.

"I've been rocking the company ever since," he says.



FAST START

Luttrell decided to simply name the company after himself after noticing another company online that did the same. While it could pose somewhat of a problem in the long run by making it hard for potential customers to recognize the company does more than plumbing, the catchy name has served the initial purpose of differentiating Luttrell's business from competitors.

"I never thought the company would be a long-term thing, so I just picked that as the name, and here we are with Colin the Plumber," he notes.

POINT-REPAIR LINING HERO

he benefits of having trenchless pipe repair capabilities really hit home for Colin Luttrell last winter. That's when on a job at a mansion in an affluent suburb of Rochester, New York. the owner of Colin the Plumber encountered a separation in a stormwater line under a recently poured patio located next to a new in-ground swimming pool.

Debris and tree roots had entered the drainline through the separation and caused backups at the home's downspouts, which were connected to a stormwater drain system. The homeowner suspected a problem when he noticed ice accumulating around various downspout connections, Luttrell says.

"There was no way we were going to rip up that patio to fix the line," Luttrell says.

Not only was the patio almost brand-new, there was a gas line buried under the patio, too, which further complicated matters.

When the 4-inch-diameter drainlines had thawed out sufficiently, Luttrell inspected the system with a RIDGID Mini SeeSnake push camera equipped with a 200-foot cable. After locating the line break, which was about 80 feet away from a two-way clean-out, he cleaned the line with a RIDGID K9-204 FlexShaft drain machine.

Then he installed 2-foot-long PipePatch point-repair liner from Source One Environmental.

"It sleeved the separation perfectly," Luttrell

But the installation was not hassle-free by any means. The line included two short elbows between the clean-out and the separation, which made it difficult to get the Source One packer through the line.

"We used a lot of cooking oil to lube the packer," Luttrell explains. "We also did a dry run first because after you activate the resins, it's go time. You've got to put on your big-boy pants and get after it because if it doesn't work out, you do what you were trying to avoid in the first place. And you end up looking like an amateur."

The job took about a full day.

"The owner was very happy," Luttrell says. "We received a five-star Google review right away."



Colin Luttrell and Nick lachetta use a RIDGID FlexShaft K9-204 machine to clear a drain.

With the help of word-of-mouth referrals, Saige's social media expertise (via posts on Instagram and Facebook) and a logo designed by his stepsister, Casey Brett, the business has grown quickly.

Luttrell says he prides himself on being a do-it-all, hands-on business wearing so many hats has a downside, too - especially amid such rapid growth. He hired his first employee about a year and a half ago and two more hires soon followed.

"We started experiencing growing pains after the first year," Luttrell says. "Transitioning from a one-man-band

"TRANSITIONING FROM A ONE-MAN-BAND TO AN ACTUAL COMPANY IS REALLY TOUGH I'M STILL LEARNING ABOUT WHAT WORKS AND WHAT DOESN'T. THERE ALWAYS SEEM TO BE A MILLION THINGS TO LEARN."

COLIN LUTTRELL

owner. He also loves answering phone calls and communicating with customers.

"When a frantic customer calls with a problem, I love talking them down and troubleshooting plumbing issues over the phone, which is something I did often at my previous job," he says.

GROWING PAINS

But like many other small-business owners, Luttrell has also discovered that to an actual company is really tough. I slowly realized that I'd taken on way too much for a small mom-and-pop shop. I'm still learning about what works and what doesn't. There always seem to be a million things to learn. I'm trying to figure out how to work on the company, not in it."

Luttrell also points out that his wife has been instrumental to the company's success.

"Saige has been my No. 1 supporter

from the start," he says. "We're really a team and we took the leap of faith together when I started the company. She quit her career to become a stay-at-home mom to accommodate the 24/7 demands I face as a service plumber. She set up the company website and did all of the marketing early on and still helps to take as much off my plate as possible."

EQUIPMENT INVESTMENTS

As the company grew, so did its roster of equipment. Luttrell currently runs four service vehicles: two Sprinter 2500 service vans from Mercedes-Benz, a Ram ProMaster van and a Ram ProMaster City, a smaller version of the ProMaster. For jetting nozzles, he relies on Reapers from Hydra-Flex and Warthogs from StoneAge Tools.

Luttrell also invested in a Brute water jetter (4,000 psi at up to 9 gpm) from Jetters



≈ Nick lachetta uses a RIDGID toilet auger.

Northwest; it features an 80-gallon water tank, a UDOR triplex plunger water pump and 300 feet of 3/8-inch-diameter hose.

The business also owns two drum cable machines from RIDGID — a K-7500 and a K-400; four RIDGID sectional drain machines — two K-1500s and two K-50s; three RIDGID K9-204 and two K9-102 FlexShaft drain machines; one Mini-Miller drain machine from Picote Solutions; two Milwaukee Tool handheld

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snake machines; a Milwaukee Tool M18 highspeed, battery-powered drain machine; and a Model 300 drum cable machine from Spartan Tool.

For pipeline inspection cameras, Luttrell opted for three RIDGID SeeSnakes — standard, Mini and microDrain models; and a Milwaukee M18 Mid-Stiff push camera with a 200-foot cable.

"If you're going to have any kind of drain cleaning company, you've got to have a good camera," Luttrell says. "I won't clean a line without first putting a camera into it to thoroughly diagnose the problem. We don't want to just poke a hole in a ball of roots and look like a hero — until the line clogs again. We want to eliminate the entire problem while we're there."

He also invested in a RIDGID NaviTrack Scout pipe locator and a Milwaukee M12 pipeline locator.

"CITIES ARE GETTING OLDER AND TECHNOLOGY IS GETTING BETTER. TO GET AHEAD OF THE GAME, TRENCHLESS PIPE REHAB IS WHERE IT'S AT."

COLIN LUTTRELL



For trenchless pipe rehab, the company relies on PipePatch technology from Source One Environmental and a pipe lining system from Source One with an Armor Lining inversion drum.

CUSTOMER CARE

Providing top-notch customer service has been critical to the company's growth. And investing in productive and reliable equipment that allows Luttrell to complete jobs quickly and efficiently plays a big role in customer service.

"I like to have good equipment — things that last," he says. "I'm reinvesting profits into the business all the time. We're big on quality service and I buy equipment that helps us provide that quality work."

Offering multiple services also strengthens customer service and retention by ensuring that Luttrell can meet as many client needs as possible. That explains why he's been putting more and more emphasis on trenchless pipe rehab, he says. In 2023, the company began offering point repairs as well as full pipe lining service.







« Mark Fry, Colin Luttrell, and Nick lachetta pose in front of the company's fleet of vehicles.

"YOU CAN'T KEEP TAKING IT ALL ON YOURSELF -YOU CAN ONLY WEAR SO MANY HATS. I'M LEARNING THAT YOU HAVE TO GIVE UP SOME THINGS TO REMAIN SUCCESSFUL."

COLIN LUTTRELL

"That's where I want to take this company," Luttrell says. "Cities are getting older and technology is getting better. To get ahead of the game, trenchless pipe rehab is where it's at."

CHANGES IN THE MAKING

Looking back, Luttrell says he is still trying to wrap his head around the company's growth.

"If someone told me two years ago that I'd be where I am now, I would've laughed," he says. "It's a little surreal. I never thought I'd own my own company. Everything happened so quickly. This wasn't planned out the way a normal company is planned."

As a result, Luttrell says he now needs to make time to concentrate on establishing processes and protocols that he hasn't yet had time to fully implement. Furthermore, he also continues to grapple with how to relinquish some responsibilities.

"You can't keep taking it all on yourself — you can only wear so many hats," Luttrell says. "I'm learning that you have to give up some things to remain successful. My goal is to have this company running in a completely different way in 2025 than it is now."

SHARPER FOCUS ON DRAIN CLEANING AND PIPE REHAB

Eventually, Luttrell says he wants to create a separate company that will focus on drain cleaning and trenchless rehab services, leaving his initial company to concentrate solely on residential

keep the same Colin the Plumber company name for the plumbing operation to avoid losing the brand recognition he's built up and come up with a different name for the new business that will reflect its drain cleaning and pipe rehab focus.

service plumbing. He plans to

"A lot of customers don't associate Colin the Plumber with drain cleaning," he says, explaining why creating a second company makes sense. "When people have a drain problem, I want them to be able to search for and find us online under drain cleaning."

As for further growth, Luttrell says adding two more technicians would be ideal.

"I don't want to grow more than that," he says "We've already done the rapid growth thing, even though we weren't trying to do it.

"But despite all the headaches that come with such fast growth, it's still fun and exciting. Even though I never planned it, starting this business has been a real blessing." c

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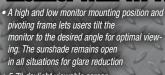


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Pipe Patch Kits enable quick and efficient trenchless point repairs with all required consumables and components packaged together for one-time use. Patch Kits make inventory management easier on your business while ensuring you have all components needed when showing up to a job. Fiberglass patch meets ASTM F1216 requirements and cured patches have a life expectancy of up to 50 years under normal conditions. RIDGID Pipe Patch Kits are designed for 2", 3", 3-4", and 4-6" Packers and at lengths for 32", 3', and 6'



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WRANGLING WORKERS' COMP WOES

In the event of an employee accident and injury, workers' compensation is one of a company's legal obligations so it's important to have a solid understanding of how it works // By Joan Koehne

O RUN A SUCCESSFUL OPERATION, employers must safeguard their greatest asset — their employees. The unpredictability of accidents and injuries in the workplace requires employers to be ready at all times to respond to any given situation. As soon as they hire their first employee, employers assume a wide range of legal obligations. One of these legal obligations involves workers' compensation claims. Every state has its own workers' compensation act, with differing laws and legal precedents.

Brian Bean, executive claims consultant at R&R Insurance in Waukesha, Wisconsin, says workers' compensation requires a different way of thinking than other personnel management practices.

"Workers' comp is in its own little world," he says. "It operates by its own set of rules, its own set of principles, its own set of laws. Employers who figure that out quickly function better in it. Employers who resist it tend to have a lot more problems in claims management."

ACT FAST

Bean warns employers not to take a smug, know-it-all approach to work-related injuries.

"Anytime you think there's certainty about workers' comp, you really shouldn't think that way. You need to get to the facts," he says. "Feeling less certain about it is actually a healthier way to deal with it. It makes you investigate more and get on it quicker."

Don't ignore a situation, he advises.

"The faster you ask questions, the better you'll find out what's

"THE FASTER YOU ASK QUESTIONS, THE BETTER YOU'LL FIND OUT WHAT'S HAPPENING, PEOPLE ARE THE MOST HONEST RIGHT AFTER THINGS HAPPEN. THAT'S WHEN YOU HAVE TO TRY TO LOCK IN STATEMENTS ..."

BRIAN BEAN

happening," Bean says. "People are the most honest right after things happen. That's when you have to try to lock in statements and testimonies and get it to an adjuster."

THE RULES OF ELIGIBILITY

Employers can avoid common pitfalls related to workers' compensation by understanding when their employees are covered by a claim and when they're not. Basically, employees are covered when they are in the course and scope of employment. What exactly does that mean? Some examples may surprise you.

An employee who is on the clock is presumed to be in the course and scope of employment. However, they can be off the clock and still be considered to be employed in a usual and customary way.

One of the most puzzling claims for employers involves employees who have a little too much fun on the road. Whether they're traveling for work or attending a business conference, employees who are intoxicated and injured are likely to have a legitimate workers' compensation claim. Courts have ruled that just because employees are drunk, they aren't removed from the course and scope of employment if they are participating in an employment-related activity. Although they are likely to be eligible for workers' compensation, they probably will get hit with a reduction in indemnity for safety violations.

However, an employee who is drunk at the workplace will likely be deemed to be deviating from the course and scope of employment. Thus, the employee would not be eligible for workers' compensation, if injured. As always, there can be exceptions.

Even a terminated employee can be eligible for workers' compensation. For example, terminated employees are covered when they come to the workplace to collect a final paycheck or participate in an exit interview. If injured, the employee likely has a compensable claim.

THE PERSONAL COMFORT DOCTRINE

Another compensable claim involves an injury or accident that occurs when employees leave the workplace to go to a coffee shop next door during a paid break. Although they are off-premise, they are on a paid break, so they're considered to be in the scope of employment. Paid lunch breaks off-premises would also be considered in the

course and scope of employment. Contrast this to an unpaid lunch break in which an employee slips and falls or sustains an injury at a nearby café. The employee wouldn't have a compensable claim.

Then there are examples related to the Personal Comfort Doctrine which covers worktime breaks for using the bathroom, smoking, snacking and drinking water. Injuries or accidents that occur during comfort breaks fall within the course and scope of employment even for employees working from home who fall and injure themselves on their way to the bathroom.

Personal Comfort claims are routinely covered by workers' compensation. Sportsrelated injuries also may be covered for employees who are injured while playing sports during a work break.

"Basketball hoops are a good example. If you play a pick-up game, then there's a chance someone will get hurt," Bean says. "It's better not to have that stuff around, because if you put it up and leave it up, it's pretty good evidence that you're condoning it. It becomes usual and customary, and you're going to have a workers' comp case you didn't expect."

BUSINESS OR PLEASURE?

That brings up the question of off-premises recreation and social events.

"You've got to have fun, but don't take unnecessary risks, and choose your activities carefully," Bean says.

Courts have upheld a number of claims related to injuries that occurred away from the workplace. Employees have received workers' compensation for injuries sustained at a donkey basketball community fundraiser, a baseball game given as a reward for meeting a sales goal, and a school dance in which a teacher chaperone was injured doing the limbo.

Yet employees aren't covered at every off-premise location or employer-organized event, only those in which the employer derives benefits other than just improved morale. If attendance isn't





LEGAL **ADVISER**

mandatory, then employees are less likely to be covered at the event.

"What you need to do as employers is make it really clear that it's truly voluntary. There are no repercussions for not going to it," Bean says.

ON THE ROAD

The use of company vehicles opens up a lot of liability issues and workers' compensation risks. Bean advises employers to develop clear policies for company-owned vehicles. Policies should define when workers are using the vehicle for employment (a compensable claim) or personal travel (not compensable).

In a related example, an employee injured while on the commute to work or to a job site isn't covered by workers' compensation. Employees participating in employee-sponsored carpools aren't covered, either, as long as participation in the carpool is voluntary, and the sole purpose is transportation to and from employment. However, if the employee is running an errand requested by the employer, then the employee is covered, whether the employee is in a personal or company vehicle.

Traveling employees are also covered by workers' compensation. They receive door-to-door coverage from the time they leave home to the time they return. The exception is when they deviate from their business activities to engage in an activity for a private or personal purpose.

KNOWLEDGE IS POWER

These scenarios are just a small sampling of the incidents that employers encounter. Understanding the intricacies of workers' compensation helps employers manage their claims sensibly and effectively. Bean advises employers to be attentive to their state's labor policies and relevant legal precedents. He also emphasizes the need to investigate claims quickly and thoroughly.

"You need to find out what's going on, so proper decisions get made whether you defend a case or fight a case or accept a case," he says.

Every employer who makes safety a part of the organizational culture promotes a sense of order that safeguards their workforce. By proactively fostering a safe work environment, employers can reduce the number of on-the-job injuries and subsequent workers' compensation claims. c

GROUTING MADE EA



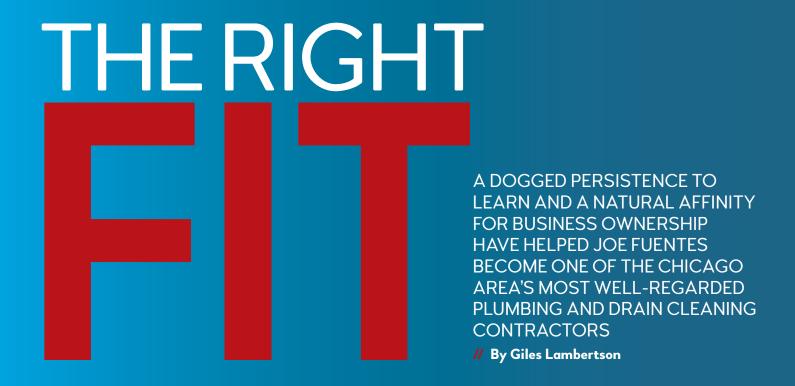
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NO MORE mechanical, analog, dials, switches, or buttons!



hat sparks a person to start a business? The notion is triggered in many ways — admiring a self-employed person and wanting to emulate it, perhaps, or finding yourself with a truckload of widgets and realizing there's a market for them.

For Joe Fuentes, the desire to have his own plumbing company arose during a class several years into his plumbing apprenticeship. A business agent addressed a roomful of apprentice plumbers that evening and in the course of remarks said, "Some of you guys in this room will become contractors."

"Becoming a plumbing contractor had never crossed my mind," Fuentes says. "When he said that, it sort of awakened something inside me. He planted a seed in me personally and it took root and stayed in my mind that I should become a contractor."

The seed didn't bear fruit for eight years. In 2016, Fuentes finally walked away from a \$120,000-a-year job as a union plumber, spent \$10,000 on a used service truck, and set up shop in his garage as owner-operator of S&J Plumbing.

STARTING YOUNG

Owning a business is not a new thing for the extended family of Joe Fuentes, who are immigrants from Argentina. They arrived in the U.S. when the now-41-year-old S&J Plumbing owner was an infant. His grandfather owned a dry-



cleaning establishment in the Chicago area and his father had his own shoe repair shop. How Fuentes ended up plumbing is a story all by itself.

As a 20-year-old, Fuentes was looking for a career path in the trades and noticed that plumbers seemed to earn good wages. After thumbing through the Yellow Pages of a phone book and seeing dozens of listings for plumbers in the Chicago area, he started calling them and asking to become an apprentice.

Fuentes was not immediately successful, so he called some more, and then some more. He made a list of the ones he called, to make sure he didn't call any of them twice. In all, Fuentes reached out to 60 plumbing houses and only one offered him an opportunity. His plumbing career as a union apprentice began.

His first employer was the oldest plumbing house in the state of Illinois but went out of business after two years of Fuentes' five-year apprenticeship. He got on with another plumber and continued to learn the trade. He says the ensuing years were a wonderful learning experience.

"I worked with some great journeyman plumbers," Fuentes says. "I was very fortunate to be paired up with those guys. I learned so many facets of plumbing as an apprentice."

Fuentes is persistent — as demonstrated by his dogged calling of plumbers as a 20-year-old — as well as entrepreneurial. These attributes serve him well as a business owner.

"I like working for myself because I like the freedom of making my own decisions and controlling my future," he says. "I don't like things coming to me. Instead, I like to go out and get them."

Fuentes named his business S&J Plumbing to acknowledge his daughter Sarah and son Joseph. Besides being represented in the company name, they were part of the reason Fuentes was driven to establish himself as a young man in the plumbing trade: He was a single parent raising two children and needed a steady income.

"I don't want to get mushy here, but everything I did I did for them," Fuentes says. "That's why when I named the company, I decided to honor them."

SMALL BUT BUSY

Fuentes' 3,000-square-foot shop is in Arlington Heights, a suburb of Chicago. Yet company crews serve customers across a 20-mile radius of the shop, covering the whole

▼ Joe Fuentes, owner of S&J Plumbing, founded the company in 2016 and services a 20-mile radius from Arlington Heights. He named the company after his daughter Sarah and son Joseph.





≪ Dylan Szpinalski retrieves equipment from an S&J Plumbing van while at a residential job.

region north and west of the Windy City that includes about 80 suburban communities. That's a large residential customer base for a plumbing business, and S&J does, in fact, exclusively serve homeowners and renters. It has no commercial or industrial customers.

"When I started the business after working in commercial and in new construction settings, I knew I wanted just to offer service to residential customers," Fuentes says. "I love this so much more. It's something new every day, rather than traveling to the same old job site. I get to meet new people, which is always enjoyable for me. I never get bored."

His crews head out from the shop each morning in seven service trucks. The chassis of the trucks are from various manufacturers, but each carries a fullfledged enclosed utility body with side compartments, rear access to interior space and rooftop carrying framework.

In the trucks are Milwaukee power tools and RIDGID drain cleaning equipment. Video inspection of pipe interiors is accomplished with RIDGID

"I LIKE WORKING FOR MYSELF BECAUSE I LIKE THE FREEDOM OF MAKING MY OWN DECISIONS AND CONTROLLING MY FUTURE. I DON'T LIKE THINGS COMING TO ME. INSTEAD, I LIKE TO GO OUT AND GET THEM." JOE FUENTES



>> Kyle Stong solders pipe while on a bathroom project.

SeeSnake cameras. Though Fuentes swears by Kohler fixtures because of their reliability, he carries a variety of fixture options for customers.

"I'm proud of our trucks and they are fully stocked with quality products, 99% of them American-made," Fuentes says.

Drain cleaning is a more recent service addition and is a growing part of the business. Fuentes owns a trailered jetter — a Spartan 758 unit — that can infuse a line with water at

3,000 psi and a flow of 12 gpm.

"I don't need the jetter often for our residential customers, but I've had some requests," he says.

On the occasions when clearing a residential drain leads to bigger problems that is, to broken or clogged lines outside the house — Fuentes has the equipment to do the work, including a dump truck and Bobcat mini-excavator. The equipment is needed several times a month.

Chicago's suburban service area contains some pretty old neighborhoods. Consequently, the company replaces quite a lot of pipe, such as waterlines that have aged out and drains constructed in an era of thin-copper material and worn through. Once a week at least, S&J is also called to fix old, leaking natural gas lines. S&J crews stay busy.

BUILDING RELATIONSHIPS

Early in his career, Fuentes chased the money, he says, bouncing among plumbing houses, growing both his skills and his income as a union apprentice. As an employer, he says he realizes now that companies retain good employees mostly through building relationships.

"I've learned that getting one on one with employees is how to keep them," he says. "They are looking for someone they can trust to lead them. My philosophy is, I'm here to serve my employees, not them serve me."

It seems to be a winning philosophy. Fuentes' longest-tenured employee was his helper when he started the business.

"He was my first hire and, eight years later, he is a journeyman plumber," Fuentes says. "He's one of my top guys."

All members of the crew are licensed journeymen or apprentices, except for a few

plumber helpers on the path to an apprenticeship. One apprentice or helper goes out with all journeymen.

"It always is nice to have a second pair of hands on a job and it also is a great recruiting tool when I'm hiring other journeymen," Fuentes says.

S&J's skilled and contented plumbers are producing desired results — satisfied customers. The company does some marketing,



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but the biggest source of new jobs is the good reviews it has received.

"We're among the highest-rated companies in the area, both in the number of reviews and the scores we're given," Fuentes says. "It's a testament to my employees, from the ones answering the phone in the office to the guys out in the field."

Having quality employees is not by happenstance.

"When I hire, I am looking for good people, not just good plumbers," Fuentes says. "After all, customers don't know plumbers, but they know people. They've been interacting with them all their lives. Our customers sense right off the bat that our employees are good people."

THE NEXT STEP

Good people. American-made products. Two decades of plumbing experience to lean on. These are the foundations of S&J Plumbing. What's the next step for the company? The goal, in a word, is growth, Fuentes says.

Growing the fleet of service trucks to 20 from seven. Increasing the number of employees to a level that complements a fleet of that size and then reassessing from there, he adds. Other goals include tripling the size of the office, equipment yard and

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"WHEN I STARTED THE BUSINESS AFTER WORKING IN COMMERCIAL AND IN NEW CONSTRUCTION SETTINGS, I KNEW I WANTED JUST TO OFFER SERVICE TO RESIDENTIAL CUSTOMERS. I LOVE THIS SO MUCH MORE. IT'S SOMETHING NEW EVERY DAY, RATHER THAN TRAVELING TO THE SAME OLD JOB SITE. I GET TO MEET NEW PEOPLE ... I NEVER GET BORED."

JOE FUENTES



♦ One apprentice or helper goes out on a job with all of S&J's journeyman plumbers. "It always is nice to have a second pair of hands on a job and it also is a great recruiting tool when I'm hiring other journeymen," Fuentes says.



S&J Plumbing office manager Christa Limperis workday. Limperis has been with the company since

OFFICE SUPPORT

hrista Limperis is the office manager for Chicago-area S&J Plumbing. That job title comes with a lot of duties.

responsibilities include customer service, dispatching, human resources, booking appointments for owner Joe Fuentes, and software applications. Oh, and volunteering company employees for community projects and supporting community programs.

Limperis ended up at S&J Plumbing because she worked with Fuentes at another plumbing house. They kept in touch after leaving that firm. When Fuentes started his plumbing company in Arlington Heights in 2016, she was his second hire.

"She added a tremendous amount of value to our company," Fuentes says. "When I was a one-man operation, hiring her allowed me to focus more on customers. It allowed me to focus on growing the business and implementing processes for growth."

The company has grown into a 15-employee plumbing house with plans underway to more than double that in the next few years. While the fast growth taxes the plumbing crews that serve residential customers in suburban Chicago, it also ratchets up the pressure on back-office staff. Fuentes recognizes the connection.

"It was a challenge for me to run a oneman shop," he says. "Having someone in the office was so important. Without Christa, it would be impossible for the company to grow now. Without someone like her in the office, it would be impossible to get to the next level."

In other words, behind every good plumber better be a good office manager.



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JOE FUENTES



Fuentes meets with some of his crew in the shop prior to the start of the workday. "I've learned that getting one on one with employees is how to keep them," he says. "They are looking for someone they can trust to lead them. My philosophy is, I'm here to serve my employees, not them serve me.'

↑ The team at S&J Plumbing includes, from left, Colin Kurpieski, plumber's helper; Kyle Stong, Dave Denning and Tim Golter, journeyman plumbers; Toby Fisher, plumber's helper; Dylan Turner, journeyman plumber; Jay Parker, CSR/dispatcher; Joe Fuentes, president/owner; Christa Limperis, office manager; Mike Taylor, plumber's helper; Ryan Faulhaber, Chris Loveless and Luke Roos, apprentice plumbers; Tom Iversen, journéyman plumber; and Dylan Szpinalski, apprentice plumber.

warehouse — and owning the property instead of leasing it. Perhaps the most aggressive plan is to begin to offer HVAC and electrical services alongside plumbing and drain cleaning, thereby becoming a full-service shop for residential customers.

This is ambitious, but Fuentes seems ready to undertake it. The journeyman plumber has freed himself from service work to oversee the growth.

"For the last couple years, I have not touched a tool," he says. "Managing full time is something new for me and I'm trying to get better at it. Sometimes I almost obsess over it. It's such a challenge to balance making employees happy with getting the work done efficiently." **c**



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MONEY **MACHINES**

FILLING A NICHE

Trailer-mounted water jetter helps contractor compete more effectively by providing customers a cost-effective vac truck alternative // By Ken Wysocky

IGGER ISN'T ALWAYS BETTER.

Just ask Thomas Ammons at EHC Environmental in Red Springs, North Carolina, a company that provides emergency response, dry and wet vacuum and drainline services.

With six vacuum trucks in its fleet, the company is wellequipped to handle a variety of customer needs. But Ammons, a senior project manager and vice president at EHC and the husband of owner Kim Ammons, still found it difficult to compete for certain jobs.

"We had the vac trucks, but the hourly rate for them was so high there were certain jobs where I couldn't compete," he explains.

The solution? A G7 trailer-mounted water jetter from GapVax that's small enough to be more cost-effective for clients than a vacuum truck, but still provides the power needed to quickly handle clogged lines at plants and factories.

"We were already doing vac truck work for companies and this machine opened the door to do jetting work for the same clients," Ammons says. "So it either expanded what we already were doing or opened the door to even more clients. We're here to solve customers' problems, just like a good lawyer or doctor. And the G7 allows us to do just that."

INSTANT VALUE

Ammons says the company, which was founded in 1986 by his wife's father, Bill Bright, and employs about 20 people, recognized the G7's value after using a demo model on a job.

"We used it to jet some lines for a poultry-processing plant and it worked great," he says. "The company was using another contractor at the time and we cleaned the lines better than the other contractor. The head maintenance guy commented that the G7 was working like a charm. So I asked him, 'If I buy this jetter, can I do all your work?' And he said yes."

EHC Environmental took delivery of the jetter in November 2020. In 2023 alone, the company generated more than a half-



A big impetus for EHC Environmental purchasing the GapVax G7 trailer jetter was to gain the business of a poultry-processing plant. In 2023 alone, that client generated more than a half-million dollars' worth of work for EHC Environmental.





↑ The G7 jetter allows EHC Environmental to compete for a wider variety of jobs since it provides plenty of power while also being more cost-effective for clients than a vacuum truck.

million dollars' worth of work for that client, which also opened up other opportunities, Ammons says.

Mobility and versatility were big selling points for Ammons. The trailer jetter is much more maneuverable in tight spaces than a large vacuum truck. Still, 800 feet of 3/4-inch-diameter hose plus a second reel that holds 200 feet of 1/2-inch hose enables his technicians to handle a variety of jobs.

When combined with the unit's remotecontrol capability, a 500-gallon water tank and a water pump that generates 2,500 psi at up to 40 gpm, Ammons says the G7 equips the company to productively handle all manner of jobs, from cleaning stormwater and sanitary sewer lines to jetting factory process lines clogged with grease and other materials.

"One of my favorite features is the remote operation, which is huge when we're working inside buildings," he says. "And drivers don't need a commercial driver's license to tow it."

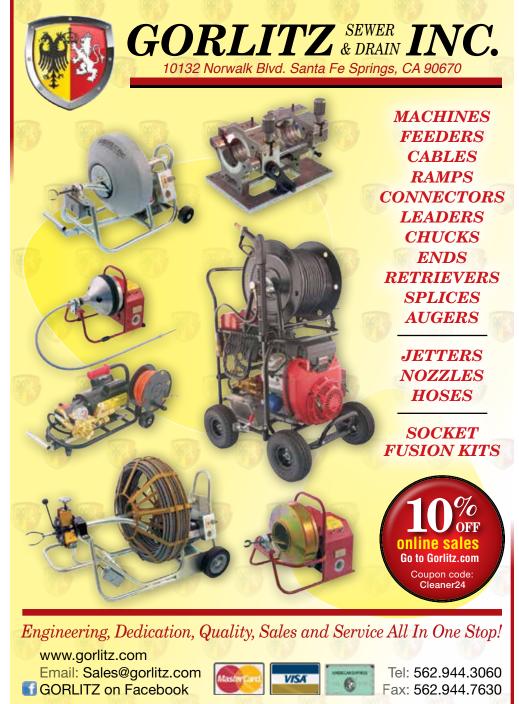
TOUGH JOB? NO PROBLEM

The G7, which also features a triplex water pump, a hydraulically powered reel that rotates 180 degrees, durable stainless steel fluid lines and variable-speed controls, often proves its worth.

But one job in particular stands out in Ammons' mind. Late one Sunday afternoon

"THE ECONOMICS WORK OUT SO MUCH BETTER. THE PROFITABILITY WORKS OUT SO MUCH BETTER. THE TIME SAVINGS IN TERMS OF LABOR WORKS OUT BETTER. AND CUSTOMER SATISFACTION IS SO MUCH BETTER. I WANT A PIECE OF EQUIPMENT THAT'S GOING TO MAKE ME MONEY. NOT SIT IN MY YARD AND COST ME MONEY."

THOMAS AMMONS



MONEY **MACHINES**

in 2021, he was called out to a job at a restaurant in Huntersville, North Carolina, part of a well-known national chain of eateries. The restaurant's grease trap line was badly clogged, flooding the kitchen.

"It was a nasty, nasty clog," Ammons says.

But the G7 powered through it. Later that evening, the manager of the restaurant called Ammons to compliment EHC Environmental for getting the job done.

"She told me we were the 11th company to clean that line within the prior two weeks and the first one to solve the problem completely," he says. "It was a combination of the team we had there and the G7, as well as how we train guys to never leave a job until we solve a problem. The G7 made us look really good that day."

SPEND MONEY TO MAKE MONEY

The unit cost roughly \$85,000. But it has provided such a great return on investment that Ammons says he is thinking about buying a second one instead of another vacuum truck.

"The economics work out so much better," he says. "The profitability works out so much better. The time savings in terms of labor works out better. [The water tank minimizes the need for time-consuming tank refills.] And customer satisfaction is so much better. I want a piece of equipment that's going to make me money, not sit in my yard and cost me money."

Overall, the G7 has been a great fit for EHC Environmental's operations, serving as a workhorse that adds to the company's many capabilities. Where would the company be without it?

"We would've been handcuffed from doing what we wanted to do — more limited about the services we could provide and unable to do jobs as fast," Ammons says. "It helps us expand our services and our business opportunities." c

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TECH PERSPECTIVE

Tech Perspective looks at technology-related issues and provides information and advice that cleaning professionals can apply to equipment selection and to their daily work in the field. Industry members are welcome to offer ideas for this column.

Please direct them to editor Kyle Rogers, editor@cleaner.com.

JETTER MYTH BUSTING

Sewer jetting best practices have evolved alongside advancements in hose nozzle technologies // By Dan Story

for municipalities and contractors. Making matters worse, our comprehension of sewer line jetting has evolved alongside advancements in hose nozzle technologies, which in some cases directly contradict

EWER MAINTENANCE IS AN ONGOING challenge

So when conducting training classes, I first address a common misconception: For years, sewer maintenance crews have been taught to shoot a nozzle up a line in a hurry and clean as they come back. But this is not a race. If you are not slowing down to cover all the ground, it simply is not going to work very well. This "hurry up and clean" approach is counterproductive and can potentially redirect sewage flow into homes, commonly known as blown toilets.

Instead, I train sewer crews to clean as you go in and rinse as you come out. This approach, 95% of the time, will clean a line in one pass instead of making many passes.

Misconceptions abound in the industry and often reflect a lack of understanding of the fluid dynamics of high-pressure nozzles. Over time, additional best practices have been developed through a process of trial and error.

"READ" THE RESULTS

current practices.

You can learn a lot by paying attention to what is happening in the line going in and coming back.

Crews need to be trained to understand what they are "reading" coming out of the pipe. The information can tell you whether you are going too fast or too slow, how much debris is in the line, and whether the line is clean after the first pass or not.

When going up the line, for example, it is beneficial to observe the amount of debris present. If there is minimal debris returning, it indicates that the pipe is in relatively good condition, with a low accumulation of debris. So you can accelerate your speed. However, an excessive amount of recovered material suggests the need to slow down. In

such cases, the flow of water acts as a conveyor belt, effectively carrying the debris out.

The trick is paying attention to your hose. Make sure your hose comes back clean, and then you know your pipe is clean. How much debris is in the first pass? This information can tell you whether you're going too fast or too slow. Remember to never outrun your flow because your flow is your conveyor belt. If there is a lot of material on the hose, it is telling you to slow down. If your hose stays clean, you know you are moving at a good pace.

When the water flow confirms the pipe has been cleaned at the right speed, you can then lower the pressure in the hose to between 900 to 1,000 psi and come back through the pipe at the same speed. This final single "rinsing" pass can leave the line totally clean.



ᄎ A high-efficiency Tier 3 nozzle running 60 gallons a minute at 2,000 psi will impact debris 9 feet away with 98 pounds of force.

>>> When water flow confirms the pipe has been cleaned at the right speed, a maintenance crew can lower the pressure in the hose and come back through the pipe at the same speed.

Another common sewer jetting misconception is that you don't need to open the upstream manhole when cleaning. This can actually increase pressure in the system and lead to blown toilets, where sewer gases flow up the laterals and cause sewage water to overflow from residential toilets.

Approximately 95% of blown toilets can be attributed to how the operator cleans the lines. However, identifying certain signs can help mitigate these issues. For instance, a sudden rush of water during the return flow could indicate the upstream manhole was closed instead of being left open.

PROTECT YOUR INVESTMENT

Slowing down and observing the results allows for cleaning to be performed in a single pass, which helps safeguard the hose from potential damage.

If you are going into each pipe once, rather than three times, to clean it, you are basically tripling the life of a \$3,000 to \$4,000 hose.

Beyond the wear and tear on the equipment, there are also operational costs to consider such as water, fuel, as well as the productivity of the operators. Cleaning more efficiently and effectively means lowering the operating costs per pipe and increasing what a city's public works department can do. And today, everybody is trying to figure out how to do more with less.

NOZZLE SELECTION MATTERS

Don't overlook the importance of nozzles even when expensive trucks are purchased for providing a water supply. While you may have invested a half-million dollars for a truck to clean sewer lines, its impact is only as good as the nozzle at the end of the hose. If you are using a cheap hundred dollar nozzle, you now have a hundred dollar truck because it is the nozzle that cleans all of the pipe, not the truck.

As is known throughout the industry, there are tiers of nozzles which are rated for water efficiency — Tier 1 (about 30% efficient), Tier 2 (50-60% efficient), and Tier 3 (75-98% efficient).



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PERSPECTIVE

However, even within the Tier 3 category, there are significant differences in levels of efficiency. Opting for the lower-end Tier 3 nozzle with 75% efficiency could still lead to additional trips to refill. Also, such units may not remove restrictive sewer buildup or blockage in a timely manner.

A Tier 1, 30-degree drilled nozzle running 72 gallons a minute at 2,200 psi will only exert 13 pounds of force to move debris 9 feet away from the nozzle. In contrast, a very high-efficiency Tier 3 nozzle running 60 gallons a minute at 2,000 psi will impact that debris 9 feet away with 98 pounds of force.

When you put the right nozzle on, you can do things that you never thought were possible. You will not have to sit there and spend all day doing what you need to do.

What sets the most efficient Tier 3 nozzles apart from others in the category is fluid mechanics engineering on a par with the aerodynamics of race cars or jet fighters.

In the case of Tier 3 nozzles at KEG Technologies, the highperformance fluid mechanics design leaves little room for power losses and excessive turbulence. After exiting the jetter hose, water travels into the body of the nozzle before moving through smooth, curved channels. This design enables the water to maintain its power and speed before entering the nozzle's replaceable titanium ceramic inserts. Next, the water is funneled from a short conical shape to a larger, longer cylindrical shape, allowing a tight water pattern to emerge.

The internal workings of the nozzle, including the way the water gets turned, redirect the energy of the high-pressure water entering the nozzle as efficiently as possible. This results in what is needed for the task: more thrust and power using less water.

OPTIMAL TECHNIQUE IS KEY

Effective cleaning involves more than just using a powerful nozzle. It also entails understanding the proper positioning and placement of the nozzle within the pipe.

In my training, we teach about the difference between laying a nozzle on the bottom of the pipe and centering it into the pipe. We teach about the flows and angles based on the size of the pipe and the condition of the pipe based on the last camera footage. We teach how to use a banked turn with the water hose to get more power with less water.

If there is an issue with roots or heavy grease, you want to use a controlled rotation nozzle which will cut and chop it up enough to avoid debris going through the manhole and creating blockages

... NEVER OUTRUN YOUR FLOW BECAUSE YOUR FLOW IS YOUR CONVEYOR BELT. IF THERE IS A LOT OF MATERIAL ON THE HOSE, IT IS TELLING YOU TO SLOW DOWN. IF YOUR HOSE STAYS CLEAN, YOU KNOW YOU ARE MOVING AT A GOOD PACE.

downstream. I recommend using a nozzle capable of breaking up blockages to a particulate size small enough to go all the way to the treatment plant without creating a problem downstream.

THE SCIENCE BEHIND BEST PRACTICES

With the advancement of nozzle technologies, there is a need to get everyone on the same page about the proper techniques for cleaning sewer lines.

What surprises even experienced sewer professionals is the science that is behind the best practices. What we teach is based on understanding fluid dynamics. We look at the horsepower of a truck that drives the water pump for a rate of volume at a particular psi level. We factor in the efficiency of the nozzle. What we want to get to is how to run the truck at a lower rpm and psi that will clean the line easier, better and more efficiently.

We can show operators how to use less water, less fuel and cause less wear and tear. Bottom line, it's about how to get more work done while using fewer resources. And of course, this reduces the risk of the worst-case scenario of blowing up toilets in people's homes. c

Dan Story is operations manager at KEG Technologies, a Spartanburg, South Carolina-based manufacturer of sewer and storm line products including Tier 1 to Tier 3 nozzles, chain cutters, floor cleaners and camera nozzle systems. As a national trainer of best-practice techniques, the company is a member of NASSCO and its Tier 3 high-efficiency nozzles, such as the Torpedo, Royal and OMG, provide up to 98% efficiency. For more information, call 866-595-0515 or visit kegtechnologies.net.





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AMERICAN JETTER 6908 Pine Grove Rd., Knoxville, TN 37914 866-944-3569 • 865-524-4647 • (f) 865-247-5105 www.americanjetter.com • andy@americanjetter.com See ad on page 69	AJ5IT1840 AJ5IT2040 AJ58S1140 AJ5IT3040 AJ5IT1850	20" 24" 12" 30" 20"	4000 4000 4000 4000 5000	18 20 11 30 18	65HP Kohler 74HP Kohler 37HP Kohler 111HP Kohler 97.5HP Kohler			X X X X		500′ 500′ 500′ 500′ 500′	YES YES YES YES	YES YES YES YES
CAM SPRAY 520 Brooks Rd., lowa Falls, IA 50126 800-648-5011 • 641-648-5011 • (f) 641-648-5013 www.camspray.com • sales@camspray.com See ad on page 22	RCJ4008H LJ4008H VM4008H VM3012 TM3012H Compact 3012 SKID STB3012H STB4008H STB3012H-HOT	6" 6" 8" 8" 10" 10" 10"	4000 4000 4000 4000 4000 4000 3000 4000 3000	8 8 8 8 8 12 8	Honda 800CC efi Honda 800CC efi			X X X	X X X X X	200' 200' 400' 400' 400' 400' 400' 400'		YES
CENTRAL OKLAHOMA WINNELSON 5037 NW 10th St., Oklahoma City, OK 73127 888-947-8761 • 405-947-8761 • (f) 405-947-1934 www.centralwinnelson.com krjones@winnelson.com See ad on page 47	KJ-1350 KJ-1750 KJ-2200 KJ-3100	4" 4" 6" 10"	1350 1750 2200 3000	1.4 1.4 2.4 5.5			X X X			200′ 200′ 200′ 300′		
PRESURE SYSTEMS LTD. PRESURE GYSTEMS LTD. AND ACTUAL CONTROL OF THE SURE CLEANING EXCEPTION TO THE SURE SYSTEMS LTD. 41 Earnhardt Rd., Sussex Corners, NB E4E 6A1 CANADA 800-315-5533 www.easykleen.com • sales@easykleen.com See ad on page 47	EZJ3512G EZJ3512G-MWK EZJ4010G-MWK	4" to 10" 4" to 10" 4" to 10"	3500 3500 4000	12 12 10	35 HP Vanguard 35 HP Vanguard 35 HP Vanguard		X X		X	300, 300, 300,	YES YES YES	YES YES YES
GENERAL PIPE CLEANERS, DIV OF GENERAL WIRE SPRING CO. 1101 Thompson Ave., McKees Rocks, PA 15136 800-245-6200 • 412-771-6300 www.drainbrain.com • info@drainbrain.com See ad on page 2	JM-1000 JM-1450 JM-2900 JM-3000 JM-3080 JM-2512 Typhoon	3" 4" 8" 8" 10"	1500 1500 3000 3000 3000 2500	1.4 1.7 4 4 8 12	1.2HP 1.5HP 13HP 13HP 20HP 24HP	х	X X X	х		150' X 1/4" 200' X 3/8" 300' X 3/8" 300' X 3/8" 400' X 1/2"		
GORLITZ SEWER & DRAIN, INC. 10132 Norwalk Blvd., Santa Fe Springs, CA 90670 877-446-7548 • 562-944-3060 • (f) 562-944-7630 www.gorlitz.com • sales@gorlitz.com See ad on page 33	GO 4000 GO 3500 GO 3000 GO 1500A	10" 10" 8" 3"	4000 3500 3000 1500	8 55 45 21	Honda GX630 Gasoline Engine Honda GX630 Gasoline Engine Honda GX630 Gasoline Engine 2HP 110 Volt Electric Motor		X X X			300' 300' 50'		

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JETTER MANUFACTURERS	MANUFACTURER MODEL	MAX PIPELINE CAPACITY	PRESSURE (PSI)	FLOW (GPM)	MOTOR/ENGINE	CARRY	PUSH/PULL	TOW	MOUNTED	HOSE REEL CAPACITY	WIRELESS REMOTE CAPABILITY	HOT WATER JETTING
HOTJET USA 14773 Heritage Crest Way, Riverton, UT 84065 800-624-8186 ● 801-545-0777 www.hotjetusa.com sales@powerlineindustries.com See ad on page 69	XtremeFlow XF2LNG1240CW HotJet 2 Load'nGo HJ2LNG1040HW HotJet 2 XtremeFlow 2 XtremeFlow Turbo Diesel XFDTA2040Y	12" 12" 12" 12" 24"	4000 4000 4000 4000 4000	10 10 10 10 20	35HP 35HP 35HP 35HP 59HP			X X X	x x	300' 300' 500'	YES YES YES YES YES	YES YES
JETTERS NORTHWEST 16750 Woodinville-Redmond Rd. NE, Ste. C-101 Woodinville, WA 98072 877-901-1936 • 206-283-5252 www.jettersnorthwest.com info@jettersnorthwest.com	4009 Brute Portable Jetter 3012 Brute Portable Jetter 3508 Propane Brute Portable Jetter 3005 Plumber Jet Drain Invader	10" 12" 8" 6" 1" - 3"	4000 3000 3500 3000 2050	9 12 8.5 5 1.4	Kohler or Honda Gas Kohler or Honda Gas Propane Kohler Honda Gas Electric	х	x x x			300' x 3/8" 300' x 1/2" 300' x 3/8" 200' x 5/16" Optional 100' x 3/16"	YES YES YES	
MYTANA LLC 746 Selby Ave., St. Paul, MN 55104 800-328-8170 www.mytana.com • mytana@idexcorp.com See ad on page 37	M20T M20 M30 MV84	2" 4" 6" 10"	1500 1500 3000 4000	2 2 4.5 8	2HP Electric 2HP Electric 390cc Gas 800cc Gas	х	X X X			50' x 1/8" 115' x 1/4" 200' x 3/8" 250' x 3/8"		YES YES
SOUTHLAND TOOL MFG. INC. 1430 N Hundley St., Anaheim, CA 92806 714-371-3099 www.southlandtool.com • jair@southlandtool.com See ad on page 5	Sewer Inspection (ST-PRO-1)	24"	2000- 3000	35-80								
SPARTAN TOOL SPARTAN TOOL 1618 Terminal Rd., Niles, MI 49120 800-435-3866 www.SpartanTool.com JShoemaker@SpartanTool.com See ad on page 72	717 727 738 Cadet	1 1/4" to 6" 1 1/4" to 6" 3" to 12" 1 1/4" to 3"	1500 3000 2000 1500	2.2 4 12 1.4	2HP Electric Gas Gas w/electric start 1.5HP Electric	х	X X	х	х	115' 200' 250' 30'		
TROJAN WORLDWIDE, INC. 3306 Ella Blvd Warehouse C, Houston, TX 77018 800-392-4902 ● 713-692-1140 www.trojanworldwide.com info@trojanworldwide.com See ad on page 55	C5300 TWWS3500 TWW1000 TWW2000 TWW3000	4" 12" 12" 12" 24"	4200 3500 3500 3000 3000	4 8 8 12 22	Honda GX390 Honda GX690 Honda GX690 Kawasaki FD851D Perkins 400 Series		Х	X X X	Х	300' 400' 400' 600'	YES YES YES YES	YES YES YES

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Distributor of: RIDGID, Jetters Northwest Brute

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Distributor of: General Pipe Cleaners, RIDGID, Spartan Tool

CABLE MACHINE MANUFACTURER/DISTRIBUTOR	MANUFACTURER MODEL	DRUM CAPACITY	PIPE DIAMETER	DISTRIBUTOR OF
ALLAN J. COLEMAN CO. 5725 N Ravenswood Ave., Chicago, IL 60660 773-728-2400 ● (f) 773-728-2499 www.allanjcoleman.com ● info@allanjcoleman.com See ads on pages 19, 46				Duracable Manufacturing, Electric Eel Mfg., General Pipe Cleaners, RIDGID, Spartan Tool
CENTRAL OKLAHOMA WINNELSON 5037 NW 10th St., Oklahoma City, OK 73127 888-947-8761 • 405-947-8761 • (f) 405-947-1934 www.centralwinnelson.com • krjones@winnelson.com See ad on page 47	K-3800 K-400 K-7500 K-50 K-60SP	100' Max 100' Max 250' Max 100' Max 150' Max	3/4" to 4" 1 1/4" to 4" 3" to 10" 3/4" to 4" 1 1/4" to 4"	RIDGID
COAST MANUFACTURING 29250 Meadowview Rd., Juction City, OR 97448 541-684-0743 www.coastmanufacturing.com sales@coastmanufacturing.com See ad on page 55	TM750 TM5800 TM50 TM38 TM25	11/16" x 150' or 3/4" x 150' 11/16" x 120' or 1/2' x 80' or 3/8" x 90' 1/2" x 120' 3/8" x 75' 1/4" x 50'	3" to 10" 3" to 8" 1 1/2" to 3" 1 1/2" to 3" 1 1/4" to 2"	
DURACABLE MANUFACTURING 300 Ashworth Rd., West Des Moines, IA 50265 800-247-4081 www.duracable.com • sales@duracable.com See ad on page 9	DM175 upright DM162 upright DM55 sled DM30 sled J-MAXX sled DM150 pivot DM138 sink DM125 sink	23" or 27" drum holds 3/4" or 11/16" cable up to 100' 18" drum holds 5/8" x 80' cable 26" drum holds 11/16" or 3/4" cable up to 100' 19" or 21" drum holds 1/2" or 5/8" cable up to 100' 16" or 19" drum holds 3/8" or 1/2" cable up to 75' 8" or 14" drum holds 3/8" or 1/2" cable up to 75' 8" or 14" drum holds 1/4" or 3/8" cable up to 75' 8" drum holds 1/4" x 37' cable	3" to 10" 2" to 6" 2" to 10" 2" to 6" 1-1/4" to 4" 1-1/4" to 3" 1-1/4" to 2"	RIDGID, Picote

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GENERAL PIPE CLEANERS 1101 Thompson Ave., Mc Kees Rocks, PA 15136-3818 800-245-6200 • 412-771-6300 www.drainbrain.com • info@drainbrain.com See ad on page 2	Super-Vee Mini-Rooter XP Power-Vee Speedrooter92 Maxi-Rooter Mini-Rooter Pro Sewerooter T-4 Speedrooter XL	50' x 1/4" or 5/16", 35' x 3/8" 75' x 3/8", 50' x 1/2" 50' x 1/4" or 5/16", 35' x 3/8" 100' x 3/4" or 5/8" 125' x 3/4" or 150' x 5/8" 75' x 3/8", 50' x 1/2" 100' x 9/16", 75' x 5/8" 100' x 3/4" or 5/8"	1 1/4" to 3" 1 1/4" to 4" 1 1/4" to 3" 3" to 10" 3" to 10" 1 1/4" to 4" 3" to 6" 3" to 10"	
GORLITZ SEWER & DRAIN, INC. 10132 Norwalk Blvd., Santa Fe Springs, CA 90670 877-446-7548 • 562-944-3060 • (f) 562-944-7630 www.gorlitz.com • sales@gorlitz.com See ad on page 33	GD 68HD GO 68 GO 62A HD GO 50A GO 15A	11/16" x 150' 11/16" x 150' 5/8" x 100' 3/8" x 90' 1/4" x 50'	3" to 10" 3" to 10" 3" to 4" 1 1/2" - 3" 1 1/4" to 2"	
KEN-WAY CORPORATION 930 Roberts Rd., Sparta, WI 54656 800-533-0551 • 608-269-3752 • (f) 608-269-8129 www.ken-way.com • info@ken-way.com See ad on page 63	Ken-Way Junior KEN-WAY 400	3/8 x 75′ 3/4″ x 100′	1 1/4" to 2" 6"	
MYTANA LLC 746 Selby Ave., St. Paul, MN 55104 800-328-8170 www.mytana.com • mytana@idexcorp.com See ad on page 37	M500 M661 M81 M888	50° 100° 125° 125°	1" to 2" 1 1/2" to 4" 3" to 10" 3" to 10"	
PICOTE LIFE FOR PIPES PICOTE SOLUTIONS 777 W Pinnacle Peak Rd., St. B-108, Phoenix, AZ 85027 864-940-0088 www.picotegroup.com • sales@picotesolutions.com See ad on page 8	Mini Cleaner Midi Cleaner Mini Miller Super Midi Maxi Miller	50' 107' w/ extension 82' w/ extension 97' w/ extension 132' w/extension	1 1/4" to 3" 2" to 8" 2" to 6" 3" to 8" 3" to 12"	



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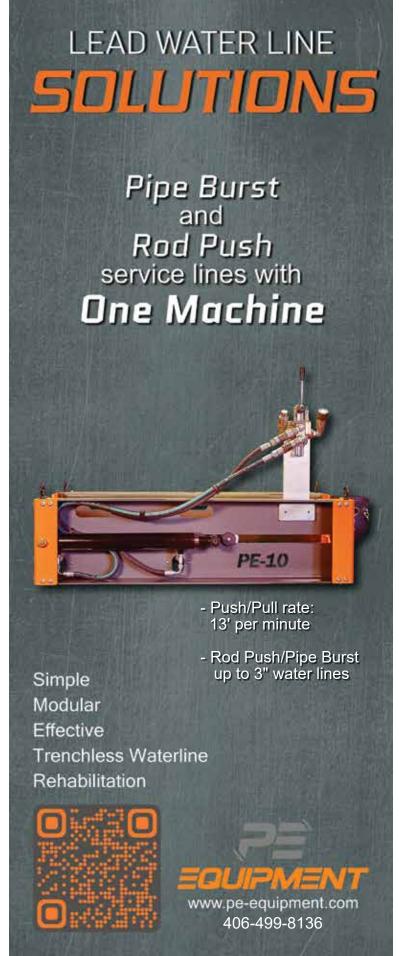
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THE CABLE CENTER, INC. 8318 Olive Blvd., Saint Louis, MO 63132 800-257-7209 • 314-993-3099 • (f) 314-432-8024 www.thecablecenterinc.com thecablecenterinc@gmail.com See ads on pages 31, 61				Electric Eel Mfg., General Pipe Cleaners, RIDGID, Spartan Tool
TROJAN WORLDWIDE INC. 3306 Ella Blvd Warehouse C, Houston, TX 77018 800-392-4902 • 713-692-1140 • (f) 713-692-1053 www.trojanworldwide.com info@trojanworldwide.com See ad on page 55	Trojan Stallion Trojan Pony Trojan Colt Trojan DC Colt DT188 Drill Machine	162' 110' 105' 105' 45'	3" to 10" 2" to 6" 1 1/2" to 4" 1 1/2" to 4" 1 1/2" to 2"	

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General Pipe Cleaners' Sewerooter T-4 midsize drain cleaner packs the punch and portability to unclog 3- to 6-inch lines up to 100 feet long. It carries 100 feet of 9/16-inch Flexicore cable to clear stubborn stoppages in 3- to 4-inch inside lines. Heavy-duty 9/16-inch cable provides more torque than traditional 1/2-inch cables offer, yet it can clean the same size drainlines. Need to clear tree roots and other tough clogs from 3- to 6-inch lines? Simply switch drums to 75 feet of 5/8-inch Flexicore cable. The unit has a variable-speed Power Cable Feed, fold-down handle, stair climbers and truck loading wheel. Its strong, reinforced frame rides smoothly on big 10-inch wheels. Flexicore cable offers kinking resistance and strength with the right amount of flexibility. 800-245-6200; www.drainbrain.com

3 // GORLITZ SEWER & DRAIN MODEL GO 68HD

The Model GO 68HD heavy-duty electric drain cleaning machine from Gorlitz Sewer & **Drain** is available in two different versions, either with an open steel reel or enclosed polyethylene drum, and it can be outfitted with an optional power feeder. Standard configuration is 150 feet of 11/16-inch hollow-core cable, which should reach most blockages with a single reel. Overall weight of the machine is 185 pounds. Adding a loading ramp and electric winch to any vehicle makes transportation quick and simple. It is designed to clean pipes 3 to 8 inches in diameter. 877-446-7548; www.gorlitz.com

4 // MILWAUKEE TOOL M18 FUEL HIGH SPEED CHAIN SNAKE

Delivering full power at max distance, Milwaukee Tool's M18 FUEL High Speed Chain Snake can descale up to 75 feet out for the easiest, most controlled wall-to-wall clean. It has a variable-speed dial and durable electronic foot pedal for more control in the line, along with a mechanical clutch to protect the cable in the application. The partially enclosed drum allows for mess containment and easy access for cable cleaning and field repair. The telescoping handle and the durable wheelbase provide easy transportation on and off the job site. With the power to complete multiple jobs on one charge, the chain snake can clear up to 150 feet of scale buildup when paired with an M18 REDLITHIUM HIGH OUTPUT HD 12.0 battery pack. 800-729-3878; www.milwaukeetool.com

















5 // RIDGID K-4310 FXP DRUM MACHINE

The K-4310 FXP Drum Machine is RIDGID's most powerful drum machine, featuring a cable counter that provides real-time, in-pipe cable distance for faster locating and diagnostics. Ideal for residential and commercial plumbing and drain cleaning projects, its powerful brushless DC motor spins at 230 rpm and provides long-lasting runtime with less required maintenance. Clearing 3- to 10-inch lines, it is powered by the FXP Technology Platform, which provides cordless freedom and powerful performance. The cable distance tracking feature allows professionals to always know where their equipment is located within the line, simplifying cleaning. The enclosed quick-change drum is easily removed, allowing for easier setup and transport, while the rotating inner drum efficiently dispenses cable and reduces the chance of cable flip over. Integrated AUTOFEED Technology advances and retrieves cable up to 28 feet per minute with zero tools. 800-769-7743; www.ridgid.com

>>> CLEANING NOZZLES

6 // ARTHUR PRODUCTS ALPHA KIT

Arthur Products designed its Alpha Kit for low-flow, low-pressure systems. Available in 1/8inch FNPT and 1/4-inch FNPT versions, the jets are drilled to the end user's exact pressure and flow specifications. Designed for do-it-yourself property owners with low-pressure systems, the kits are highly versatile. Each kit includes a flusher nozzle, a penetrator nozzle, a de-icer/degreaser nozzle, a sewer hose (25, 50, or 100 feet), a tip cleaner, a quick disconnect coupling and a carrying case. 800-322-0510; www.arthurproducts.com

7 // HYDRA-FLEX REAPER

Designed for residential pipes, the 1/4-inch Reaper from Hydra-Flex takes on obstructions with a complete sweep of the full diameter of pipe walls thanks to its 30-degree cone of coverage. The spray angles are optimized for maximum pulling and thrusting power to cut through blockages faster in fewer passes, saving time and water. The stainless steel housing and tungsten carbide wear surfaces make this nozzle durable. It is designed to be repaired in less than 10 minutes to be back up and running without leaving the job site. 952-808-3640; www.hydraflexinc.com

8 // SEWERPROSHOP BLUE STAR

SewerProShop's Blue Star sewer cleaning nozzles are manufactured with optimized 3D hydromechanics by Intersewer, located in Germany. Water coming from the pressurized sewer hose is first divided by a conically shaped piece and turned around in the nozzle chamber, then guided directly to the stainless steel nozzle inserts via five-axis computer numerical control precision. The nozzles are made in one piece, reducing the chance of failure under pressure for greater safety and performance. Utilizing case-hardened steel, stainless steel and ceramic inserts, the nozzles can also be used with recycled water. 877-864-9394; www.sewerproshop.com

9 // SHAMROCK NOZZLES BY TRITON HYDROTOOLS SHAMROCK-ET

The Shamrock-et from Shamrock Nozzles by Triton HydroTools is a heavy-duty penetrating nozzle that is free of the complexity and moving parts that typically require frequent maintenance. It is engineered to efficiently penetrate hair and root masses, hard grease deposits, soap, sand and gravel. The design is ideal for mainline work. Its missile shape and smooth exterior quickly penetrates blockages. Three extremely powerful rear jets excel at removing the broken up material from the work area and ultimately from the line. This is a powerful nozzle that can break up an obstruction and create a path for large flushing nozzles if needed. It is available for 3/4-, 1-, and 1 1/4-inch hoses and can clean pipelines from 6 up to 24 inches. It is fitted with replaceable carbide inserts for long service life. Internal laminar flow improvement provides for greater impact and effectiveness of each individual jet. 800-633-7696; www.shamrocktools.com

10 // USB-USA GATOR AND MINI GATOR

High-performance Gator and Mini Gator nozzles from USB-USA cut and remove roots, grease, blockages and scale in various pipes ranging from 2 to 20 inches. Encased in a compact stainless steel body, the strong reinforced internal design rotates the head. 3D fluid mechanics in the head smoothly direct all the incoming high-pressure water to the four rotating jets in the rear of the head and one in front. These rotating jets create a powerful 360-degree all-around complete cleaning of the pipe, flushing and removing debris in fewer passes. The offset front jet eliminates blockages easily and effectively. The Gator is capable of being used on hose between 3/4 and 1 1/4 inches, while the Mini Gator nozzle can be used on 3/8- to 1/2-inch hose. Also available are case kits that include an additional skid to centralize the nozzle in larger pipe. 844-285-5770; www.usb-usa.com



11 // OATEY HERCULES PT-BIO1

Hercules PT-BIO1 from Oatey eliminates drainline buildup and controls odors with grease and waste-digesting bacteria and biodegradable grease and soil removers. It is a concentrated liquid blend of fast-acting grease, waste-digesting bacteria, and safe, biodegradable grease and soil removers. It continues its grease-digesting action in grease traps and sewer lines and improves the performance of cesspools, septic tanks and drainfields. The waste-digesting bacteria biodegrade greasy matter en route, preventing redeposition and problems such as interior corrosion and sewer gas formation. This product contains no acids, caustics, solvents or other harsh chemicals. It is safe for use in all types of drainage plumbing and is USDA authorized for use in food processing plants. It is offered in four variations of sizes, ranging from 32 ounces to 15 gallons. 800-321-9532; www.oatey.com

>> HOSE REELS

12 // COXREELS HIGH PRESSURE 1125 SERIES

COXREELS High Pressure 1125 Series hand-crank hose reels include a sturdy one-piece all-welded A-frame base construction for superior reel structure, a low-profile outlet riser and open drum slot design that provides a noncrimping, flat smooth hose wrap, and permanently lubricated self-aligning pillow block bearings for trouble-free and smooth rotation. The highpressure swivel is machined from high-strength steel and nickel plated for corrosion resistance. This ball bearing swivel features maximum flow and enhanced load-bearing capabilities. Provided with AFLAS seals, this reel holds a pressure up to 5,000 psi. 800-269-7335; www.coxreels.com











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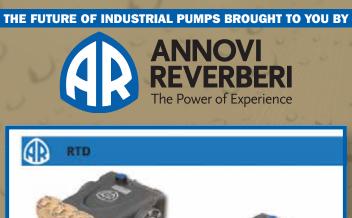
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Industrial



RTD 1000 RPM	N VERSION	SOLID	SHAFT	35м	м				
Model	Max GPM	Max L/Min	Max PSI	Max Bar	Power EBHP	BORE DIA MM	STROKE MM	CRANKSHAFT ID STAMP	WEIGHT LBS.
RTD80-300	21.0	79.5	4350	300	65.0	32	42	4	128
RTD100-200	25.0	94.6	2900	200	49.8	32	42	3	128
RTD100-200SX	25.0	94.6	2900	200	49.8	32	42	3	128
RTD130-160	32.0	121.1	2300	160	50.5	36	42	3	128
RTD130-200H	34.5	115.0	2900	200	68.0	36	42	3	128
RTD160-130	40.0	151.4	1850	130	50.8	40	42	3	128

SX - 180° Rotated Shaft Configuration



Model	Max GPM	Max L/Min	Max PSI	Max Bar	Power EBHP	BORE DIA MM	STROKE MM	CRANKSHAFT ID STAMP	WEIGHT
RTX30	8.0	30.3	4350	300	23.9	20	23	3	72
RTX50	12.0	45.4	4350	300	35.8	25	23	3	72
RTX60	14.0	53.0	4350	300	41.8	25	28	1	72
RTX70	17.0	64.4	3000	200	33.8	30	23	3	72
RTX85	21.0	85.0	2200	200	31.7	30	28	1	72
RTX-HW85.150N*	21.0	85.0	2200	200	31.7	36	23	1	72
RTX100	24.0	90.8	1800	124	29.8	36	23	3	72
RTX150	39.6	150	1450	100	36.2	40	28	1	72

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763-398-2008

For Information **Contact**

Thom Calvin (763) 398-7564 thomasc@arnorthamerica.com

Randy Rowan randyr@arnorthamerica.com

13 // HANNAY REELS 6200 POWER REWIND REEL

The 6200 Power Rewind Reel from Hannay Reels is designed for rigorous waterjetting and blasting applications. With heavy-duty steel construction, strong spool, sturdy frame and hydraulic motor, it offers hose expansion control for I.D. hose widths between 3/4- and 1-inch. Up to 500 feet of hose is supported at 3,000 psi, making it suitable for large jobs. The "A" assembly roller on the front of the frame allows for proper storage and easy dispensing on truck or trailer mounts. Optional upgrades include 5,000 psi working pressure, roller assembly, direct drive hydraulic motor rewind and a hose package, allowing for a wide range of customization. 518-797-3791; www.hannay.com

>> PORTABLE JETTER

14 // ELECTRIC EEL EEL-JET EJ3000

The Eel-Jet EJ3000 from Electric Eel can clean 2- to 8-inch-diameter lines up to 300 feet. It offers 3,000 psi at 4.7 gpm and a 13 hp overhead valve engine for smooth, quiet running and dependable operation with electric start available. It has a 2-1 gear reduced triplex pump with pulsation for longer life, a 300-foot-capacity hose reel, a heat shield to protect the hose and convenient nozzle storage on the unit. Its steel nozzles penetrate and clean tough clog problems from drainpipe walls with a variety of spray angles. Throttle-back control automatically adjusts engine speed. It comes with a low-tone muffler for quiet operation and 12-inch pneumatic tires on a rugged steel base for easy maneuverability. 800-833-1212; www.electriceel.com

>>> PUSH TV CAMERA SYSTEMS

15 // CPI PRODUCTS URS1

The URS1 roller skid from CPI Products protects a wide variety of push cameras and enables them to safely go further down the pipe. A durable plastic enclosure around the camera body with wheels enables the cameras to move smoothly down the pipe, around corners and seams from 6- to 12-inch pipes. It has movable arms that expand and contract to center the camera and jump over debris, seams and negotiate elbows and maneuver around bends. A waterproof LED light kit is available to improve the camera image, and a large wheel kit enables it to be centered in pipes up to 14 inches in diameter. Cameras up to 2 inches fit inside, and for larger cameras the Endzo adapter can handle camera heads up to 2.5 inches. 413-443-0925; www.cplasproducts.com

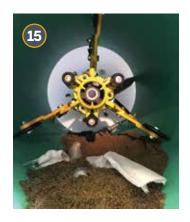
16 // CUES FLEXIPROBE C540C

The **flexiprobe** C540c portable pipeline inspection system from CUES simplifies operations by automatically creating a survey report, allowing you to concentrate on your inspection tasks. Share your reports quickly and easily via email or the Dropbox file sharing service. Systems consist of six reel configurations with two different cameras to choose from rated for withstanding water pressure of approximately 160 psi or over 300 feet underwater. Each system serves unique applications and a majority of inspection needs within the sewer industry today, from 1 1/2- up to 12-inch pipe. The system is managed by a powerful and intuitive controller with a quick boot-up, an intuitive user interface and a high-definition 10.1-inch TFT display. 800-327-7791; www.cuesinc.com











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17 // ENVIROSIGHT JETSCAN

Envirosight's Jetscan wireless, HD video nozzle system streams video footage straight to a tablet post-cleaning. This footage can be offloaded wirelessly or via a USB connection. Using it means operators don't have to clean blindly, and can document conclusively that a line has been adequately cleaned. It provides an inexpensive solution to assess pipe condition and cleaning success, eliminating repeated callouts and wasted resources. This video nozzle system includes features for ease of use and increased efficiency: tool-free sleds of varying sizes for simple deployment in a variety of lines, wireless charging and an app-based tablet interface making it easy to view, annotate and share footage. 866-927-5634; www.envirosight.com



The Gvision V7 from EPL Solutions is a ruggedized elite camera system that can be purchased for mainline use with 200, 300 or 400 feet of stiff yet flexible pushrod or a 150-foot mini-camera. Instantly capture video recordings and snapshots with the press of a button and access them anytime within the internal storage. The tech will never have to wonder where a video was taken as geolocation information is automatically attached and displayed on recordings. Add text overlay using the camera reel or a USB keyboard. Copy recordings and snapshots on two USB flash drives at once, or share them using the Gvision app. The app allows the user to remotely control, preview and download video inspections for easy sharing. Users can capture every detail with the color camera head clearly displayed on a 10.4-inch TruView LCD screen. Add an internal battery for up to six hours of runtime. 714-453-9760; www.epls-usa.com

19 // FIBERSCOPE.NET BY MEDIT VIPER PT

The VIPER PT pipe camera from Fiberscope.net by MEDIT offers a fully portable, allin-one design making it easy to transport and set up, allowing users to get to work quickly and without any hassle. The miniature pan-and-tilt camera head measures only 1.1 inch in diameter, providing a comprehensive view of the interior of the pipe. The camera features an HD video sensor, which delivers crystal-clear footage. The system comes with a 98-foot insertion push cable with a pre-attached 512 Hz sonde, making it easy to locate and track the camera head as it moves through the pipe. The control unit features a high-resolution, daylightreadable display. Captured data allows users to refer back to the footage at a later time. Adding text notes also makes it easy to keep track of important details and observations during the inspection. 877-613-2210; www.fiberscope.net

20 // MYTANA MS11-NG2

MyTana's versatile MS11-NG2 inspection system inspects 3- to 6-inch lines with a selfleveling camera head. Swap in a smaller head included with the optional MS11+ Combo Kit to inspect 1.5- to 2-inch lines. Each head has a 512 Hz transmitter built in. A high-clarity 6.4-inch daylight-readable monitor and all the controls are integrated on the sturdy reel frame for graband-go convenience; helpful when access points are scattered or hard to reach. Save footage to internal or removable drives, or stream video wirelessly to a mobile device and add voiceover using the built-in microphone. The durable pushrod is available in 150- or 200-foot lengths and can be replaced in your facility. 800-328-8170; www.mytana.com

















21 // RATECH ELECTRONICS PLUMBER'S HELPER JR.

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

22 // SPARTAN TOOL TRAVELER 3.0

The Traveler 3.0 is the next generation of Spartan Tool's all-in-one sewer inspection system, upgraded for tough customers. It is the same compact, portable size as before but includes completely rebuilt and upgraded interior components. It offers a stronger, more durable pushrod with a removable reel, allowing you to swap reels in the field quickly and easily. An upgraded camera head with high-intensity LEDs comes standard, but a line of easily interchangeable, customizable camera heads is offered for flexibility. The upgraded interior electronic components are built to withstand harsh environments and deliver better resolution and accuracy. 800-435-3866; www.spartantool.com

23 // SUBSITE ELECTRONICS PUSH CAMERA

When a transporter isn't an option because of pipe size or limited access, the Subsite Electronics Push Camera allows operators to complete inspections in the most challenging conditions. Ideal for pipes from 1.5 to 12 inches, it uses single conductor technology with a rigid 1/4-inch fiber pushrod covered with a durable Hytrel jacketing that allows operators to inspect up to 500 feet down the line. Additionally, the 1/4-inch-diameter single conductor cable provides added strength without weight concerns, allowing operators to complete significantly longer inspections without the cable getting twisted or warped. The 1545 camera with an inline 512 Hz beacon allows the operator to easily locate damage and blockage in the pipe. The camera is controlled by a 1575 controller, which features a rugged, durable and reliable enclosure, enabling operators to inspect pipe in the toughest conditions. 800-846-2713; www.subsite.com

24 // TROJAN WORLDWIDE VISIONHD

The VisionHD 1080P camera system from TROJAN WORLDWIDE is a reliable and easyto-operate system designed for use in 1.5- to 4-inch lines. The all-in-one enclosed case features a 1-inch high-definition 1080p self-leveling waterproof color camera head with adjustable LED lights and a built-in 512 Hz sonde transmitter for locating. The system has 100 feet of durable pushrod and a built-in foot counter. The display module has a 10-inch full HD LCD with DVR and is capable of recording to an SD card or USB flash drive for up to 6 hours on a full charge. Other features include a keyboard for text writing and attachable microphone for voice recording. Accessories include headphones with mic, two centering skids, charging cord and USB adapter. 800-395-4902; www.trojanworldwide.com

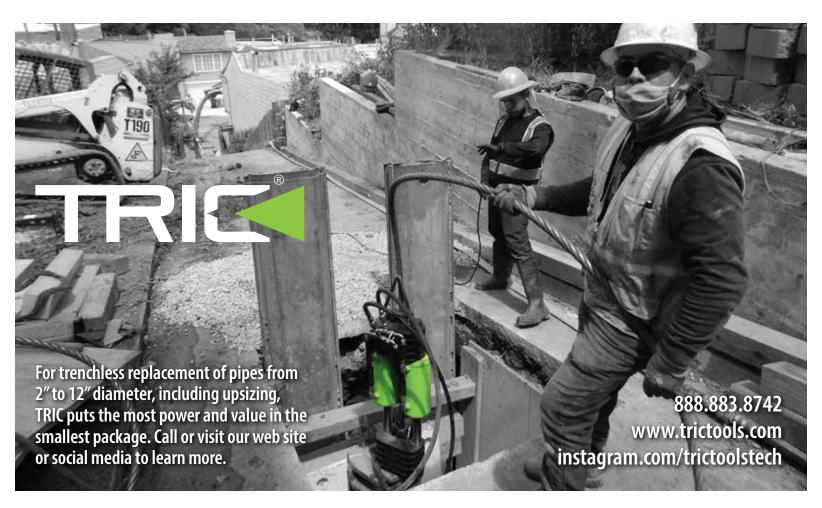








C O N T | N U E D >>





25 // VIVAX-METROTECH VCAMMX-2

The vCamMX-2 from Vivax-Metrotech is a portable all-in-one camera to inspect pipes between 1 1/2 and 4 inches. The control module's 8-inch daylight-viewable LCD screen shows the distance of deployed pushrod as well as the current time and date. Recordings are made in MP4 video and pictures in JPEG format directly to a USB thumb drive, then instantly backed up to an SD card. The internal microphone allows audio commentary over recorded video. The pushrod is traceable with the use of an external locator transmitter and is available in 100 or 150 feet. The 512 Hz frequency sonde is standard equipment. It comes with two interchangeable camera heads. The smaller D18-MX camera is fixed position and 0.70 inch in diameter, and the D26-MX is selfleveling and 1 inch in diameter. 800-446-3392; www.vivax-metrotech.com

>>> TRUCK/TRAILER JETTERS

26 // AMERICAN JETTER DUAL PUMP SYSTEMS

American Jetter Dual Pump Systems allow the user to have high psi and gpm within the same engine/pump combination. Switch from one to two pumps with the turn of a lever. Want max psi? Use one pump. For max gpm, switch to two pumps at max psi up to the engine capability. Popular gpm/psi combinations are 10 gpm at 4,000 psi/20 gpm at 2,000 psi and 8 gpm at 5,000 psi/16 gpm at 2,800 psi. Consistent power comes from 38 hp Kohler EFI gasoline engines. The optional 1-mile open-range wireless remote option features engine start/stop, water on/off, and hose reel in/out. 866-944-3569; www.americanjetter.com

27 // CAM SPRAY RCJ SERIES

RCJ Series skid-mounted jetters from Cam Spray are offered in flows and pressures of 8 gpm at 3,500 psi and 7 gpm at 4,000 psi. A three-plunger industrial pump with pulse is powered by a 688 cc Honda engine. Its 200 feet of jetter hose can be used to supply an optional 200DS4 portable reel cart with 200 feet of 3/8-inch jet hose. It comes with a 35-gallon buffer water tank with float control, powder-coated heavy tube frame, washdown gun and a fournozzle set. It easily mounts in the side door of a cargo van, on a truck bed or inside a service truck. 800-648-5011; www.camspray.com

28 // GAPVAX G7 JETTER

The G7 Jetter from GapVax is built on a heavy-duty, contractor-grade NATM-certified trailer. Several engine choices, including Cummins diesel, are certified and sized appropriately for the water pump combinations. The unit's hose reel is hydraulically powered with a directdrive gearbox and variable-speed control. The hose reel offers a 3-foot (curbside) articulation from center of bearing, 180-degree rotation and a capacity of 800 feet of 3/4-inch jetter hose. The polyethylene plastic water tank is available in 300, 500, 600 or 700 gallons. The water pump is center-fed for optimum performance. The controller is interlocked with safety features that will show low fuel levels and low water, and is capable of a complete engine shutdown in an emergency. 888-442-7829; www.gapvax.com



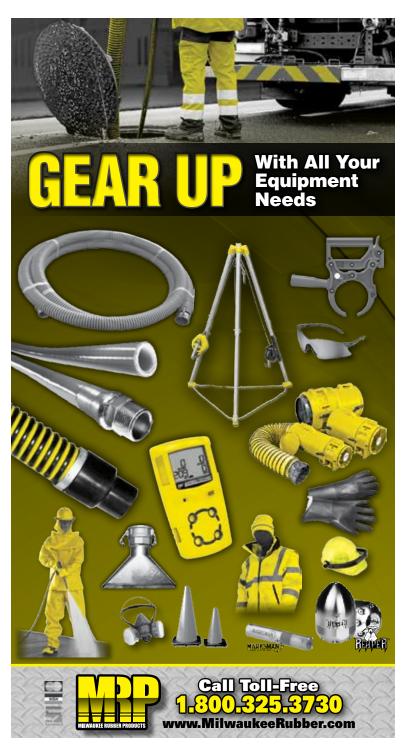














29 // HOTJET USA TURBO DIESEL TRAILER JETTER

HotJet USA is offering a turbo diesel-powered trailer jetter powered by Yanmar. It features 59 hp of power with true 20 gpm at 4,000 psi output in a compact, affordable package, offering 10% more power than regular 18 gpm units. Yanmar-powered units are Tier 4 compliant, are fuel-efficient and use an XL Radiator. The engines are water cooled for maximum efficiency and are easily maintained by a network of service centers nationwide. The jetters may be mounted on 5-by-12 to 5-by-16-foot decks with a choice of single or tandem axle. They are available in cold or hot/cold operation and will clean drainlines up to 24 inches. 800-624-8186; www.hotjetusa.com



30 // JETTERS NORTHWEST BRUTE JETTERS SKID-4009 AND SKID-3012

Brute Jetters SKID-4009 and SKID-3012 from JETTERS NORTHWEST provide trailersized power in a compact skid package that mounts to a truck, van or trailer. Available at either 9 gpm/4,000 psi (SKID-4009) or 12 gpm/3,000 psi (SKID-3012), they have the power to run root-cutting nozzles such as the Reaper, Warthog and Bulldog. Compact water-tank skids are available in 100-, 150- or 200-gallon sizes which easily couple to Brute Jetters. Fuel-injected engines provide choke-free electric-starting and work with an optional wireless remote control that controls jetting on/off and engine on/throttle/off. They also feature panel-mounted controls to allow handy operator access, a 12-volt power reel holding up to 400 feet of jetting hose (300 feet standard), adjustable pulsation control and four jetting nozzles. An optional wheel kit is available for increased portability. 877-901-1936; www.jettersnorthwest.com



31 // MONGOOSE JETTERS BY SEWER EQUIPMENT MODEL 184

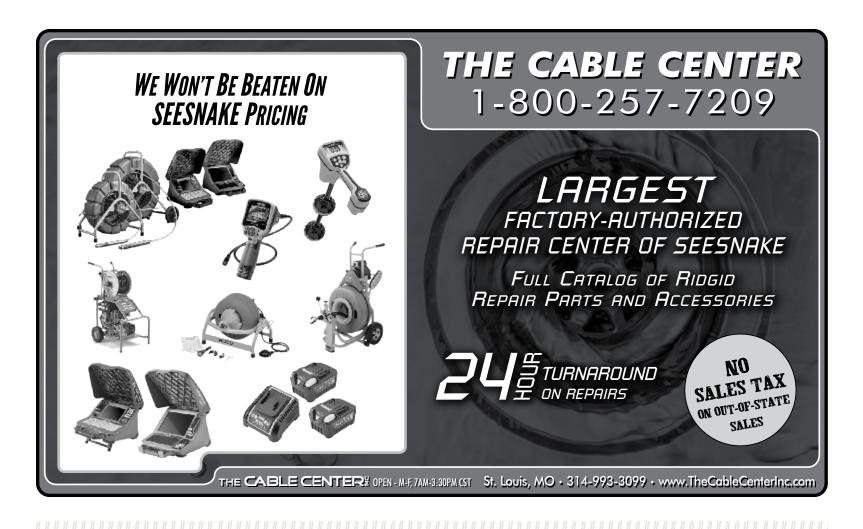
The Mongoose Jetters by Sewer Equipment Model 184 comes with a run-dry pump offering 18 gpm at 4,000 psi, a tubular steel frame, corrosion-resistant prepainted subassemblies, state-of-the-art controls, strong hose reel and high-quality gas engine. It is suitable for drain cleaning and sewer jetting, remote access locations, mainlines up to 12 inches in diameter, and commercial and industrial lines. The trailer unit comes with a water tank capacity of 300 gallons and standard hose reel capacity of 600 feet of 1/2-inch hose. The trailer setup consists of a 6,000-pound-rated single-axle trailer, and the addition of a wireless remote control system makes this equipment a true one-person operation. It is also available as a van pack or truckmounted unit. 815-835-5566; www.sewerequipment.com



32 // SUPER PRODUCTS SUPERJET

The SuperJet truck-mounted jetter from Super Products is used to blast debris to clear blockages and maintain sewer lines when vacuuming extraction is not required. It uses a strong and smooth single-piston water pump to create consistently high water pressure. Units come standard with rotationally molded polyethylene water tanks in a modular design to accommodate water capacities ranging from 1,080 to 3,240 gallons. They offer standard curbside and street-side fill. The hose reel has 1,000 feet of 1-inch-diameter sewer hose, 200-degree rotation and a digital monitor. This allows operators to work efficiently while positioned out of traffic and away from other hazards. The monitor displays a hose footage count, offers 20 saved settings for hose reel payout, and is designed with LED panel lights to enable readability in a variety of environments. 800-837-9711; www.superproducts.com C O N T | N U E D >>







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33 // US JETTING VAN PACK

The newest van pack from **US Jetting** is designed to give the customer a full-sized jetter in a compact format so there is room for cameras and more in the vehicle. Performance comes from the 49 hp Hatz diesel-powered run-dry USJ pump delivering pressure up to 4,000 psi and flows up to 18 gpm. A power pullout hydraulic reel allows the hose reel to extend beyond the vehicle and pivot left and right at the same time, affording access to the components for service in the future. The slimline 150-gallon water tank with fuel, antifreeze and hydraulic tanks incorporated makes this unit extremely compact. A 100-foot mini jet kit and a powered inlet hose reel are all part of the design. **800-538-8464**; www.usjetting.com

34 // VAC-CON VJ SERIES

The **VJ Series** of jetters from **Vac-Con** is designed to provide operators with an economical, portable and powerful system in two configurations. The VJ375 offers a 375-gallon water capacity on a single-axle trailer. The VJ750 boasts 750-gallon water capacity on a tandem-axle trailer. Standard features include Tier 4 diesel engine, cold-weather recirculation and air purge system, hydraulically driven hose reel and a reel-mounted, weatherproof electronic control panel. Units are available in multiple water pump pressure and flow configurations. Optional features include gas engine, wireless remote and an antifreeze tank system for cold-weather use. **904-284-4200**; **www.vac-con.com**



Vacall's AllJet truck-mounted jetter is an easy-to-operate, efficient sewer root maintenance machine. The hydraulically powered triplex plunger water pump is capable of 87 gpm at 2,000 psi with other power options available. The hose reel telescopes out 54 inches from a retracted position and swivels 200 degrees to properly direct the 600-foot jetting hose. It uses a single-engine PTO design and a 1,600-gallon UV-resistant polyethylene water tank. Operator-friendly features include four locking aluminum tool storage cabinets, a rear-view camera, roll-up doors and a washdown system with options including LED lighting packages, an extendable rear canopy, and a heating and insulation package inside the all-aluminum rear compartment. 800-382-8302; www.vacall.com c







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CASE STUDIES

RESIDENTIAL AND COMMERCIAL SEWER AND PIPE **MAINTENANCE**

// By Craig Mandli

MANUFACTURER COMES THROUGH WITH **EYE-CATCHING COMBINATION UNIT**



PROBLEM / Municipal utility contractor CC Steel of Fargo, North Dakota, sought a combination truck that both did the job and garnered attention for the company.

SOLUTION / **Vactor** helped customize CC Steel's newest combo unit by blacking out everything aesthetic on the truck. "The end product is awesome," says Mike Cebulla, president of CC Steel, about the customizations to the company's third Vactor unit. "We worked with Vactor, and they helped us understand the complexities of the build including the constraints, but they found a way. The Vactor team was willing to take that vision and make it a reality." Cebulla worked with equipment dealer Sanitation Products Inc. and the Vactor team to "black out everything." That level of detail and attention is something Cebulla noted his appreciation for.

RESULT / "We'd be hard pressed to ever go back to anything else," says Cebulla. "With our Vactor recycler we have triple the efficiency. Having those common parts is only going to help as we grow." 815-672-3171; www.vactor.com **c**





The July issue of Cleaner includes the Annual Buyer's Guide, an extensive list of manufacturers, dealers and distributors of equipment and technology used for sewer and drain cleaning equipment.

PRODUCT NEWS



PRODUCT SPOTLIGHT

ADVANCED TECHNOLOGY TAKES ON INSPECTION CHALLENGES

By Craiq Mandli

The more pipe footage you can inspect in a day, the better. That's why pipe inspection systems need to be efficient and easy to use. Envirosight recently unveiled the Verisight Ultra, the next generation of its pipe inspection push camera system that the company says sets a new standard for efficiency, flexibility and ease of use in lateral pipe inspections.

"The Verisight Ultra is wireless and among the advantages is that two people can be standing at the unit with tablets and both view the same thing, as you can view from more than one device at the same time," says Michael Putney, regional sales manager for Envirosight. "The operator also does not have to stand right at the reel when utilizing the system."

Designed for portability and affordability, the Verisight Ultra simplifies workflows while delivering exceptional image quality.

It includes a 1080p full HD touchscreen monitor, which records hidef video and photos to enable quick and accurate identification of blockages, defects and other issues that may compromise the functionality and safety of underground pipelines.

"To my knowledge, not many push cameras on the market have this feature," Putney says. "The tablet can also be detached. Mounted on the reel, the control box can be adjusted infinitely, which means



you don't have to pick up the entire reel and move it to achieve an optimal operating position or to eliminate sun glare."

Self-leveling pan-and-tilt advanced camera control options are also available. It also has a compact and lightweight design for easy maneuverability through tight spaces and uneven terrain. The system offers the ability to perform inspections standing up or on its side for added versatility on uneven ground. It offers the choice of 200 or 330 feet of "built for distance" cables.

"The Verisight Ultra is ideal for municipal and private or environmental contractors," Putney says. "This is not a plumber's camera for household use. It is made to push for distance in rugged environments, not for multiple bends. It also offers more protective and centering skids around the camera head versus a plumber's camera."

Putney says that while the camera is fresh to the market after a late January launch at the 2024 WWETT Show, early reviews are encouraging.

"We had many test trials with customers to get user feedback prior to launch," he says. "Their response, along with those at WWETT, has been very positive." 866-936-8476; www.envirosight.com

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1 // SUPERIOR SIGNAL SMOKE TESTING SYSTEMS **REDUCE WET-WEATHER PEAK FLOWS**

Superior Signal's smoke testing systems help reduce wet-weather SSOs and surface inflow. Superior's smoke candles, fluid and smoke blowers are designed to test sanitary sewers quickly, efficiently and economically. The smoke blowers can be used with smoke candles or fluid to detect common sources of surface inflow and other faults. Classic smoke candles provide highly visible smoke to find more faults at a longer distance. The Superior 3C Classic smoke candle produces a volume of 40,000 cubic feet of smoke in just three minutes. Join multiple W3C smoke candles to create larger volumes of smoke visible for a longer time. Superior's smoke fluid systems offer a liquid-based alternative for mainline sewer inspection and feature an insulated heating chamber with a stainless steel injector to maximize dry smoke output. Since 1961, Super Signal's cost-effective methods have found sources of leaks and odors. Superior's smoke products are made in the U.S., meet WEF and NASSCO standards and are widely used in tests to meet EPA, ASHRAE, OSHA and NFPA standards. www.superiorsignal.com/CLS; 732-251-0800

2 // MILWAUKEE TOOL BOLT SAFETY HELMETS

Milwaukee Tool delivers advanced slip, trip and fall protection on the job site with the new BOLT safety helmets with IMPACT ARMOR liner. Designed with RHEON technology, the IMPACT ARMOR liner delivers oblique impact protection and the safety helmet is a part of the BOLT system, allowing users to secure accessories simultaneously for efficiency on the job site. In addition to protection against top and side impacts, the helmets allow users to use multiple accessories at once. The construction safety helmets include a headlamp mount that works with most headlamps for easy, secure attachment and a BOLT marker clip that allows for easy access to pens and markers. The climbing-style helmet also has a comfortable, adjustable chin strap for better security, is ANSI Type-2 rated and is customizable with the ability to add a company logo in up to four locations on the helmet. 800-729-3878; www.milwaukeetool.com

3 // GENERAL PIPE CLEANERS JM-3055 WATER JETTER

Sporting a high flow rate without a holding tank, the JM-3055 from General Pipe Cleaners packs plenty of punch to clear grease, sludge, sand, ice and other stoppages. The muscular machine's 3,000 psi, 5.5 gpm pump unleashes high-pressure water streams that pulverize clogs and flush them away. On-demand Vibra-pulse technology helps the hose slide easily down long runs and around tight bends. Part of General's powerful Jet-Set range of electric, gas, and trailer water jetters, the rugged JM-3055 is excellent for use in restaurants, hotels, hospitals, factories, schools, sports arenas, care facilities, shopping centers and more. Easily maneuvered into position, the balanced JM-3055 sports a removable 300-foot-capacity hose reel mounted on a robust, tubular chassis with four, flat-free foam core tires and a wheel brake, 800-245-6200; www.drainbrain.com

PRODUCT **NEWS**

4 // BAM! BAD ASS MATS SAFETY MATS

Avoid costly damage to your job sites with BAM! Bad Ass Mats. The mats are made from fourseason, durable high-vis green HMWPE material with a built-in UV protector to guard against fading and cracking. 3/8-inch thick and rated at 160,000 pounds with pressure ratings of 373 pounds per square inch, and 53,700 pounds per square foot, they have a temperature rating of minus 103 degrees F to 258 degrees F. The 4-by-8-foot sheets weigh 56 pounds and come with eight large hand holes for easy handling, even with gloves. A dual-sided tread pattern provides safe traction for both equipment and pedestrians. Mats don't absorb moisture and chemicals and can be simply hosed off. 262-877-4700; www.bamgroundpro.com



5 // ELECTRIC EEL EELVISION ELITE INSPECTION CAMERA

Electric Eel's new EELvision Elite inspection camera for inspecting 3- to 10-inch-diameter lines features a 1.3-inch-diameter self-leveling color camera with vivid adjustable LED lights and a large 7-inch monitor for easy viewing. A sunshield allows for outdoor viewing and protects the monitor in transport. The EELvision Elite comes standard with additional features, including 200 feet of 1/2-inch-diameter premium push rod; an on-screen footage counter; continuous display odometer; one-touch recording to USB and screenshot capability; extended ergonomic handle to facilitate maneuverability and transport; heavy-duty metal frame and wheels; user-friendly control panel; quick start guide tutorial prompts; QR code for manual and support accessibility; built-in always-on sonde; dual power sources (AC and battery); and Makita battery port. It also accepts both Milwaukee and DEWALT batteries with a provided adapter. 800-833-1212; www.electriceel.com



6 // ARIES INDUSTRIES VOYAGER MAINLINE INSPECTION SYSTEM

Aries Industries has added flexibility and efficiency to its Voyager mainline inspection system with the introduction of a completely mobile version. The unit easily navigates pipe conditions to capture detailed, high-definition video of relined mainlines 6 to 48 inches and up. The compact, portable system, equipped with an 800-foot cable, can easily be carried in a pickup truck (fits under a tonneau cover) or mounted in a truck, van, trailer or Aries TrailBlazer. The Mobile Voyager HD System is digital CANbus enabled for instantaneous camera and tractor response. Inspections are viewed on a 15-inch daylight readable touchscreen with thumbstick controls. An in-the-pipe WiperCam lens cleaning system maximizes inspection time versus downtime. A compact, full-HD 1080p pan and tilt video camera, with 120x zoom, captures every pipe detail around the crawler. Optional dual camera lasers are available to precisely measure cracks. 800-234-7205; www.ariesindustries.com c



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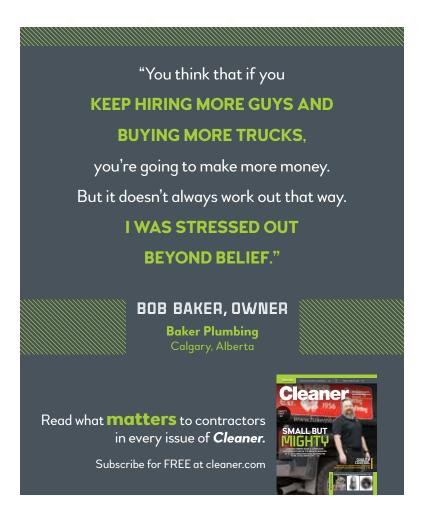
INDUSTRY NEWS

Aries Industries expands with addition of new dealer in Arizona

Aries Industries has strengthened its Southwestern U.S. market reach by adding Phoenix-based Short Equipment to its dealer network. Short Equipment offers a broad range of top-brand municipal service vehicles. Its lineup includes sewer cleaners, hydroexcavators, truck jetters, street sweepers and refuse collection trucks. As a factoryauthorized warranty and repair center, Short Equipment services vehicles from its many product lines and provides preventive maintenance training. The Aries Industries dealer network has added over 15 dealers in North America since 2019.

Summit Truck Equipment acquires Rival Hydrovac

Summit Truck Equipment has acquired Rival Hydrovac and G Force Signs and Graphics effective Feb 1. The location is the same at 7690 Edgar Industrial Court, Red Deer, Alberta, with the same staff. The company will continue to be in full operation during the transition. c

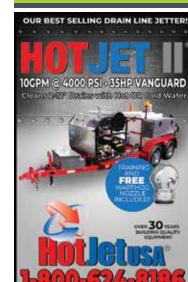








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