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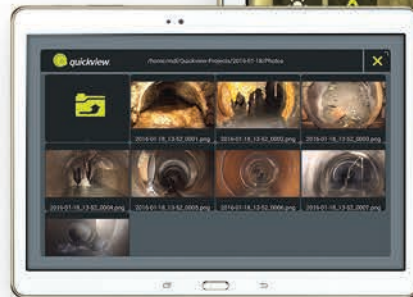
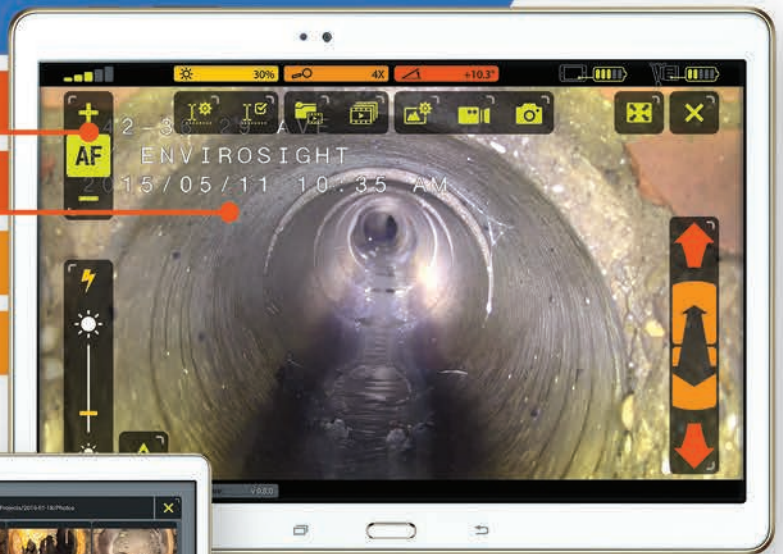
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ON THE COVER

Bob Oates, owner of Bob Oates Sewer Rooter in Seattle, has spent most of his life cleaning sewers and drains. He started working for his dad at age 12 and opened his first business 10 years later in 1982. (Photography by Alex Garland)



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Luke Laggis
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We All Have Stories to Tell

Each chapter in life and business gets us a little bit closer to who and what we want to be

By Luke Laggis

We all have distinct chapters in our lives — school, careers, relationships, different cities, different goals and dreams — with a table of contents outlining who we are.

Some chapters span years while others cover small increments of time more significant to who we are than any number of days a calendar could hold. When you're living it, you don't always know what decisions or stories will jump off the page. Sometimes the things that feel so significant dissolve under the weight of time. Sometimes the things we take for granted, the mundane, seemingly insignificant pieces of our day-to-day lives are what tell the real story. Any moment could be the moment that changes your entire future.

Bob Oates knows a thing or two about turning the page. The owner of Bob Oates Sewer Rooter in Seattle, featured in this issue of *Cleaner*, has owned four drain cleaning businesses, each a unique chapter in his professional story.

Oates began working part time for his father's sewer cleaning business in Queens, New York, at age 12. His sewer and drain cleaning career began in earnest when he dropped out of high school at age 16 to work full time with his father. In 1982, at age 22, he started his own company.

By 1989, Oates was running three trucks. But he was also growing weary of New York, so he did some research and decided to move to Seattle. The decision was partially spurred by the region's rainy climate, which he felt would ensure steady drain cleaning work.

Oates first worked at another company for about six months to get the lay of the land before launching Super Rooter on his own. But about seven years later a divorce forced him to sell the business. That prompted him to start yet another company called Alligator Sewer Service, with a large, readily recognizable alligator as the company mascot.

That was the beginning of another chapter, and a real turning point in the story. A local plumber who wanted to establish a foothold in the local drain cleaning market started courting Oates to sell the Alligator name. Eventually, he convinced Oates to sell him the business and stay on board under a four-year contract to develop a drain cleaning division. As you'll read in the profile, it proved to be one of the most important chapters in Oates' professional life.

We all have our own stories, and each is made of many chapters. Some are happy and filled with success, others highlight life's struggles. But no great story is made of a single chapter, and no single chapter should define your life or business. One leads to the next and you craft the story you want to tell — the life and the business you want.

We're about to cross another year off the calendar and begin anew. I hope it's a chapter that stands out for all of you.

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



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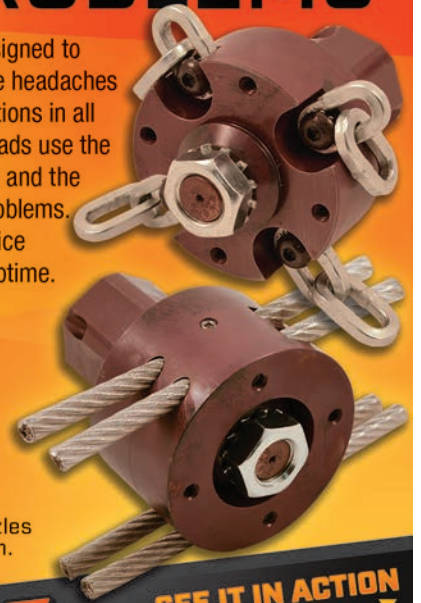
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Portable Pumping Power

ProVac units' mobility provides foundation for California company's grease trap service

By Ken Wysocky

Any contractor who cleans restaurant grease traps and interceptors knows there's rarely a convenient time for customers. While municipalities typically require regular grease trap cleanings, restaurant owners don't want to deal with the disruptions — a hose snaking through a kitchen, the odor, the noise and so forth.

But SRC Pumping in Sacramento, California, takes the pain away with a small fleet of Conde ProVac portable pumpout units made by Westmoor Ltd. The company's six ProVac units are essentially miniature vacuum trucks that can easily maneuver through cramped kitchen areas and work quickly and quietly, with minimal business disruption.

"Before we invested in the ProVacs, we used a lot of hoses and accessibility could be a problem, especially in high-rise office buildings with cafeterias on upper floors," says General Manager Jim Walsh. "But with the ProVacs, we roll them right in. They're small enough to fit through a standard doorway. Then we pump out the trap and roll them back outside.

"Then we use the pump on one of our vac trucks to evacuate the ProVacs," he continues. "We can do multiple jobs in one day. ProVacs are the best."

SRC Pumping bought its first ProVac about 20 years ago after seeing the machine at the Pumper and Cleaner Environmental Expo International (now called the Water & Wastewater Equipment, Treatment & Transport Show). Management was so impressed, they kept on adding ProVacs as the company built up its customer base. The business — which was founded in 1913 and has been family owned for four generations — is part of SRC Companies. Other services include restaurant grease collection, rendering and recycling of animal byproducts, and production of animal protein meal. It serves more than 4,000 customers in northern and central California and northern Nevada.

To provide these services, the company also owns about 15 5,500-gallon vacuum trailer tankers made by Dragon Products and Galyean, outfitted with vacuum pumps made by Fruitland Manufacturing and National Vacuum Equipment. It also owns four Isuzu trucks equipped with 500- and 750-gallon

money
machines

OWNER: SRC Pumping, Sacramento, California

MACHINE: Conde ProVac portable pumpout station from Westmoor Ltd.

FUNCTION: Cleaning grease traps

WEBSITE: www.srccompanies.com

Ray Castro, a technician with California-based SRC Pumping, wheels a Conde ProVac portable pumpout unit into a job. The company uses the machines for pumping grease traps in cramped kitchen areas.



Workmate vacuum tanks (FMI Truck) and Conde (Westmoor) pumps.

Made from lightweight aluminum, the 52-gallon-capacity ProVac is 24 inches wide, a little more than 4 feet long and 45 inches tall. It weighs about 250 pounds. It's powered by a 1 1/2 hp, 115-volt/13.4-amp electric motor and a Conde pump produces vacuum power of 35 cfm. It can pump up to 124 gpm at 5 psi of pressure, and it switches from vacuum to pressure mode for off-loading with the flip of a switch. Other features include a built-in charcoal exhaust deodorizer that minimizes odors; an automatic lubrication system; a 20-foot retractable electric cord; an electronic automatic float shut-off; and a 2-inch-diameter, 10-foot-long Plastiflex suction hose.


"You can plug it into a normal 110-volt electric outlet," Walsh explains, noting that the motor isn't so over-powered that it flips circuit breakers at restaurants. "And it's very quick and quiet. We also like the reverse-pressure feature. A lot of times, the material we're vacuuming up is coagulated. So if we can reverse (the pump), it breaks the material up a bit."

One of the ProVac's biggest assets is its mobility, which allows the company to perform more service calls a year and, in turn, post more billable hours. Some of the grocery stores that SRC Pumping serves, for instance, might have several grease traps per store. So instead of inefficiently hauling hoses around and potentially repositioning a vacuum truck for each trap, an employee can clean two or three traps with the ProVac, depending on the traps' capacities.

"We also clean out grease traps at about 30 concession stands at Raley Field," he adds. (The stadium is home to the Sacramento River Cats, a Pacific Coast League baseball team that's a Triple-A affiliate of the San Francisco Giants.) "It's next to impossible to clean them with a vacuum truck because of limited accessibility, so we have to use some kind of portable device. And the ProVacs are a perfect solution to the problem."

Walsh also praises the units' satin-aluminum finish, which he says enhances his company's professional image. "When we arrive in the back of a kitchen, it's a professional-looking machine, not like a cheap shop vac or some homemade machine. That's important because (restaurant) operators don't like this kind of work — there's never an ideal time to clean at restaurants. So it helps if we look like a professional outfit while doing it."

The ProVacs' ability to pump out grease traps quickly and quietly also has enabled SRC Pumping to establish a profitable market niche. In addition, because the company also cleans grease interceptors, the ProVacs enable one-stop shopping for customers that require both interceptor and grease trap service, Walsh says.

"If we do 1,200 services a month, about a third of them rely on the ProVacs," he points out. "Is it a good revenue generator? Absolutely. It allows us to do work we otherwise couldn't do. Without a doubt, using a ProVac is the only way to do this kind of work. If you're in a business like ours, you have to have one." 



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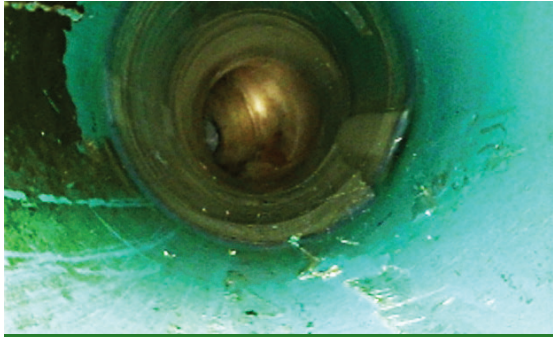
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QUICK FIX

Ohio Contractor Finds Cost-Effective Solution for Leaky Pipe Bend

When an Etna, Ohio, water and sewer district had a crack causing a significant leak in a piece of 6-inch PVC pipe with a 45-degree bend, a repair was needed. But because the pipe was beneath a heavily traveled and narrow thoroughfare flanked by private residences, the utility sought a solution other than a dig-and-replace method. A new liner system designed specifically for repairing small pipe elbows did the trick.

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BETTER BRANDING

Vehicle Graphics Build Company Identity

When Mark Treglia started Straight Up Plumbing in 2014 in Nevada's Reno-Sparks metro area, he knew breaking into a competitive marketplace would require a fresh, bold branding statement. He did just that by hiring a marketing firm that came up with an eye-catching vinyl-wrap design for his trucks: a retro-looking airplane that, upon closer examination, is actually a water faucet with hot and cold handles serving as the propellers. [>>cleaner.com/featured](http://cleaner.com/featured)

DIVERSE ARSENAL

California Contractor Equipped to Handle Jetting Jobs Big and Small

With everything from trailer-mounted units to small wheeled jetters, there isn't a drain cleaning job Ventura, California-based Hansen Plumbing & Mechanical isn't willing to tackle. The company was featured in the magazine earlier this year, and in this online-only story owner Cary Hansen explains how the array of jetting equipment helps him provide a one-stop shop that customers appreciate. [>>cleaner.com/featured](http://cleaner.com/featured)



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BUSINESS EDUCATION

SEATTLE DRAIN CLEANER
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AND BUILDS A NEW
COMPANY WITH BETTER
CUSTOMER SERVICE AND
HIGHER PROFITABILITY



Bob Oates Sewer Rooter technician Josh Lemrey works at the receiving pit on a residential pipe bursting job where they were replacing a concrete sewer lateral.



Technicians Casey Yates (left) and Kyle Ward wet out a Nu Flow liner for the rehabilitation of a concrete sewer lateral.



Justin Daniels (left) and Kyle Ward measure a section of Nu Flow pipe liner for a lateral lining job.

Bob Oates can divide his four decades in drain cleaning into two distinct chapters. One covers his days as a competent but somewhat narrow-minded contractor with an outdated business model. The second chronicles his emergence as a businessman with clearly defined goals for boosting revenue and better serving customers.

How Oates, the owner of Bob Oates Sewer Rooter in Seattle, moved from one chapter to the next underscores the difference between owning a business and just owning a job. It also drives home the importance of offering customers a diverse set of services and long-term solutions to drainline problems, which subsequently requires investing in top-notch equipment and advanced technologies.

Furthermore, Oates' story also shows the value of hiring people who know more about specific areas of business and, of course, learning from mistakes — and Oates candidly admits he's made his share.

"Along the way, I completely reinvented myself," says Oates, 56. "I basically earned an MBA degree in business through the school of hard knocks and from reading. I'm totally self-taught when it comes to business and management. I read a lot and learn from my mistakes."

ROOTS IN DRAIN CLEANING

Oates is a second-generation, old-school sewer cleaner whose father founded Dial A Sewerman in Queens, New York. His odyssey began when

profile

BOB OATES SEWER ROOTER LLC

SEATTLE, WASHINGTON

FOUNDED: 2006


OWNER: Bob Oates

EMPLOYEES: 35

SPECIALTIES: Sewer and drain cleaning

SERVICE AREA: Greater Seattle area

WEBSITE: www.boboates.com



he started working for his father at around age 12. When he turned 16, Oates dropped out of high school to work full time with his father.

In 1982, when Oates was 22 years old, he started his own company, Cleancut Sewer. Competing with his father was not an issue. "My dad supported me completely and still served as my mentor," Oates says. "The only thing he asked is that I not specifically target his accounts."

By 1989, Oates was running three trucks. But he was also growing weary of New York, so he did some research and decided to move to Seattle. The decision was partially spurred by the region's rainy climate, which he felt would ensure steady drain cleaning work.

Oates first worked at another company for about six months to get the lay of the land before launching Super Rooter on his own. To build a customer base, the resourceful Oates developed a mass mailing list by going to a public library and hand copying the names of city property owners listed on the city's tax assessor records.



The team at Bob Oates Sewer Rooter in Seattle.

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"I targeted people with more than one property so I could get more bang for each stamp," he says. He mailed more than 5,000 marketing letters during his first month in business; he personally signed each letter and hand addressed the envelopes. The self-developed marketing campaign generated about a 1.5 percent response rate, a decent return for direct mail.

But about seven years later, Oates got divorced and sold the business. That prompted him to start yet another business called Alligator Sewer Service, with a large, readily recognizable alligator as the company mascot. "It was the company I always wanted to start," he explains. "I thought Alligator Sewer was a great name because alligators sometimes live in sewers and it starts with A, which would stand out in a phone book. It was a great way to differentiate me from other drain cleaners."

"OVERALL, I WAS STUBBORNLY MISSING OUT ON OPPORTUNITIES BY THINKING THAT TECHNOLOGY WAS UNNECESSARY AND BELIEVING THAT OTHER CONTRACTORS WERE JUST RIPPING PEOPLE OFF."

Bob Oates

A TWIST OF FATE

Here's where things got interesting. A local plumber who loved the name Alligator Sewer and wanted to establish a foothold in the local drain cleaning market started courting Oates. Eventually, he convinced Oates to sell Alligator Sewer to him, then stay on board under a four-year contract to develop a drain cleaning division. It proved to be a life-changing event.

"I learned so much from working there," Oates says. "When you're a one-man operation, you stick to doing things the same way. You're like a pond with no freshwater coming in — eventually it gets polluted and dries up. Working there opened my brain to new ideas and technologies, things such as water jetters and inspection cameras."

Oates had an even bigger epiphany when he saw the value of offering long-term solutions to customers with drain-line problems, as opposed to unclogging drains for a couple hundred dollars, then quickly moving on to the next job — "hitting and running," as he calls it. The long-term solutions were not only exponentially more profitable, they also led to greater customer satisfaction.



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"I was used to cleaning lines and then thinking, 'See you next year,'" he recalls. "But I wasn't providing good service by hitting and running. This job taught me to take my time, put a camera down a line to see if it required more cleaning and offer long-term solutions.

"MY FATHER ALWAYS SAID YOU SHOULD HIRE PEOPLE WHO ARE SMARTER THAN YOU, THEN MAKE THEM HAPPY TO WORK FOR YOU."

Bob Oates

"And instead of making \$100 or \$200 on drain calls, I saw this company turn those kinds of calls into anywhere from \$5,000 to \$40,000 repairs," he adds. Those high costs reflect the fact that Seattle residents are responsible for sewer lateral repairs from their homes all the way out to the mainlines, which can sit up to 30 feet deep. A good rule-of-thumb estimate was \$1,000 for every foot of excavation required, plus the residents have to pay for any street repairs, too. It adds up in a hurry."

BACK IN CHARGE

In June 2006, Oates' four-year contract expired and he opted to be his own boss again. His contract did not contain a no-compete clause, so Oates set off on his own once again, equipped with a brand-new Chevrolet cargo van, a Spartan Tool drain cleaning machine and a portable jetter built by JETTERS NORTHWEST. But this time, he was a man with a plan.



"I hit the ground running with all this knowledge," he says. "Before, I actually believed people wanted to see me every year — thought that they'd rather pay me \$100 or \$200 to clean their lines annually. I had no conception that people would pay, say, \$5,000 for a repair. I was against using cameras, too. Overall, I was stubbornly missing out on opportunities by thinking that

IMAGE IS EVERYTHING

As Bob Oates explains his drain cleaning and plumbing firm's integrated marketing campaign, it's hard to determine what's more impressive: the number of different platforms and venues he uses or the fact that the high-school dropout is a self-taught marketer.

But one thing is certain: In an age where brand identity is critical, Bob Oates Sewer Rooter in Seattle stands out in the crowd. A popular mascot called Poopy the Plunger. Sparkling clean, bright-red service trucks instead of more common white vehicles. A social media presence on platforms such as Facebook, Twitter and Instagram. Billboards and municipal bus signage. Uniformed employees. No matter what the medium, Oates uses marketing as the ultimate competitive differentiator.

The centerpiece of the marketing efforts is Poopy, a skinny, goofy-looking mascot that appears on all the company's service vehicles, as well as its website and any collateral marketing pieces, invoices and the like. Oates dreamed up the character, based on what he thought the character Gilligan, from the 1960s television show *Gilligan's Island*, would look like if he was reincarnated as a plunger. (It was one of Oates' favorite shows while growing up.)

"I used to have an alligator as my mascot when I owned Alligator Sewer," Oates says, referring to another company he once ran in Seattle.

"People loved it. Mascots are good because pictures stick in people's minds. We get service calls all the time from people who see our trucks. It separates me from the competition." In fact, the character is so popular that Oates had T-shirts printed in response to customer requests. "We get calls from people around the country who ask for T-shirts," he notes. "We keep about 10 dozen of them in stock in all sizes, just in case customers ask for one."

Poopy even factors into the company's social media efforts. At the moment, for example, the company is randomly placing a 6-foot-tall cardboard cutout of Poopy at various intersections, then running a contest on Facebook to see who can find it. (Prizes vary from month to month and are usually gadgets related to plumbing.)

The internet and social media efforts generate a significant amount of annual revenue. To make sure he gets it right, Oates followed one of his tenets for success and hired someone smarter than him, in this case, Tashia Ortiz, a social media expert. "She's rockin' it for us," Oates says.

Oates concedes that when customers have a problem, they don't look for a bus advertisement or a billboard, or wait for one of the company's trucks to drive by to find out how to contact his company. "But when people have an emergency and they do go online to find a drain cleaner, my name pops out somewhere on that first page and a bell rings ... they make the connection, 'Oh, yeah, that's the company whose trucks I see around town.'"

<<LEFT: Shane Martin cleans out a sewer lateral with a Spartan cable machine.

BELOW: Dan Woolcott uses a McElroy pipe fusion machine to fuse sticks of HDPE pipe for a pipe bursting job.



technology was unnecessary and believing that other contractors were just ripping people off.”

The new game plan worked. Within six months, Oates started hiring a few employees. After a year, he stopped working in the field and instead focused on the overall business. During that first year, the company racked up \$800,000 in gross sales. The second year, that number ratcheted up to \$1.2 million. And every year since then, the company has averaged about 25 percent growth in gross revenue. “This year we’re on track to exceed \$5 million,” he points out. “Not bad for a high-school dropout.”

One key to growth was hiring specialists. “My father always said you should hire people who are smarter than you, then make them happy to work for you.”

For example, he hired a professional estimator because he realized he wasn’t good at bidding on jobs and also hired a general manager. The estimator sold so much work in the first six months that Oates was forced to hire eight employees. Now the company employs three full-time estimators as well as five two-man excavation crews that Oates says are busy every day.

GREAT EQUIPMENT, GREAT SERVICE

Another critical factor in the company’s growth was Oates’ insistence on investing in the best equipment possible. Good equipment increases

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productivity and is less prone to profit-killing breakdowns and, as such, contributes to good customer service. But reliable equipment also makes for happier employees, which can help minimize turnover.

“GOOD ENTREPRENEURS TAKE CHALLENGES AND RISKS. THEY BELIEVE IN THEMSELVES AND KNOW THAT WITH A GOAL — A VISION — AND HARD WORK, THERE’S NOTHING THEY CAN’T DO.”

Bob Oates

Today, about 50 percent of the company’s revenue comes from sewer repairs, roughly 25 percent from sewer and drain cleaning, and another 25 percent from plumbing services, which the company added in response to customer requests. To provide all those services, the company relies on a Harben trailer-mounted water jetter (16 gpm/4,000 psi) with a 300-gallon water tank; a trailer-mounted jetter (18 gpm/4,000 psi) made by JETTERS NORTHWEST with a 300-gallon water tank; and a truck-mounted jetter (12 gpm/3,000 psi), also made by JETTERS NORTHWEST with a 100-gallon water tank.

For the company’s four plumbers and five drain cleaning service technicians, the company runs five Chevrolet box trucks with bodies made by Heiser Body Co., three Chevrolet 3500 vans and one Dodge ProMaster van. Nearly every truck carries a portable wheeled jetter (5 gpm/4,000 psi) built by JETTERS NORTHWEST, a RIDGID SeeSnake pipeline inspection camera and a RIDGID SeekTech SR-20 pipeline locator. The company also owns a SeeSnake Mini camera, a SeeSnake microReel camera and seven NaviTrack Scout pipeline locators, all built by RIDGID. In addition, the business also owns about 10 Spartan 1065 drum drain cleaning machines, three Spartan 300 drain machines and 12 Spartan 700 hand-held snakes for sinks and tub drains.

The wide range of equipment enables the company to fulfill a critical part of Oates’ business plan: offer customers as many solutions to drainline problems as possible and become a well-diversified company that doesn’t have to give work — and revenue — away to subcontractors.

Pipe bursting and pipe lining are good examples of services that complemented drain cleaning. Because entering these markets required a considerable investment, Oates waited a couple years until he was established enough to obtain financing. Then he began investing in pipe bursting systems made by Spartan, TRIC Tools and Pipe Genie Manufacturing, along with a Nu Flow pipe lining system.

“I bought a pipe burster in 2007 and a year later I bought the pipe lining system,” he notes. “Those technologies gave us even more solutions for customers.”

CHANGE FOR THE BETTER

Looking back, Oates marvels at how much his business philosophy has changed over the past few decades. “When I started out, all I did was clean drains,” he says. “Now I manage people and money. It’s the hardest thing I’ve ever done because now I’m responsible for all my employees.



Josh Lemrey sets up a TRIC Tools pipe bursting machine to replace a concrete sewer line.

“Instead of working out in the field, I’m busy with employees coming to me with problems, questions and challenges,” he continues. “I also have to watch where the money goes — decide how much to spend on advertising, make sure we pay our taxes and so forth. But it’s all good ... I wouldn’t have it any other way.”

What advice would Oates offer to other one-man outfits with dreams of growing bigger? Without hesitation, he offers his three-pronged plan for success: Hire the best employees. Buy the best equipment. And offer customers permanent, long-term solutions to their drain problems.

“Good entrepreneurs take challenges and risks,” he adds. “They believe in themselves and know that with a goal — a vision — and hard work, there’s nothing they can’t do. You have to believe in your skills and work hard to do the best for your customers. And whatever you do, don’t be that guy who just puts a snake down a pipe.” **c**

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Erik Gunn is a magazine writer and editor in Racine, Wisconsin.

Get Ready for the Tax Man

Follow these end-of-year tips to keep your cleaning business in tip-top fiscal shape

By Erik Gunn

Another year is winding up, and of course with that comes tax time. With the annual chore of filing your personal and business income tax returns for 2016 just around the corner, it's a good time to take stock of your business practices to make sure you're on the right side of the line.

NOT MUCH CHANGE

When it comes to federal tax laws, December can often be the month when everything changes. For years, tax experts and business owners have grappled with repeated end-of-year developments — last-minute adjustments to the laws and regulations applying to federal business income taxes.

Not 2016. This has been a presidential election year. That's pretty much put a halt to any big changes. "History has said, lame duck Congresses don't really do very much," says tax attorney Patricia Hintz, a partner at Quarles & Brady in Milwaukee.

Furthermore, the two biggest yearly cliff-hanger issues where tax policy is concerned were substantially resolved a year ago. The late 2015 tax and spending bill passed by Congress and signed by the president made long-term changes in two different provisions that govern business deductions for equipment purchases under the federal tax code.

The 2015 legislation cemented in place a previous expansion of the code's Section 179 dating back a decade and a half.

Keeping it simple: Section 179 lets businesses take immediate federal tax deductions on certain kinds of new equipment. Section 179 used to restrict that immediate deduction to equipment costing less than \$25,000 per item, with a ceiling of \$125,000 on total annual purchases that qualified.

When the economy stalled after the 9/11 attacks, Congress boosted the Section 179 limits temporarily. Suddenly, business could expense qualifying new equipment costing up to \$500,000 apiece — 20 times the original cap. And the total yearly cap for all qualifying equipment purchases soared to \$2 million.

Those temporary boosts were extended year after year after year — one year at a time, and always at the 11th hour.

PERMANENT RELIEF

In the 2015 spending deal, the new, higher limits were made permanent. And because business owners have known this all year, they aren't faced with a last-minute decision over whether a big purchase will qualify.

Bonus depreciation was another provision enacted "temporarily" after 9/11. For qualified purchases, a business that for whatever reason can't use or qualify for the full deduction under Section 179 can take an immediate 50 percent deduction on the cost of new equipment. Like the higher Section

179 limits, bonus depreciation has been given a last-minute extension every year, until last year.

That's when Congress and the president agreed to extend it through 2017, followed by a slow phase-down. Hintz says the 50 percent bonus depreciation is scheduled to drop to 40 percent in 2018 and 30 percent in 2019. As with the Section 179 change, the longer time frame makes it easier for businesses to plan purchases with an eye toward the tax effects.

PROFESSIONAL HELP

Of course, how these provisions, or any other aspect of the tax law, will affect your business will depend on the details of your personal business circumstances that no column can address precisely. So here's as good a time as any to remind you that if you don't already have a trusted tax

Between the eggnog, the gift-giving, and the fellowship with friends and relatives this holiday season, take time to make sure you're ready for the tax man in the New Year. It may be one of the best year-end presents you can give your business.

adviser — a certified public accountant at least, and a lawyer qualified in this area as well if at all possible — you need to get a good one pronto.

Not to mention that in every state and in many municipal jurisdictions, a variety of specific laws and regulations abound that go far beyond what we can round up here.

OTHER POINTS OF NOTE

Still, this is a good time to review your practices and carefully inspect your records as you prepare your taxes. Some things to consider:

* If you need to lower your tax burden, are there some bills you can get ahead on by paying them before the end of the calendar year? (You need to be reasonable here — the IRS will frown on things like trying to drive up your expenses by paying your company electric bill for the next three years in one lump sum.)

* On the income side, are there some invoices you can hold to send out in the new year, to trim your income and therefore your tax burden for the current year?

There's an important caveat to those two suggestions, Hintz notes: They really only work if you keep your books on a *cash accounting* basis — booking income when you receive payment and expenses when you pay the bill. Most small businesses work this way, but if you don't know how yours does, check with your adviser.

The alternative is *accrual accounting*, in which you book income when you do the work, regardless of when you get paid, and you book an expense when you actually order the supply, even if you don't pay for it until 30 or 60 days out. Small businesses rarely use that method, Hintz points out. But again — find out from your adviser what you do if you don't already know.

Some other things to look at:

* The end of the year is also a good time to throw money into your personal retirement plan — another tax-saving act. The deadline is soft, however: Depending on the specific federal regulations your retirement plan falls under, you can probably take credit for contributions you make even after the New Year begins, so long as you make them before April 15. (Once again — check with your expert to be sure.)

* Review that you're fully in compliance with the Affordable Care Act. If you have fewer than 50 employees, you don't have any obligation to buy health insurance for your workers. But for your own health coverage, you're probably governed by the law's individual mandate, which requires everyone to carry health insurance or face a penalty. That penalty is assessed through your income tax return, so now's the time to confirm you're properly covered and won't have to pay it.

* Make sure you do a good job of segregating personal expenses from business ones. That sounds obvious, but Hintz points out that many small-business owners may casually blur the two categories. That's especially true if you make some personal purchases from the same supplier you use for your business.

Suppose you carry a running account with the local hardware store so you and your crews can replace hand tools or other materials. Now think about those weekends when you're working on a project around the house and you stop by the same store for *those* supplies. Does your purchase get chalked up to the same business account?

If you can confidently say no, that's great. But Hintz says small-business owners sometimes put everything on one bill, personal and business. "The burden of proof is on you to show you used it for a business purpose," she says.

Company vehicles that wind up getting used sometimes for personal trips can similarly cause

complications at tax time. They're "a real hot button," says Hintz.

So between the eggnog, the gift-giving, and the fellowship with friends and relatives this holiday season, take time to make sure you're ready for the tax man in the New Year. It may be one of the best year-end presents you can give your business — and yourself. **C**

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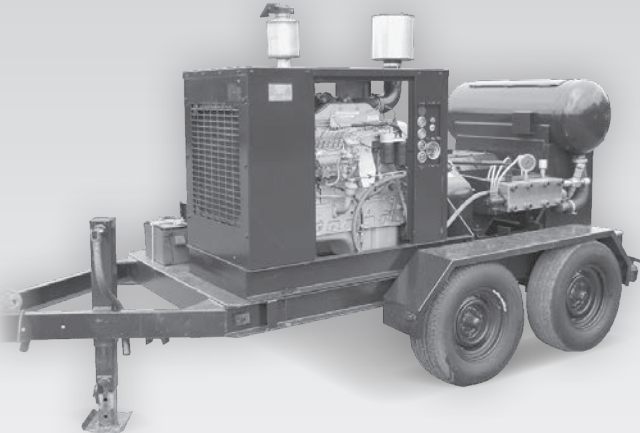
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SECOND-GENERATION FRANCHISE EVOLVES WITH THE MARKET AND TAILORS SERVICES TO CUSTOMER NEEDS

BY MARIAN BOND | PHOTOGRAPHY BY AMY VOIGT

James Carney III has watched business ebb and flow at his rural Ohio Roto-Rooter franchise. Like most drain cleaners, he tries to maintain the flow.

Carney's father started the business in Ashtabula County in 1969. The younger Carney came on board full time in 1992 in an era of change for the company: They discontinued septic services, secured their master plumber licenses and began providing full plumbing service.

Another opportunity opened up at around the same time — underground emergency repair services — and the company began handling everything from sanitary sewer repair to storm sewer work and waterline repair and replacement in the county.

"Roto-Rooter has been very good for us," Carney says. "The franchise supports us with their own line of drain cleaning equipment,

which is about the best out there. It is a good line. Over the years, the Roto-Rooter name has also been a benefit in bringing in business."

HIGH-QUALITY EQUIPMENT TO GET THE JOB DONE

The plumbing and sewer sectors function with three technicians working under Carney's plumbing license. The team handles CCTV inspection of smaller lines with a RIDGID SeeSnake, and larger lines with a camera system from Amazing Machinery.

"Having the cameras has taken all the guess work out of the equation," Carney says.

CCTV inspection pinpoints root intrusion issues, which are problematic in the older cities with an abundance of trees. The recently purchased Sewer Equipment Model 747 trailer jetter (2,000 psi/40 gpm) is very helpful in tackling the root issue.

profile

ROTO-ROOTER

SERVING ASHTABULA, OHIO, AND ADJOINING MUNICIPALITIES

OWNERS: James Carney III and Molly Carney

ESTABLISHED: 1969, Franchise included 1972

SERVICES: Drain cleaning, plumbing, underground utility services, waterline replacement

CUSTOMER BASE: Residential, industrial, commercial, municipal

EMPLOYEES: 7





Roto-Rooter technicians Paul Savel (left) and Mike Justus clean a sewer line with a Sewer Equipment 747 trailer jetter while owner James Carney looks on.



Roto-Rooter owners James and Molly Carney at their home office in Ashtabula, Ohio.

PROMOTING A GOOD NAME

James Carney and his wife, Molly, have promoted their rural Ohio Roto-Rooter franchise in a number of ways, but most important is their participation in numerous civil and charitable activities.

Ashtabula County includes several small communities (including Ashtabula, Geneva, Jefferson, Andover and Austinburg) with a total population of around 100,000. The advantage of being in a group of small communities is that a familiar and popular name is more readily recognized as a supporter of the region. Carney says that they have a good working relationship, and people are comfortable asking for the involvement of Roto-Rooter and the Carneys.

Roto-Rooter of Ashtabula was one of six sponsors of a soccer camp in the town of Austinburg for children in kindergarten through fifth grade. Carney says they are also active in a number of fundraising events through the local Catholic schools.

For the Carneys it is more than just providing money when it comes to these important community activities.

"For 20 years my wife and I have participated in the Our Lady of Peace Catholic Church three-day Church Festival held in the second week of July, participating in several ways," he says. "In addition to having our crew go in and set up the exterior for water and gas they will need for this three-day event, Molly and I make sausage and pepper sandwiches in a booth each evening from 6 until 11 p.m."

Their three service vans include two 3/4-ton Ford E-350s and an E-150. One E-350 is dedicated entirely to sewer cleaning, while the other two trucks have drain cleaning and plumbing equipment. He estimates inventory on the combo trucks to run from \$10,000 to \$12,000. The company operates out of a 6,000-square-foot facility they built in 1995, where they have sufficient room to park all vehicles out of the harsh weather.

Carney says there is always equipment he would like to add, but he's careful about making big purchases. "You want to make sure you have work to pay for new tools. I would definitely like another small jetter ... something about 4,000 pounds. That would be my next thing to pursue."

Rehabilitation equipment and services would seem like a logical next step, but Carney says pipe bursting and relining haven't caught on in the area yet. None of his competitors are providing those services, and he doesn't foresee advancing in that direction at this time. He also says there is very little opportunity to do subcontracting for other plumbing companies, unless someone needs the services of a jetter.

As to adding any other services, Carney is seriously thinking about getting back into the septic service, since they are in a very rural region.

"There would be three concerns if we were to do this," he says. "The biggest thing would be finding a place to dump. At present the city (Ashtabula) wastewater plant is not taking any of that. The people doing that work are driving a minimum of 30 miles to dump. So there is that concern, and the cost.

"We would have to purchase a septic tank truck, and thirdly we would need to find the personnel to do the work. So there would be a lot to consider. The work is there, no question about it."



SCHEDULED AND EMERGENCY WORK

Sewer work provides 40 percent of the company's business, with drain cleaning and plumbing accounting for about 30 percent each. "Sixty percent of our business is residential," says Carney. "The balance is split between commercial, industrial and municipal.

"Our plumbing division is primarily for service and repair work, and occasionally some remodeling," he continues. "We typically have the water heaters, toilets, faucets. In our drain and sewer cleaning, we are replacing a lot of the old cast iron using SDR 35 PVC, and when we need something thicker we use SDR 26 PVC."

The company's underground sewer work primarily involves excavation and replacement of old clay tile. These are typically municipal, industrial or commercial projects. Municipal work is often on an emergency basis, particularly when the county has broken sewer lines under the street.

"With emergency calls for the county, we go in and stay on the job until it is finished," Carney says. "Sometimes it can be a one-day project, but it can turn longer term. Whatever, we stay until completed."

Pipe replacement has become the driving force for Carney, as these jobs — if not an emergency — are typically booked one to two weeks ahead. Plumbing and sewer cleaning calls tend to come in on an as-needed basis.



St. John's School maintenance supervisor Chris Cimino watches as Mike Justus uses an auger to clear a toilet.

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James Carney III

"We have a three-man underground utility crew I can depend on," Carney says. "Rick Watt is the man in charge when in the field. These technicians can also fill in both in plumbing or in drain cleaning, especially when we have some heavy rains to deal with. They are very flexible."

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Paul Savel keeps his eyes down the manhole as he guides a jetter hose into the sewer line.



Mike Justus switches jetting nozzles before cleaning a sewer line at St. John's School in Ashtabula.

company has a Komatsu Model 35 and two Kobelcos, models 35 and 80. There are two Ford utility trucks.

Safety is always stressed and the team takes every precaution, from the green safety vests and hard hats to the aluminum shoring box that is fully utilized in every excavation.

RELIABLE TEAM

At the office level, Carney's wife, Molly, fills a major role as a full-time staffer overseeing much of the coordination of payroll and other duties.

"I like to say she does a lot of things to keep me out of trouble," he says.

Carney says he is happy to have a good crew, but finding new people who are interested in plumbing, drain cleaning or the underground work is "next to impossible." There is no training available in the county.

"I have no plans to increase the crew at this point in time, but I'm always looking for somebody to add that might bring a special skill set," he says. "I probably could use one more really experienced plumber — someone who is well versed in plumbing — but we just can't seem to find that person at the moment."

Carney is comfortable with his technicians' ability to make decisions in the field, but when something is crucial or questionable they are always able to get in touch with him.

"I'm lucky in that I have independent thinkers on my crews." **C**

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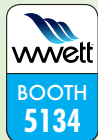
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Pipe Explorer

R.S. Technical's RodSTAR inspection camera navigates hard-to-reach laterals

By Kyle Rogers

Sewer problems often lie in the laterals rather than the mainline, but adequately inspecting and assessing those lateral lines isn't always easy. That's a problem R.S. Technical Services wants to help customers solve with its latest inspection camera offering: the RodSTAR.

R.S. Technical brought a demo model of the RodSTAR to the 2016 Water & Wastewater Equipment, Treatment & Transport Show as it continued to conduct field testing before going into full production. The RodSTAR is a 2-inch-diameter, 6-inch-long camera designed for use with R.S. Technical's Mainline and Lateral Inspection System.

small rod that can be used to improve maneuverability when jumping among different pipe sizes or T and Y junctions.

"That's one of the nice features with this camera," Dorough says. "If there's a T or Y and you want to go up a line in the opposite direction, you can rotate the camera, grab with that rod, and pull yourself up into that line. Another use we've found is times when you may need to move from, say, 6-inch pipe to 4-inch. With the rod you're able to climb into the 4-inch from the 6-inch. With a normal camera you would just head right into it and stop on a dime. You wouldn't be able to get over the ledge. You would be at the mercy of the pushrod. With the RodSTAR you have a little more control over where you can go."

The RodSTAR also has auto-uprighting picture and an integrated 512 Hz sonde for locating purposes.

"We're targeting anyone in need of lateral launching. Anyone who has some offsets and Y's or T's that they're trying to get into," Dorough says. "This would be a good product for anyone who needs to camera that type of system. It can get into areas that other cameras cannot."

Once in those hard-to-access areas, the RodSTAR can produce a quality, thorough inspection, he says.

"The other camera used with the system was kind of fixed. It didn't move, so if it was riding along the side of the pipe all you saw was that side," Dorough says. "With the RodSTAR you can bend and look around. If you come to a clean-out, you can look up at it to see if it's broken or there are any problems. The other camera was just fixed straight ahead. You couldn't rotate it at all."

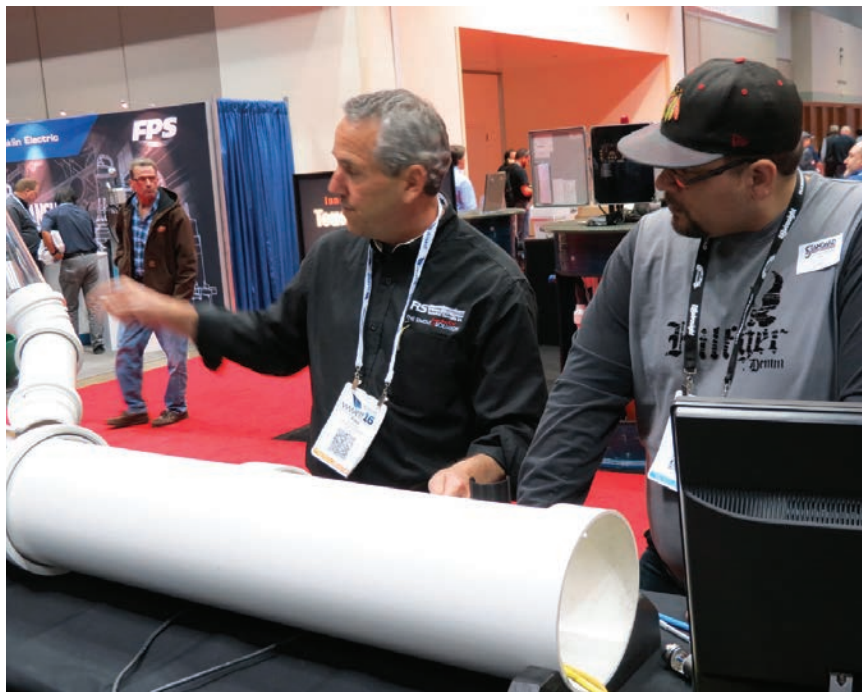
Only two RodSTAR units are being used out in the field currently, in municipalities in Kentucky and West Virginia. Dorough says those customers specifically requested the camera, so R.S. Technical built units for them even though the RodSTAR isn't yet in full production.

"Since it's a Generation 1 model, there are things we're still working on to make it better before we go into full production on it," he says. "There's been a lot of testing on it out in California and we built units for those two customers because they asked for them early on. The only thing we've asked of them is that they give us a lot of feedback on it."

There has already been one update from the demo model that appeared at the WWETT Show in February. On that unit, controlling both the mainline camera and the RodSTAR required two joystick boxes. Dorough says it has now been modified so everything can be operated from a single controller.

Even though only a demo model was available for WWETT Show attendees, Dorough says bringing the RodSTAR to the show was beneficial.

CONTINUED >>



Fred Reynolds, left, of R.S. Technical Services shows a WWETT Show attendee how the new RodSTAR camera is able to maneuver through bends in a pipe. (Photo by Kyle Rogers)

"The RodSTAR piggybacks on the mainline camera and transporter," says Jed Dorough, Northeast sales manager for R.S. Technical. "You line it up with the lateral and activate a secondary motor on the transporter and that is what pushes the camera into the lateral."

But two key features distinguish the RodSTAR from the other lateral cameras typically used with the system — pan-and-tilt capability and a

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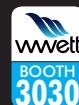
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Close Your Company's Generation Gap

Learning to appreciate each age group's attributes and skills is vital to a cohesive workplace

By Jennifer FitzPatrick

Since mandatory retirement has long been abolished in most industries, we are living in a time in which multiple generations of employees work together. Healthy, seasoned octogenarians work alongside college kids and every age group in between. This age diversity in the workplace presents challenges in communication, expectations, work ethic, abilities and strengths.

While multigenerational co-workers struggle to understand each other, some of the most difficult situations involve managing a much older or younger staff. Younger managers sometimes categorize their older workers as slower and technologically deficient. Older managers tend to question younger employees' experience, maturity and work ethic.

For example, Samantha, a newly hired 28-year-old vice president of a small company, supervises David, a 52-year-old manager. She asks David to spearhead a project that will create a Facebook page for their company. He says he doesn't know much about Facebook but his teenage sons use it all the time. When David asks why the company would want a Facebook page, Samantha rolls her eyes and chalks his question up to David being behind the times.

Robert is a 61-year-old supervisor who constantly receives requests from his staff about having more flexible hours. Several of his employees are in their 20s and 30s and have young children who need to be dropped off at day care in the morning or picked up after school. Robert tends to have less confidence in employees who want flexible schedules.

What can Samantha and Robert do to better lead their employees of different generations? Samantha could best engage David if she approached the Facebook situation with patience and additional training. Robert would likely inspire the most loyalty with his staff by being a bit more flexible. If he made an effort to put some work-life balance policies in place, his staff might perceive him as more reasonable and work even harder.

There are challenges from the subordinate's perspective as well.

While it's usually a mistake to underestimate a younger manager, many older workers do. Sure, it's possible that a younger employee might have been hired or promoted due to nepotism or other unjustifiable reasons. Typically, that younger person deserves the position due to education, experience, leadership potential or other abilities. Regardless, it's important to judge younger managers on merit rather than age. While a seasoned employee may resent a younger person coming in and telling him or her what to do, it is likely this person has something unique to offer.

Sometimes the resentment toward a younger boss has more to do with the older worker than anything the younger manager has done. Reporting to a younger manager can trigger feelings of inadequacy or old age, and regret for how an older worker's career has turned out. Older workers may think

back to when they began their careers and second-guess their choices. Older employees struggling to accept a younger manager should focus on getting along and supporting him or her as they would with any other boss.

In working with a boss of a younger generation, the older worker should:

Keep an open mind. Almost everyone we encounter at work can teach us something. At the very least, most younger managers have fresh, new ideas that can invigorate the workplace.

Avoid discussion of the younger manager's age. When an older worker starts to compare the younger manager to his daughter or even granddaughter, it can offend the manager. Younger managers know their age; they don't need older staff reminding them.

Refrain from too many references about the past. Younger managers will not appreciate older employees harping on the way "it's always been done" or the way things were "before you were out of diapers."

Make an effort to learn technology the boss uses. Not only will this impress a younger manager, it will increase the older subordinate's skill set.

Accept this person as the boss. Ultimately, if the older worker wants to remain in the position or even be promoted, an attitude shift is critical.

Younger workers also have a challenge understanding their older managers. They find themselves frustrated when the older manager does not embrace technology, lives in the past or dismisses younger counterparts when they don't recognize pop culture references of previous eras.

In working with a boss of an older generation, younger employees should:

Respect the years of experience their manager brings to the table. Even when an older boss acts in a way the younger staff does not agree with, it should be acknowledged that the decision might be based on past learning experiences.

Understand that "face time" may be important to an older manager. It is common for older bosses to be less open to working from home or nontraditional hours because it was not something they had ever become comfortable with. If employees do have flexible schedules or work off site, they may want to check in regularly and take steps to reassure the older manager that work is getting done.

Explain pop culture references to keep the older employee in the loop. A 20-something who mentions an incident he or she saw on a reality show should take the time to let his 60-something boss in on the joke.

Accept that meetings and phone calls may be preferable to social media. While many older workers embrace technology — Skype, email and instant messaging, for example — some favor more traditional modes of communication. Going with the flow on the boss' desired communication method will be appreciated by an older manager.

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We will continue to see multiple generations collaborating at work. More retirees are reentering the workforce for extra cash, and many older adults are delaying retirement indefinitely. With more high school and college graduates entering the workforce every year, it is important for workers of all ages to make an effort to understand and appreciate each other. **C**

ABOUT THE AUTHOR

Jennifer FitzPatrick is founder of Jenerations Health Education Inc. and the author of Your 24/7 Older Parent. Reach her at www.jenerationshealth.com.

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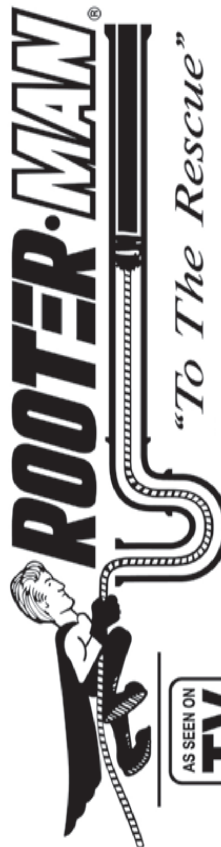
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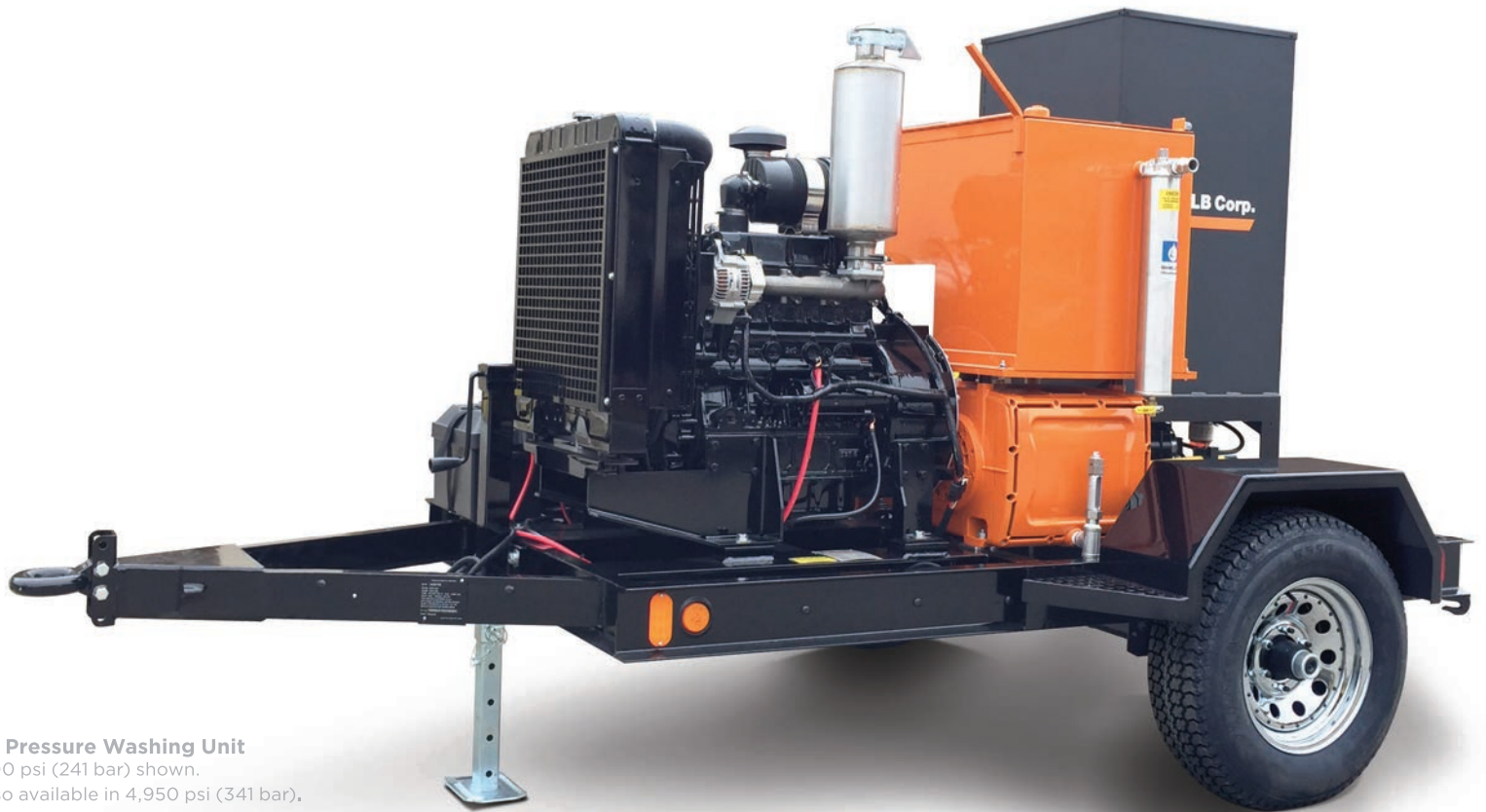
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Keep Your Feet on the Ground

Concrete deterioration, abandoned cesspools and DIY repairs are serious issues when working around septic systems

By Jim Anderson

In the past few months, there have been articles and news reports from various parts of the country about homeowners falling into septic tanks. Fortunately, the most recent ones I've seen resulted in the homeowners being rescued with no real harm done other than the embarrassment.

Those articles were coupled with someone sharing a practice that I was previously unaware of: trying to "fix" a concrete tank with a deteriorating lid by placing rebar on top of the lid and pouring concrete over the top of the tank.

TEMPORARY REPAIRS

When my colleagues and I do workshops on tank inspection, we highlight in a humorous manner that if you are probing a tank and you hear the splash of concrete into the contents of the tank, step back! You are in danger of falling through into the tank. In any discussions I have had with people in the precast concrete industry, they have noted that if a tank is showing signs of advanced deterioration — such as concrete falling off in chunks and rebar showing through the concrete — the tank is not sound and needs to be replaced.

Solutions such as the one described above may temporarily save the homeowner some money, but unless the cause of the deterioration is addressed, it does not solve the problem. Deterioration will continue, making that tank in the backyard a safety hazard for the homeowner and anyone else who walks across the area.

This opens the homeowner and the company that provided the "fix" to potential lawsuits where the outcome may not be as positive as just fishing someone out of a tank. Every year there are multiple stories about people who fall into septic tanks or cesspools and die, so it is nothing to take lightly or to try to take shortcuts to save a few bucks.

DANGERS BELOW

In one recent case, a homeowner in Massachusetts was standing on a stepladder in the tank trying to make his own repairs. The news story didn't say what those repairs were, but the incident shows the need for continued customer education. Advise homeowners that only professionals with proper safety equipment and knowledge should be making the repairs. I speculate that he was trying to remove some type of blockage in the sewer line when he fell off the ladder into the sewage and could not get out.

From the photos published with the story, it appears the tank was very shallow, which meant dangerous gases could dissipate and the homeowner was able to get fresh air. As everyone in the industry is aware, having adequate oxygen can be a major issue in deeper tanks. This is when those unfamiliar with the risks can be overcome and ultimately lose their life. Using proper equipment for confined-space entry is important, and a job like this should never be done alone.

CESSPOOL WORRIES

In some areas, seepage pits and cesspools present other potential problems that homeowners and professionals should be aware of. Those systems may have been replaced by more up-to-date technology, but the cesspool or seepage pit may not have been properly abandoned. Each of these is a potential death trap for the unsuspecting, and just about every year there are reports of homeowners disappearing in their backyard when they have walked over the area of an old seepage pit, the ground collapses and they fall in.

Construction of cesspools and seepage pits usually involved using concrete blocks with spaces between and no bottom, so they are technically not tanks. Nevertheless, this type of construction was common 50 to 70 years ago, and the blocks deteriorate and ultimately collapse. Often the current homeowner isn't aware of the system since it was replaced by newer technology or a municipal sewer connection.

When found, these structures should be properly abandoned by collapsing the blocks into the hole and then filling with a granular material such as sand, compacting the material and covering over the area. If feasible, removal of the blocks is desirable. While this is probably an unanticipated expense for the homeowner, it is necessary to ensure safety. **c**

ABOUT THE AUTHOR

Jim Anderson, Ph.D., works with the National Association of Wastewater Technicians and is an emeritus professor at the University of Minnesota Department of Soil, Water and Climate.

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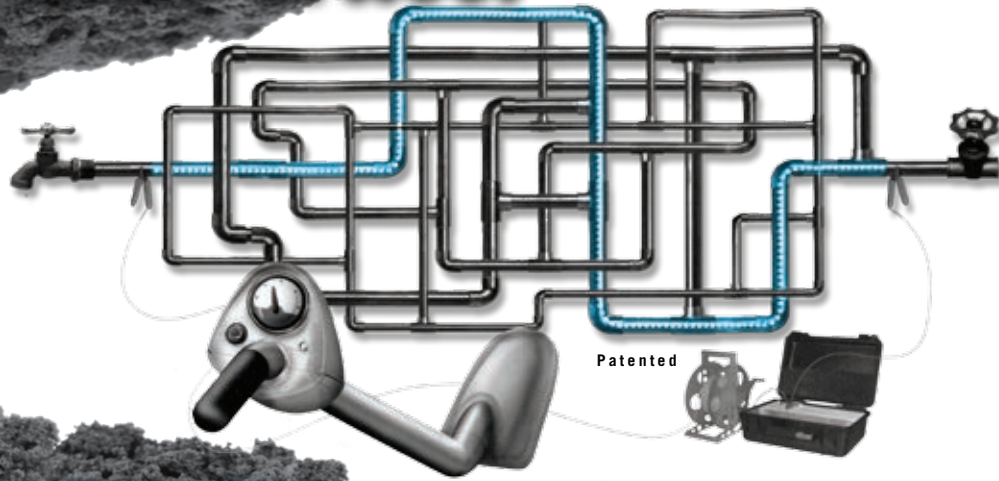
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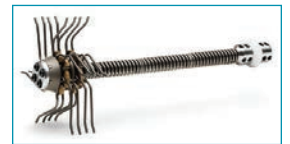
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The **Rooter-Man Franchise System** offers a low-cost solution to franchise ownership, with a flat-rate pricing system (no royalty on percentage of sales). Franchisees are granted an exclusive franchise license for their chosen territories, and become part of a team of independent dealers working together under a nationally branded website and recognized trademark, with proven systems for success. Franchisees receive equity in the national brand by receiving exclusive use of the Rooter-Man trademark in their territory, an appreciating investment that can later be sold or expanded. **800/700-8062; www.rooterman.com.**

PLUMBING PRODUCTS

NU FLOW NU DRAIN

The **Nu Drain** CIPP system from **Nu Flow** creates a protective, structural pipe inside an existing host piping system without the need for digging or destruction. The system lines inside infrastructure and underground pipe, using a liner saturated with epoxy to create a barrier that can span missing sections of pipe, which commonly cause low flow and root intrusion. The seamless and jointless CIPP is used to rehabilitate deteriorating sanitary drain and storm sewer lines, stopping leaks while controlling and preventing root intrusion. It is best suited for pipe 3/4 to 12 inches in diameter, while accommodating multiple 45- and 90-degree elbows. 905/433-5510; www.nuflowtechnologies.com.



PORTABLE JETTERS

AMAZING MACHINERY BOSSJET MAX

BossJet Max jetters from **Amazing Machinery** offer versatile hose reel configurations, with the choice of no reels, a fixed reel, or a 360-degree stainless steel pivoting reel, and with a mounting bracket for an optional remote hose reel for indoor jetting. They come with Honda, Kohler, Yanmar or Vanguard engines, with or without electric start. Pump options include CAT, A/R and General, with pressures up to 4,200 psi and flow rates up to 5.5 gpm. The frame is powder-coated 1.5-inch tubular steel, which wraps around the engine and pump for protection. Each unit comes with a laser nozzle and washdown accessories with 50 feet of leader hose. 800/504-7435; www.amazingmachinery.com.



NOZZTEQ LATERAL HOSE CART

The **Lateral Hose Cart** from **Nozzteq** leverages a jetting truck and high-quality nozzle investment by extending their reach into small areas like laterals. It's a heavy-duty cart with ideal clearance and large wheels, and comes with a roll cage loaded with 200 feet of 1/2-inch, 4,000 psi sewer hose. It adapts to 3/4- or 1-inch jetting trucks, comes with a 5,000 psi pressure gauge and shut-off valve, and is rated for 5,000 psi, enabling the use

of high-pressure jet streams and nozzles in places that previously couldn't be reached. 866/620-5915; www.nozzteq.com.

PRESSURE WASHERS AND SPRAYERS

CAM SPRAY MCB SERIES

MCB Series skid-mounted pressure washers from **Cam Spray** have the ability to adapt to a flatbed truck, pickup or van, with or without an onboard water tank. They are available in operating pressures from 2,000 to 7,000 psi and operate without having



to plug into an electrical source. These machines use gasoline engines with a high-amp charging system. The engine provides the power to drive the pump system and provide 12-volt DC power to keep the battery charged and operate the burner system. They include an industrial gas-powered engine, triplex plunger pump, chemical injection, 50-foot hose, and a trigger gun with 0-, 15-, 25- and 40-degree nozzles. The burner system includes a rust-free fuel tank and heavy-duty coil with stainless steel wrap, and is controlled by an adjustable thermostat. 800/648-5011; www.camspray.com.

JENNY PRODUCTS STEAM JENNY

Steam Jenny belt-drive cold pressure washers from **Jenny Products** absorb engine vibration, allowing the pump to be located away from the engine heat. They are powered by 9 or 13 hp Honda GX Series engines, with triplex ceramic plunger pumps, pressure ratings between 3,000 and 4,000 psi, and flow rates between 3 and 4 gpm. They have thermal pump protection, an unloader valve and a high-pressure relief valve to prevent pump damage. The chassis is made with powder-coated, 7-gauge steel. Standard accessories include a professional-grade insulated trigger gun with safety lock, quick-connect nozzles with nozzle control, high-capacity inline water strainer, gun/wand holder, hose reel mounting adapter and dual rubber isolators. 814/445-3400; www.steamjenny.com.



WATER CANNON MONSTER

Monster pressure washer hoses from **Water Cannon** are made with a dual-braided construction of steel over polyester and jacketed with translucent polyurethane for high strength, durability and kink resistance. They are equipped with quick-connect fittings for quick and easy setup, with a 3/8-inch male QC plug and 3/8-inch female QC socket. Their translucent polyurethane outer jacket is non-marking, abrasion resistant, wipes clean with one pass and is designed to fit most gas pressure washers with standard quick connections. Techs can choose between 4,500 psi standard-size 50-foot assemblies, or for jobs that require longer reach, 100-, 150- and 200-foot versions are available. 800/333-9274; www.watercannon.com.

PUSH TV/CRAWLER CAMERA SYSTEMS

CUES MPLUS+ XL

The **CUES MPlus+ XL** push system enables easy operation with its all-in-one setup, and flexibility by quick removal of the control unit to be used separately. It includes a coiler configuration and pan-and-tilt camera designed for mainline and larger pipeline applications up to 500 feet. It integrates video observation coding, observation coding interface and digital recording into an easy-to-use intuitive package. This lightweight system includes large and durable wheels for easy



portability and a balanced footprint for stability. It is manufactured for rugged reliability and designed to handle rigorous field use. 800/327-7791; www.cuesinc.com.



DEEP TREKKER DT340 PIPE CRAWLER

The DT340 Pipe Crawler from Deep Trekker comes with everything needed to perform a fast and efficient sewer inspection, all without the use of a dedicated service truck or

additional generators. It has internal lithium batteries that last between six and eight hours, a lightweight hand-held controller with a built-in viewing screen, plug-and-play integrations, and various wheel track options. It allows the technician to access hard-to-reach sites to begin easy pipe inspections in just minutes. The system is completely submersible up to 164 feet. 519/342-3177; www.deeptrekker.com.



EASYCAM E5150

The E5150 from EasyCAM comes with a heavy-duty, midsize, 200-foot pushrod that easily navigates in 2-, 3- and 4-inch pipe. It can run cordless up to 12 hours. Its portable hand-held monitor records to an SD card or is available with a Wi-Fi option. The color camera comes with a sapphire lens. Its modular design with plug-and-play components allows repairs to happen quickly. The unit is owner-repairable, drastically reducing the

downtime. 239/260-2056; www.easycamllc.com.

ENVIROSIGHT JETSCAN HD

Deployed on any 3/4- or 1 1/2-inch jetter hose, the JetScan HD video nozzle from Envirosight can help a cleaning crew determine what tools and setup to use, identify blockages during emergency callouts, and document the outcome of cleaning operations. It captures valuable HD video footage from underground that can be viewed immediately afterward on a tablet. As it advances down pipe 8 to 24 inches in diameter, it records 720p HD video in MPEG format to an onboard SD memory card. Immediately afterward, the card can be removed and video viewed on an iPad or other SD-compatible device. Twin high-output LED lamps ensure bright, vivid footage. It lasts four hours on rechargeable lithium-ion batteries, and stores up to eight hours of video. 866/936-8476; www.envirosight.com.



FORBEST PRODUCTS FB-PIC3388M/3388MT

The FB-PIC3388M/3388MT camera system from Forbest Products allows users to inspect 4- to 20-inch pipe. The package comes with 200 feet of 3/8-inch fiberglass cable and a reel with footage counter and stand, 1 1/2-inch self-leveling waterproof color camera head and a detachable stainless steel spring kit with or without a built-in 512 Hz sonde transmitter. With a camera head adapter, a high-resolution 7/8-inch waterproof metal color camera head with or without a



built-in 512 Hz sonde transmitter can also be used on the 200 feet of cable. Two extra detachable spring kits with different hardness are provided for different applications. The heavy-duty waterproof control box includes a bright 10-inch LCD color screen that can record photos and videos with USB or SD. On-screen status indicators include footage of the cable pushed through the pipe and battery strength. 877/369-1199; www.forbestusa.net.



INSIGHT VISION CAMERAS IRIS

The IRIS pan-and-tilt mainline crawler from Insight Vision Cameras incorporates a motorized crawler and a power-rewind/feed-assist cable drum. The level rewind reel allows the video cable to be rewound at the same speed as the crawler is moving to avoid running over the cable. It allows

full 360-degree rotation and 180-degree pan for lateral sewer pipe inspection. It is designed for inspection of pipe from 6 to 12 inches in diameter (and up to 18 inches with an optional pneumatic wheel set). The motorized drum holds 600 feet of flexible and rugged video cable that will withstand the harsh environment found in sewer pipes. The unit is built with a telescopic handle and self-contained wheels for easy movement and portability. It operates on Windows 7 64-bit software with 500GB of solid-state drive. It incorporates an integrated accessory power outlet, multiple recording ports, HDMI external port, 10-inch LCD touch screen, Windows apps, snapshots, on-screen footage, text writer and internet remote desktop support. 800/488-8177; www.insightvisioncameras.com.



MYTANA MANUFACTURING MS11-NG

The MS11-NG mid-sized video inspection system from MyTana Manufacturing can be used to inspect 3- to 4-inch lines, and is available with 200 feet of strong pushrod. It has a 1 1/2-inch color self-leveling camera head, a built-in 512 Hz transmitter allowing a technician to locate during the inspection, and a daylight-readable 6.4-inch monitor. A technician can

record or upload an inspection using the MyTana Viewer App, available for iPhone, iPad and Android. Built-in Wi-Fi allows multiple viewers on relining/rehabilitation projects. Inspection records can be uploaded to YouTube or still photos emailed to customers. Media connects through RCA jacks on the front of the unit. 800/328-8170; www.mytana.com.



PIPELINE RENEWAL TECHNOLOGIES CLEANSTEER

The CleanSteer from Pipeline Renewal Technologies uses high-pressure water for propulsion, steering and cleaning as it captures live inspection video from inside lateral lines. It is able to traverse multiple bends in pipe, steer through branches, and levitate above debris, allowing municipal contractors and commercial plumbers to locate failed pipes, cross bores and blockages, as well as perform cleaning. It is fully water driven, with six propulsion

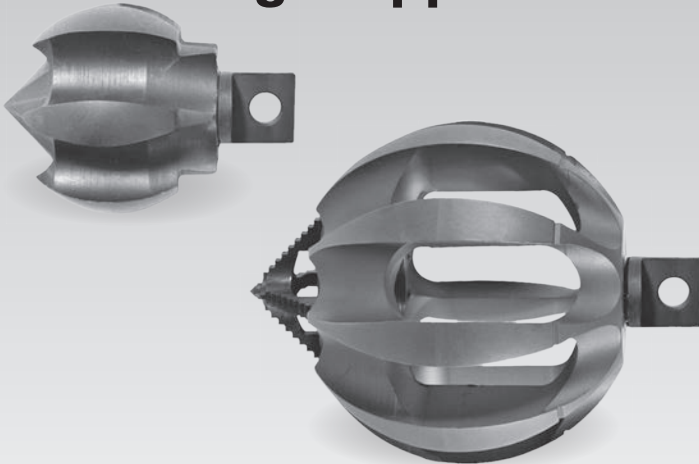
nozzles generating the power to pull a flexible hose through multiple bends, and a side nozzle on the camera can be aimed to steer through diverging pipes and hover past obstacles. An optional forward-facing nozzle can be pulsed

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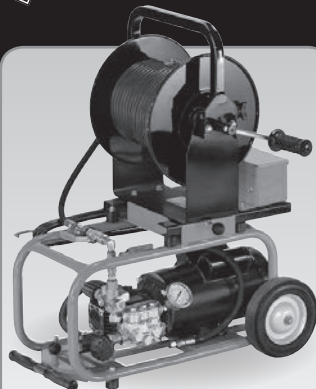
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to clear debris and other obstructions. The system works with any high-pressure water source, including pressure washers and combination trucks. The 1/2-inch hose comes in lengths from 115 to 190 feet. **866/936-8476; www.pipelinert.com.**



R.S. TECHNICAL SERVICES QUICK PEEK

The **Quick Peek** all-in-one, fully portable video inspection system from **R.S. Technical Services** is a compact, lightweight solution for drainline condition assessment in lines 2 to 10 inches in diameter up to 300 feet in length. It has a 7-inch bright LCD handle-mounted monitor with a sun shield/screen protector that can be positioned for a comfortable viewing angle. Easily accessible monitor controls include power mode, aspect ratio (screen size) and menu, plus set buttons for color, brightness, contrast, tint and volume. The side-mounted AC/DC power source houses controls for all camera functions, and provides a camera test terminal, AC/DC input, video/audio output, keyboard input and a condenser microphone with on/off switch. It has a high-resolution, low-lux color camera, keyboard for annotation, video/audio output, microphone, and is fully locatable with 512 Hz inline transmitter. Options include battery power, a self-leveling camera, 512 Hz receiver, roller skids, laptop interface, SD card reader and Wi-Fi interface. **800/767-1974; www.rstechserv.com.**



RAPIDVIEW IBAK NORTH AMERICA MINILITE

The **MiniLite** pipe inspection system from **RapidView IBak North America** allows users to inspect, record and measure the internal dimensions of smaller pipelines. During normal inspection users can accurately capture diameter measurements with one touch using the **ORION** zoom camera. The system consists of a cable coiler cartridge, which makes replacement easy, a portable command console and one of several choices of cameras. It includes a high-visibility 10.4-inch monitor and a full QWERTY keyboard. Inspections are recorded on a built-in MPEG digital video recorder on SD and SDHC memory cards. The system is available in 100- and 130-foot lengths. **800/656-4225; www.rapidview.com.**

RATECH ELECTRONICS ELITE SD WI-FI

The **Elite SD Wi-Fi** from **Ratech Electronics** allows technicians to record pipe inspections wirelessly to an iOS or Android device, and take live video and digital still photos that can be immediately uploaded to YouTube, so there's no more recording to USB thumb drives, SD cards or DVD discs. Simply download the app to an iPhone or iPad and stream the video wirelessly. The Wi-Fi interface is available on any current Ratech product or existing Ratech systems in the field, and is available with a sun-readable 10-inch LCD monitor and either a self-leveling camera, small ultramicro camera or pan-and-tilt push camera. Systems come in cable lengths from 100 to 400 feet. **800/461-9200; www.ratech-electronics.com.**



RAUSCH USA MINCAM360

The 2-inch **minCam360** remote-controlled pan-and-tilt push camera from **Rausch USA** has a four-step zoom and a tri-band sonde with selectable frequencies. The Bluetooth remote includes a joystick for camera control. The cable reel is equipped with 200 feet of cable (with capacity of up to 300 feet) and runs for four hours. The 8.4-inch sunlight-readable monitor enables recording video, voice and photo directly to an SD card. This system is designed as a capable stand-alone inspection system, including a text generator for detailed reporting capabilities and an on-screen distance counter. It can be used in pipe from 3 to 16 inches with all centering accessories. **717/709-1005; www.rauschusa.com.**



VIVAX-METROTECH VCAMMX

The **vCamMX** portable all-in-one camera from **Vivax-Metrotech** can be used to inspect pipes between 1 and 4 inches. The control module's 8-inch daylight-viewable LCD screen shows the distance of pushrod deployed, as well as the current time and date. Recordings are made in AVI video and pictures in JPG format directly to a USB thumb drive, then instantly backed up to an SD card. The internal microphone allows audio commenting over recorded video. The pushrod is traceable with the use of an external locator transmitter and available in 100 or 150 feet. The dual-frequency 512 Hz / 33 kHz sonde is standard equipment. Two camera heads are interchangeable in the field. The smaller D18-MX camera is fixed position and 0.7 inch in diameter, and the D26-MX is self-leveling and 1 inch in diameter. **800/446-3392; www.vivax-metrotech.com.**



TRUCK/TRAILER JETTERS



AMERICAN JETTER 58 SERIES HOT JET

The **58 Series Hot Jet** from **American Jetter** offers increased cleaning power for grease cutting and deicing by heating the water up to 190 degrees. Consistent power is provided by a 32.5 or 37 hp Kohler gasoline engine with flows of 8.5 and 11 gpm to 4,000 psi. The rear electric speed control reel provides precise cleaning speeds and easy access to the jet hose with the included hose guide. Low-water shut-off prevents pump damage if the 200-gallon tank runs low. The optional 1-mile open-range wireless remote allows for water ON/OFF, engine shutdown and hose reel control. The heavy-duty square tubing trailer offers a 2-inch ball coupler and standard electric brakes. **866/944-3569; www.americanjetter.com.**

HI-VAC CORPORATION O'BRIEN 7000 SERIES

The **O'Brien 7000 Series** trailer-mounted jetter from **Hi-Vac Corporation** comes with water tanks and a sediment pump for easier cleaning and longer life. The trailer has the muffler and air cleaner mounted inside the enclosure for improved sight lines, electric



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reel control for smoother rotation and easier operation, and hydraulic and water gauges mounted in the main control panel for easier viewing. **800/752-2400; www.hi-vac.com.**

HOT JET USA VAC 'N JET

Vac 'n Jet trailer-mounted sewer jetters from **Hot Jet USA** are compact, about one quarter the size of a hydroexcavation truck. They are available with hot- or cold-water options, with a choice of 23 or 35 hp Vanguard by Toyota engines, 12-gallon gas tank, 24-gallon diesel tank, a 500-gallon steel spoils tank with a Gardner Denver vac blower, Colt 4-ton hydraulic dump and 24-inch opening rear hatch. They have a 5- by 16-foot diamond plate steel deck with dual 7,000-pound-rated axles with electric brakes, and carry a 200-gallon water tank. **800/624-8186; www.hotjetusa.com.**



RING-O-MATIC 275 VACEX

The **275 VacEx** from **Ring-O-Matic** combines the safe cutting power of high-pressure water with a powerful vacuum suitable for a variety of applications, including sewer jetting to clear sewer lines, sump and catch basin cleaning, potholing for utility location, HDD job site support and mud management, construction site cleanup, and environmental cleanup from flooded basements to post-hurricane and oil spill contamination. It comes standard with a 36 hp CAT diesel engine and 600 cfm Gardner Denver positive displacement blower. It can be mounted on a vacuum trailer, vacuum truck, or skid-mounted. **800/544-2518; www.ring-o-matic.com.**

SEWER EQUIPMENT MONGOOSE JETTERS MODEL 184

The **Mongoose Jetters Model 184** jetter from **Sewer Equipment** has a tubular steel frame, corrosion-resistant pre-painted subassemblies, state-of-the-art controls, a strong hose reel, high-quality diesel engine and the Mongoose Run Dry Pump. **877/735-4640; www.mongoosejetters.com.**



US JETTING 4018

The **4018** trailer jetter from **US Jetting** is available with a powder-coated or galvanized frame, as well as aluminum components such as fenders, toolboxes, antifreeze tanks and fuel tanks. The 4,000 psi/18 gpm unit has a true run-dry pump with a stainless steel fluid end and triplex plungers that are easy to maintain and service. A HATZ Tier 4 Final four-cylinder diesel engine is fuel-efficient, lightweight and generates a high amount of power. **800/538-8464; www.usjetting.com.**

VAC-CON HOT SHOT

The **Hot Shot** high-pressure water jet machine from **Vac-Con** is designed for removing stones, bottles, cans, grease, sludge and other debris from sanitary



sewer and/or storm drainlines. Engineered for one-person operation, all high-pressure water and hose reel controls are located at the front of the machine for ease of operation and increased safety. Models are available with 1,000- and 1,600-gallon water tanks. Options include variable flow, articulating hose reel, polyethylene water tanks, 30 gpm at 3,000 psi water pump system, auxiliary engine or hydrostatic drive, cold weather recirculation system, side-mounted toolboxes, air purge system, hose footage counter, arrow board, strobe lights, inspector cam, high-pressure spray bar, hose rewind guide, 600 psi hand-gun system with 25 feet of hose and a selection of nozzles. **855/336-2962; www.vac-con.com.**

VAC-TRON EQUIPMENT MC SERIES

MC Series sewer jetters from **Vac-Tron Equipment** combine high cfm vacuum with jetting capabilities. They come with a Cat jetter pump rated at 2,000 psi at 15 gpm, and are recommended for cleaning lateral lines up to 12 inches in diameter. They come with 300 feet of 1/2-inch jetter hose with an electric hose reel. Options include a hydraulic boom or strong arm to maximize job performance by helping to reduce work fatigue that can sometimes occur from using a manually controlled vacuum hose. It is available either trailer mounted or truck mounted for mobility on the job site. **888/822-8766; www.vactron.com.**



VECTOR MANUFACTURING RAMJET 850 SERIES

The **RamJet 850 Series** truck jetter from **Vactor Manufacturing** has a choice of front or rear hose reel locations. Equipped with a Jet Rodder water pump, the jetter effectively breaks up blockages in sanitary lines, flushes out debris and scours sewer lines. Park-N-Clean technology allows the operator to park near the manhole and start cleaning with minimal setup time. The standard front hose reel has a capacity of 800 feet of 1-inch hose and can telescope up to 15 inches forward and rotate up to 270 degrees. The heated aluminum enclosure keeps the pump and plumbing covered and protected at all times. The standard rear hose reel has a capacity of 700 feet of 1-inch hose and can rotate a total of 180 degrees — 90 degrees to curbside and 90 degrees to street side. An optional integral aluminum rear shroud provides quick setup and offers cold weather protection. It offers flow of 0 to 80 gpm at a variable pressure up to 2,500 psi at the hose reel. **800/627-3171; www.vactor.com.**

VACUUM TRUCKS/PUMPS/ACCESSORIES

AMTHOR INTERNATIONAL MATADOR

The 4,000-gallon aluminum **Matador** code or non-code septic/grease vacuum tank from **Amthor International** comes standard with a 5/16-inch-thick side shell and floor, full head baffles and no external rings. It is available as a dumping tank with or without full-opening rear doors, as well as with off-road construction options for various applications. Various pump models



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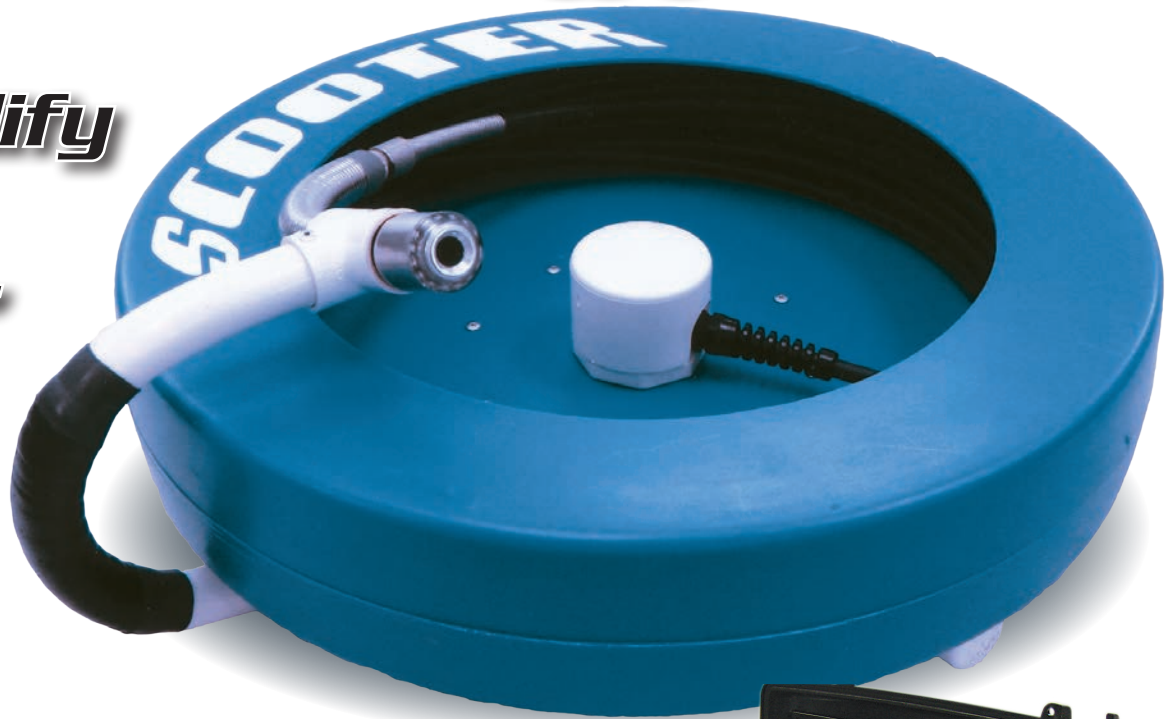
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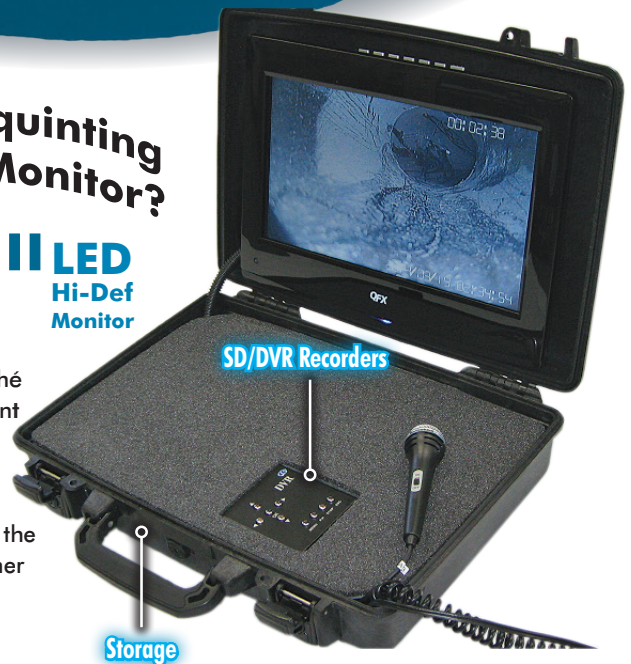
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FRUITLAND MANUFACTURING RCF870

The RCF870 vacuum pump from **Fruitland Manufacturing** is available in clockwise and counterclockwise rotations with top- and side-mount four-way valve locations. The pump is available with hydraulic, angle (gearbox) and belt-drive options. It can be mounted on all Eliminator-style packages. It is a true 4-inch pump with 4-inch pipe connections producing 512 cfm and weighing 575 pounds. It is fan forced air-cooled with an available air injection cooling system (VACS) for true continuous duty at higher vacuum levels. It includes an integral oil reservoir with low-consumption oil pump, an integral final filter and vane wear test ports. 800/663-9003; www.fruitlandmanufacturing.com.



HAMMELMANN CORP. HDP-196

The HDP-196 sewer jetter pump from **Hammelmann Corp.** is suited for dirty water applications. It offers flow up to 160 gpm and pressures of 3,200 psi, optimum space utilization and an integral reduction gear. Adaptability provides installation options, such as horizontal or vertical models, a reversible pump head, central or side suction connection, discharge connections on both sides, left- or right-hand drive shaft, and operation at any angle. The water end is suitable for recycled water. The pump's durability comes from high-grade solid ceramic plungers, wear-resistant valve seats, a low-flow velocity over suction and discharge valves, a packing seal that sits within rust-resistant stainless steel sleeves, a slow plunger speed, an industrial drive end specifically designed for continuous duty, a pressurized oil lubrication system, and clockwise or counterclockwise rotation. 800/783-4935; www.hammelmann.com.

HANNAY REELS N700 SERIES

Lightweight, compact N700 Series spring-rewind hose reels from **Hannay Reels** are ideal for lubrication, washdown, high-pressure and general industry applications. They have a narrow frame and compact mounting base, along with non-sparking ratchet assembly and a declutching arbor in order to prevent damage from reverse winding. They can handle standard pressures from 3,000 to 10,000 psi upon request and temperatures from minus 60 to 250 degrees F. The low-maintenance reels are built to customer specs in about a week. 518/797-3791; www.hannay.com.



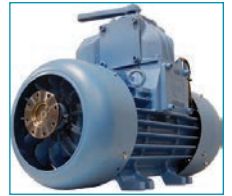
IMPERIAL INDUSTRIES VAC3000

VAC3000 trucks from **Imperial Industries** are ASME-certified 407/412 steel DOT units with capacities of 3,200 and 3,600 gallons. Choose either a blower system (National Vacuum Equipment 4310 or Hibon 820) or a vacuum system (Fruitland, Moro or Wittig). The units feature three rollover bars, bolt-on aluminum hose trays, 4-inch riser intake, 6-inch

discharge, full-opening rear door, three-stage hoist assembly and a complete hydraulically controlled system. 800/558-2945; www.imperialind.com.

MORO USA AC5

The AC5 fan-cooled vacuum pump from **Moro USA** is a continuous-duty vacuum pump for tough industrial applications. It is capable of a continuous vacuum of 22 inches Hg with a free flow rate of 460 cfm, capable of pumping nonvolatile liquids and sludge from long distances. The suggested tank size is 2,000 to 6,000 gallons. It includes an integrated check valve, changeover valve, automatic oiling system, industrial-duty bearings, Viton seals and high-flow-rate asbestos-free spark-proof vanes. It doesn't require a liquid cooling system. Dual cooling fans keep it operating efficiently, even in rigorous conditions. It includes 4-inch flange connections and is available in preassembled pump packages complete with stand, secondary, oil catch and drive, gearbox, hydraulic, and in-pulley or engine-driven models. 800/383-6304; www.morousa.com.



NATIONAL VACUUM EQUIPMENT CHALLENGER 5314

The **Challenger 5314** high-vacuum blower from **National Vacuum Equipment** is a 1,500 cfm high-vacuum blower designed for continuous duty at maximum vacuum. It is available in a ready-to-install hydraulic or belt-drive package using corrosion-resistant stainless steel internal components. Available packages include silencers, check valves, moisture trap, cyclone, four-way vacuum/pressure changeover valve and a powder-coated skid. 800/253-5500; www.natvac.com.

PCI MFG. SOLUTIONS 130-BBL VACUUM TRANSPORT TRAILER

The 130-BBL Vacuum Transport Trailer from **PCI Mfg. Solutions** allows easy access from the ground to the upper walkway. The standard vacuum trailer includes three-point suspension, two-speed crank landing legs and 1/4-inch ASTM A36, sub-arc'd steel barrel and offers customization options such as plugs, toolboxes and suspension. Each barrel is fully gusseted and padded to withstand the rigors of operation on- and off-road. The long wedge sump offers room for 4- and 6-inch loading lines, ensuring the flexibility users need in a vacuum transport. Every trailer leaves the facility ready to use, complete with reflective DOT tape, LED lights and radial tires. 800/256-5633; www.pcmfgsolutions.com.



PRESVAC LIQUID VAC

The **Presvac Liquid Vac** with full-opening door and dumping tank can be configured to suit a broad range of applications, including collection and transport of hazardous and nonhazardous liquids, slurries and sludges, septic system cleaning, line jetting and material transfer. A full-opening door and large tipping angle make tank clean-out easier. Vacuum pump options include full vacuum of 28 inches Hg,

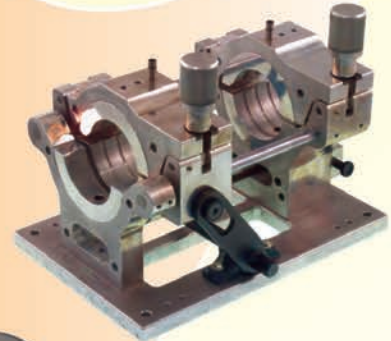


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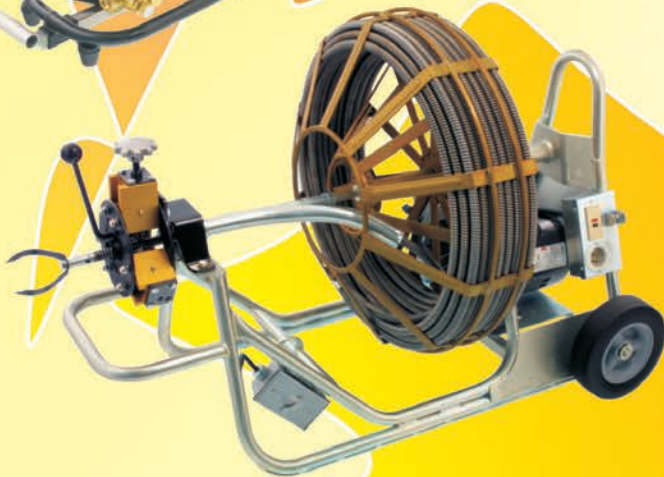
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and 200 to 1,500 cfm. Tank volumes are available in 500 to 5,500 gallons. Tank material options include carbon steel, or 304, 316 or 316 high-polish stainless steel. Options include a water pump, transfer pump, custom hose trays and toolboxes, and heated valves. 800/387-7763; www.presvac.com.

SUPER PRODUCTS CAMEL 1200

The Camel 1200 sewer and catch basin cleaner with wastewater recycling from Super Products has a six-stage water filtration process that enables effective sewer cleaning action without the need for freshwater. The key to the system's effectiveness is the ejector plate, which serves as a full-body primary filter that thoroughly separates solids from liquids collected in the debris body. The collected water then travels through a series of filters, strainers and a separator that removes particles from the liquid using centrifugal action. By using the wastewater recycling system, sewer cleaning workers can not only save thousands of gallons of water during an average workweek, they'll also experience longer on-site performance as there won't be a need to halt production to replenish the freshwater supply. 800/837-9711; www.superproductsllc.com.



WALLENSTEIN VACUUM PUMPS - ELMIRA MACHINE INDUSTRIES 750 SERIES

A larger off-load valve boosts performance on 750 Series pumps from Wallenstein Vacuum Pumps - Elmira Machine Industries. They have 422 cfm airflow at 1,200 rpm and vacuum up to 28 inches Hg. Cooling options include air cooling (fan), liquid cooling (jacketed housing) or dual cooling, where air injection is combined with liquid cooling. Lubrication options include a shaft-driven oil pump or an automatic air pressure system that force-lubricates with no moving parts. They have thick and wide vanes for longer service life and lower maintenance costs. A standard flush port allows routine internal cleaning. A quick-access endplate allows easy internal inspection with no bearings to pull. 800/801-6663; www.wallenstein.com.

WESTMOOR CONDE HD

Conde HD vacuum/pressure pumps from Westmoor are available in sizes up to 230 cfm. They incorporate a slide valve/change-over valve, which is compact, low profile and works easily. Automatic oilers never need adjustment. Pumps can be driven by a variety of power sources including a gas or diesel engine package, PTO, right-angle drive or a hydraulic pump. They are double shafted and can easily be set up for either clockwise or counterclockwise rotation. 800/367-0972; www.westmoorltd.com. c



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By Craig Mandli

COMPACT, LIGHTWEIGHT JETTER SAVES CONTRACTOR TIME, TROUBLE AND MONEY

PROBLEM: Craig Casteen of Casteen Plumbing & Repair in North Carolina faced working in a residential crawl space that didn't allow much room to maneuver. He needed a jetting unit compact enough to get into tight areas, and powerful enough to dislodge blockages from small lines.



SOLUTION: Casteen chose the JM-1000 Mini-Jet from General Pipe Cleaners.

The compact, lightweight, electric-powered unit lets him clear grease, sand and ice from small, 1 1/2- to 3-inch lines up to 50 feet long. It provides 1,500 psi of cleaning power. Pulse technology helps slide the hose around tight bends and down lines. It breaks the initial tension between the hose surface and pipe walls, increasing cleaning power. The JM-1000 weighs 23 pounds for easy carrying and is convenient for jobs completed by one person.

RESULT: Casteen used the unit in the crawl space to quickly clear the blockage. 800/245-6200; www.drainbrain.com.

CAMERA SYSTEM ALLOWS COMPANY TO EXPAND SERVICES AND OPERATE MORE EFFICIENTLY

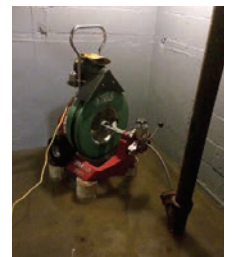


PROBLEM: C.A. Taciak & Sons in Towson, Maryland, has always been on the lookout for solutions to understand how existing pipes are run on a job site, and how to more easily locate drainline blockages to help avoid ruptured pipes, excessive property damage and wasted service time. In the company's early days they had to strap sondes to cables and send them down lines, using locators to find obstructions. They wanted a less-complicated alternative.

SOLUTION: For owner Frank Taciak, the solution is the RIDGID SeeSnake rM200 camera system paired with the CS65 digital reporting monitor for on-site reporting. The rM200 is capable of inspecting lines up to 200 feet in length and 1 1/2 to 6 inches in diameter, and has an integrated transport system for easy portability. The CS65 has one-touch image recording for fast, efficient documentation of inspections.

RESULT: The camera system and being able to digitally record inspections has enabled Taciak to be more efficient and strengthen customer relationships. Inspection services allow Taciak to build trust by including visual proof with any service recommendation. 800/769-7743; www.ridgid.com.

TECHNICIAN QUICKLY SOLVES BASEMENT BACKUP ISSUE



PROBLEM: A residential customer in Indianapolis, Indiana, was experiencing a catastrophic backup that caused several inches of sewage in the basement of his home. Raw sewage had backed up into the home caused by paper and minor root intrusion. The homeowner called Hamm and Sons, and their technician, Dave Depew, was dispatched to help open the blockage.

SOLUTION: Depew quickly determined that they would need to build up a platform to keep his 1065 drain cleaner from Spartan Tool out of the water to avoid electrical shock hazards. After locating the 4-inch clean-out in the floor, he quickly got to work and cleared the blockage. The 1065 had more than enough cable and power to quickly eliminate the paper and roots that had caused the backup, allowing the flooding condition to subside.

RESULT: While the homeowner had a major cleanup project ahead of him, he was thrilled that Depew was able to come out so quickly and remedy the problem. 800/435-3866; www.spartantool.com.

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The new LISY 3.2 was designed to work with the new **3-D GeoSense® system** from IBAK. The new 3-D GeoSense® sensor tracks the movement of the camera as it travels through the lateral, capturing distance, position and depth in three dimensional space. This data is captured and displayed by your data logging software. Finally, there is no more guessing. You no longer have to track the system above ground with a locator, simply conduct your inspection and collect the positional data!

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The LISY 3.2 is the latest evolution in the industry's most advanced lateral launching system. Trusted by most major contractors and large cities throughout the world, the LISY has always provided you with superior production capabilities. The entire drive system was re-engineered with a larger drive motor and more efficient cable friction wheels to increase the launch speed by up to **4 times faster** than other lateral launchers!

With faster launch speeds, shorter more flexible front connector options, and smaller launch cameras, the LISY 3.2 is perfect for your more demanding projects, **including reverse-launches**.



PRODUCT SPOTLIGHT

Modular camera system allows for small-diameter pipe inspections

By Kyle Rogers

EasyCAM's new M5200 inspection camera has many of the key features of the company's other models, namely a modular design for easier repair and less downtime. The main difference — and advantage — on the M5200 is its smaller size, which allows it to negotiate pipes as small as 2 inches in diameter.

"It's kind of our all-in-one model," says Rick Joy, company owner. "It's meant to be a camera that can do anything residential, from 2-inch to 6-inch pipe."

With a camera head of 1 1/8 inches, it's about 3/4 the size of EasyCAM's larger-sized cameras, Joy says. It weighs 33 pounds.

"It's basically the same machine we've had since 2007 except a little bit smaller," he says. "Our other cameras can handle 3-inch pipe, but you get into 2-inch and they can't negotiate turns. They're too big. That's why we came up with a mid-sized option, the M5200. It can negotiate turns in 2-inch pipe."

The M5200 comes with features that are the standard on EasyCAM's entire product line: a color camera with sapphire lens, 200 feet of heavy-duty pushrod, 512 Hz transmitter, HD daylight-readable monitor with built-in anti-glare film and sun shield, 12-volt battery operation that provides up to 12 hours of continuous use, and powder-coated aircraft-aluminum frame.

The camera head, transmitter, spring and pushrod are separate components. It's that modularity that is at the core of the design of

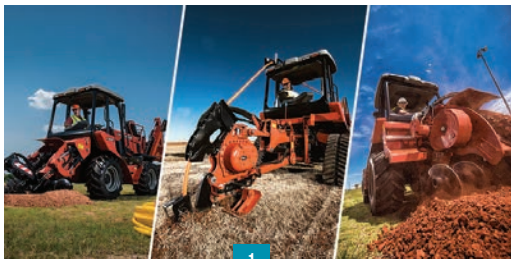
EasyCAM's cameras, including the new M5200 model.

"Being a plumber of 33 years when I decided to get into this, I designed the cameras from a plumber's perspective," Joy says. "I designed them with plug-and-play features, so if there's a problem, we simply send the

needed part to the user. They use simple hand tools and do their own repair, which eliminates the length of time and the labor fees there are when you have to send a camera in to fix it. The entire camera, including the electronics, can be replaced by the owner."

The monitor can also be easily swapped out if there's a problem.

"Some machines will only work with the monitor that comes with them because the monitor has a power pack that supplies power for the entire unit. But I designed EasyCAM cameras to be stand-alone units," Joy says. "Of course they come with a monitor that records and does voice-over and everything you need it to do, but if the operator happens to break the monitor or it gets lost, you can finish the job with any type of off-the-shelf monitor. It will also work with a standard laptop." 239/260-2056; www.easycamllc.com.



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1 DITCH WITCH TURBOCHARGED UTILITY TRACTORS

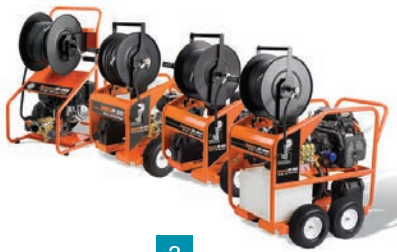
RT105, RT125 and RT125 Quad utility tractors from Ditch Witch are designed to improve power, efficiency and comfort. Tractors are powered by 107 and 121 hp turbocharged, Tier 4 Deutz engines and feature standard four-wheel-drive systems. The RT125 Quad is also equipped with a ground drive system, which senses load conditions and adjusts automatically. Redesigned workstations are equipped with 5-inch color LCD instrument displays, tilt steering columns and increased legroom. 800/654-6481; www.ditchwitch.com.



2

2 KMT STREAMLINE SERIES 90,000 PSI PUMPS

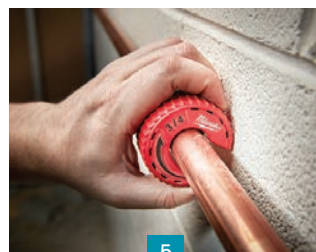
The KMT Streamline PRO-III Series of pumps feature 125 and 60 hp waterjet pumps with operating pressure of 90,000 psi, capable of cutting thick metals as well as intricate tolerances. Features include metal-to-metal seal design and metal canister for protecting UHP seals. The PRO-III 125 hp 90,000 psi pump is available with dual 0.0011 orifice cutting heads and the 0.016 cutting orifice. 800/826-9274; www.kmtwaterjet.com.



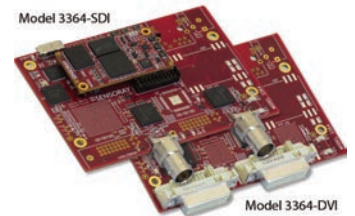
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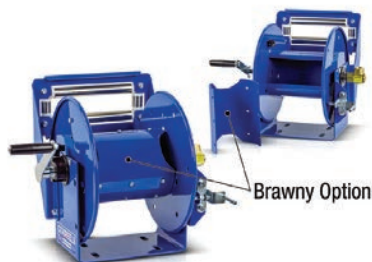
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3 GENERAL PIPE CLEANERS PUNCTURE-PROOF TIRES
Puncture-proof tires for General Pipe Cleaners Jet Set water jets are designed to increase durability in the field. Flat-free foam core tires come standard on the JM-2,900; 3,000; 3,055; and 3,080. **800/245-6200; www.drainbrain.com.**

4 KAMAT KAMAJET MOBILE HIGH-PRESSURE UNIT
The KAMAJET 27/2800 mobile high-pressure unit from KAMAT utilizes a high-pressure plunger pump capable of 40,610 psi at 7.13 gpm. The pump also features a full lift safety valve for the automatic release of excess pressure, stainless steel pump head and conversion kit, and low-noise-reduction gearbox. The pump is powered by a 218 hp, 5.1L Tier 4 Volvo Penta diesel engine. The tandem-axle trailer contains all components within a solid frame, allowing for crane transport via four lifting eyes. Covers and maintenance hatches provide access to all controls and components. All functions are performed on the Easy Control module. Optional Wi-Fi integration allows for online access to the control system. **www.kamat.de.**

5 MILWAUKEE TOOL CLOSE QUARTERS TUBING CUTTERS
Close Quarters Tubing Cutters from Milwaukee Tool feature a small swing radius and directional grip to cut copper tubing in tight spaces. Available in 1/2-, 3/4- and 1-inch sizes, cutters can cut through Type M, L and K copper tubing. Additional features include chrome rollers for rust protection and weep holes to drain water from the tool. **800/729-3878; www.milwaukeetool.com.**

6 SENSORAY MODEL 3364 USB CAPTURE DEVICE
The Sensoray Model 3364 USB 3.0 video capture device is available in SDI and DVI versions. It captures uncompressed SD/HD video in resolutions up to 1080p60 and uses H.264 video compression for inputs up to 1080p30 with low latency. The device is capable of capturing uncompressed video at full frame rates while simultaneously sending uncompressed and compressed streams to the host. It does not require a device-specific driver or an internal

power supply and is controlled by using the video APIs DirectShow or Video4Linux. **503/684-8005; www.sensoray.com.**

7 FORD METER BOX REPAIR CLAMP KIT
The Emergency Repair Clamp Kit from Ford Meter Box provides flexible pipe repair for pipe diameters from 4.5 to 33.74 inches. The kit can be restocked and contains various-sized stainless steel bands with EPDM or Bruna-N gaskets, O.D. tape, a repair clamp sizing chart and an O.D. chart. **800/826-3487; www.fordmeterbox.com.**

8 BRAWNY OPTION FOR COXREELS 100 SERIES
The Brawny option for COXREELS 100 Series reels adds strength to the reel drum, minimizing potential damage under increased pressure or pulsing pressure use. The Brawny option is available for 8-, 12.5- and 18-inch drum widths. **800/269-7335; www.coxreels.com.**

9 ELECTRIC EEL MODEL CT COUNTER-TOP DRAIN CLEANING MACHINE
The Electric Eel Model CT features unique variable speed motor control that gives the operator maximum cable control and exceptional cleaning power from 75 to 350 RPM with constant torque. The counter-top drain cleaner is professionally engineered to clean 3/4- to 2-1/2-inch-diameter drain lines up to 50 feet. The 1/5 HP, 90 Volt DC motor provides quiet, powerful and dependable operation with 1/4-, 5/16-, and 3/8-inch cable. The standard unit features a hand-tighten Jacobs Chuck. The CT is also available with a 2-way auto cable feed that keeps hands off rotating cable as it advances and retrieves with the push of a lever. Cable guide hose eliminates cable whipping and helps keep work areas clean while the heavy-duty housing protects the motor and internal wiring. The stainless steel cable drum will not rust and resists denting, and a heavy-duty steel tubular frame allows for two-position vertical or horizontal operation. Built-in GFCI on the 20-foot line cord protects against electrical shock, and an air operated foot switch provides ease of operation. **800/833-1212; www.electriceel.com. c**

Signet Enterprises launches Creative Polymer Solutions

Signet Enterprises, a private investment firm, launched Creative Polymer Solutions (CPS) in Irondale, Alabama. CPS specializes in polyurethane and polyurea products used for the prevention of corrosion and treatment of corroded surfaces. The company will share a facility with another Signet company, Sprayroq Inc.

Reed Manufacturing Co. names sales director

Reed Manufacturing Company promoted Tim Donohue to national sales director. Donohue joined Reed in 2008 and has 25 years of industry experience.



Tim Donohue

Luber-finer launches online training program

Luber-finer launched the Luber-finer University, an online training program for distributors and sales associates. The training tool can be accessed from any internet-connected device and features 15- to 30-minute units to educate users on the science of filtration and the company's products.

Insight Vision names business development manager

Insight Vision Cameras hired Jim Sell as business development manager. Sell has 10 years of experience in CCTV equipment sales and service.

Trenchless industry veteran Sam Gardiner passes away

Longtime wastewater and trenchless rehabilitation industry fixture Sam Gardiner passed away in Peru, Illinois, on Oct. 14, 2016. Sam spent his career in the industry, challenging the status quo and offering a unique perspective. Always an innovator, he took great pride in teaching his tips and tricks to others, often paired with witty commentary. Sam crossed paths with many in the industry at the annual WWETT show, and the family plans to hold a celebration of his life during the upcoming show. To stay in contact for additional information or to share stories, contact Matthew Gardiner at mgardiner@aroldcompanies.com.



Sam Gardiner

TRIC Tools provides training in Tel Aviv

TRIC Tools Inc. sent Gennady Belous to Tel Aviv, Israel, to provide additional training to Israeli Meiri and Sons Ltd. Belous is a certified trainer from Z-Techno, a Russian distributor who has been TRIC's most successful pipe bursting distributor for the last eight years.



GPS Insight ranks on Inc. 5000 list

GPS Insight was ranked No. 3,668 on *Inc. Magazine's* 500/5000 list. The *Inc. 5000* list recognizes the 5,000 fastest-growing companies in the United States. GPS Insight has ranked on the *Inc. 5000* for the last seven years.



Carolyn Rehling

SkyBitz names VP of sales

Carolyn Rehling was named vice president of sales for SkyBitz Local Fleets division. Rehling has 20 years of executive sales experience. **C**

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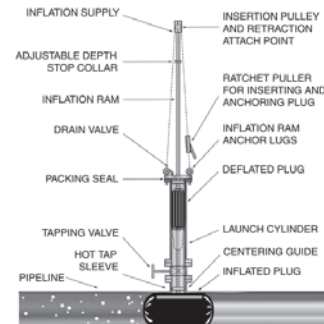
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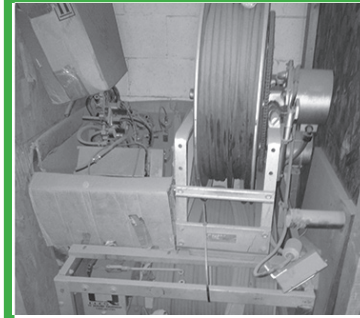


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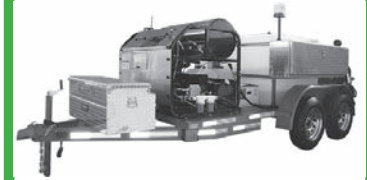


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