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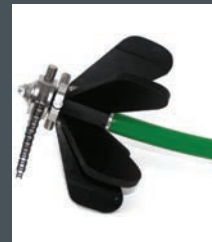
FOR DRAIN AND PIPE CLEANING,  
INSPECTION AND REHABILITATION  
PROFESSIONALS

## SOLE PROVIDER

DANIEL FANTI PLANS TO GROW HIS BUSINESS,  
BUT FOR NOW HE'S PERFORMING SUCCESSFULLY  
AS A ONE-MAN OPERATION PROVIDING DRAIN  
SERVICES IN ORANGE COUNTY / 42

PRODUCT FOCUS

CHEMICAL AND MECHANICAL ROOT CONTROL / 52







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18 YEARS



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28 YEARS



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# "I MADE MY MONEY BACK ON THE FIRST JOB, AND THEN SOME. THAT'S NO JOKE."

## PROfile

### NuFlow Certified Contractor

In his first year as a NuFlow Certified Contractor, Jeff Lane generated nearly \$1 million dollars in lining revenue.

Jeff became a NuFlow Certified Contractor in 2019 after a big company called because of sewer backups. Machinery throughout the warehouse made busting out the concrete floor impossible.

**"NuFlow gave me the words of wisdom I needed. I made my money back on the first job, and then some. That's no joke."**

Jeff continues to invest in new equipment and grow his team.

**"Lining is a huge part of my business. It has carried me during this pandemic. I just invested in NuCure CCUV and plan to have three lining crews by this time next year."**

NuFlow's training and support has been the most valuable part of Jeff's success in building his lining business.

**Jeff's advice to his fellow plumbers?**  
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**ON THE COVER** // Daniel Fanti turned his passion for drains into a successful one-man business when he started Jetters 'N' Drains Plumbing in January 2019. His previous employer and mentor supported him, encouraging him to get his license and go out on his own. Fanti is known in his area of California for his "drain clearing special" and inspection services, and subsequently gets most of his business through referrals. (Photography by Matt Dayka)



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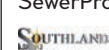


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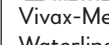
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# Cleaner

FOR DRAIN AND PIPE CLEANING, INSPECTION AND REHABILITATION PROFESSIONALS

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Email me with comments, questions or opinions at [editor@cleaner.com](mailto:editor@cleaner.com)

## GOING IT ALONE

A one-man show has different challenges than a big company, but the goals remain the same

**W**HEN I GET A COMPANY NAME PASSED ALONG to me as a suggestion for a *Cleaner* profile, I call the owner for a quick chat to find out more about their business. I like to hear about how they started out, what kind of jobs the company is doing and how things are going.

When I call a company that is a one-man operation, sometimes the owner will say something like, “Well it’s just me; I don’t know if anyone will be interested in hearing my story.”

Don’t misunderstand — they are proud of their companies, but humbly think a one-man show isn’t that interesting.

I disagree. I’ve had some great chats with solo operators. Sometimes I have to call back after hours because they’re too busy to talk with me during the workday, which is understandable, but they never have a shortage of jobs to talk about once we connect.

I think the drain cleaner or plumber who pays their dues with another company or two and then decides to go out on their own makes a great story; and if they remain a one-man show for a while, or even forever, that’s no knock on them. There are a ton of reasons to not expand, or at least to wait to hire. Sometimes it’s timing, or profits need to be set aside for equipment purchases, or their standards are just so high, they want to take care of every job themselves to know it’s done right.

When you are the only one who works for your business, everything falls on you: your company’s reputation, marketing yourself, answering calls, explaining the technology to customers, booking jobs, and maybe even the bookkeeping is all on your plate. It’s definitely not easy.

I’m not downplaying the difficulties on the other side of the coin. Large operations have other challenges. Keeping track of employees, trucks and equipment isn’t something a sole proprietor has to worry about. But whether you have 50 employees or none, running a business is a huge responsibility.

When those solo operators wonder if anyone is interested in their stories, I hope your response as a reader is, “Of course!” Maybe you were once that guy, and now have several crews out there working for you, or you are that guy now and like to hear about another entrepreneur out in the trenches with you. Maybe you’re currently someone’s employee who feels ready to go out on your own and can take inspiration from the guys who have made that happen.

Whatever your position or the size of your company, I hope you make the most of it. A small operation can offer things a big company can’t, and vice versa. But wherever you are today, the goal remains the same: providing great service for your customers and earning a profit. That can be done at any size.

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

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## SERVICE VEHICLES

### The Comforts of a Cargo Van

In this online exclusive, one contractor explains some of the advantages they've realized by opting for a cargo van over a box truck.

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## MOTIVATION

### Remembering the Difference You Can Make in People's Lives

Plumbing and drain cleaning can be thankless work. There are days, sometimes weeks even, when nothing seems to go right. Complaining customers, disgruntled employees, rising insurance costs. If the day-to-day grind is getting you down, perhaps this story from regular contributor Anja Smith can help re-energize you. It's important to recognize the impact you can have on your customers.

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## OVERHEARD ONLINE

"We think our customers are focused on the outcome of working with us. While it's true ... that is not all they're looking for. And it's not even the first thing they're looking for when deciding which company to call."

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### NASSCO Updates Pipe Lining Guidelines

The latest guidelines take into account a study conducted by Louisiana Tech University's Trenchless Technology Center into the safety of emissions resulting from styrene-based resins and the steam-curing process. Check out this online exclusive if you need to catch up on the latest information. >> [cleaner.com/featured](https://cleaner.com/featured)

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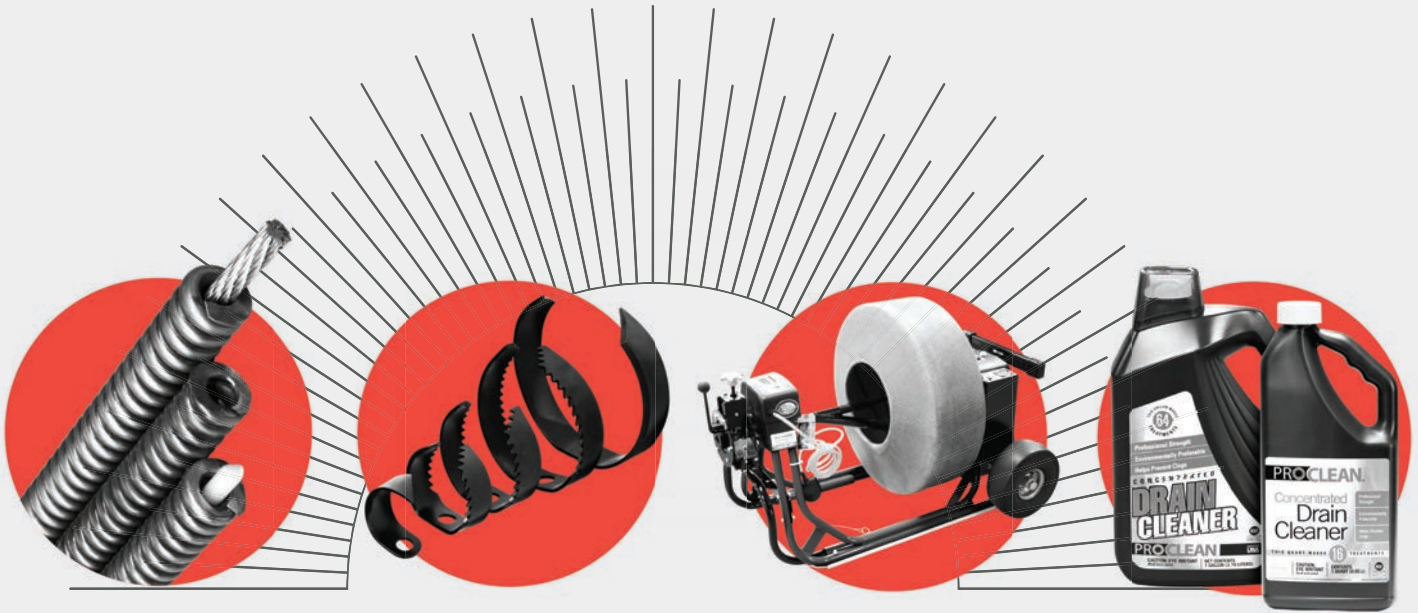
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# ENGINEERED FOR SUCCESS

FLORIDA CONTRACTOR TAKES A TACTICAL, HIGH-TECH  
APPROACH TO TRENCHLESS PIPELINE REHAB

// By Ken Wysocky



Engineered Lining Systems prides itself on taking a decidedly technology-centric approach to trenchless pipeline rehabilitation. And few things epitomize that philosophy more than the company's nearly \$1 million investment in a German-made pipe lining system.

Developed by IBG HydroTech, the system is designed to line pipes from 6 to 72 inches in diameter. It uses a computer-controlled curing process that uses a UV light “train” that can cure up to 7 feet of glass-reinforced plastic liners per minute.

“It’s the most powerful curing truck in the United States right now. It’s a very complex system,” says Don Arch, owner and president of the Jacksonville-based company. “And the return on investment so far has been tenfold.”

The investment in the IBG system reflects a key strategy that has contributed greatly to the company's growth to \$6 million yearly revenue: Be the first to invest in advanced, productivity- and profitability-enhancing equipment and technologies.

That’s an expensive philosophy in terms of upfront costs. But on the other hand, a six- or seven-figure price tag also creates a high barrier to market entry by competitors, Arch says.

« Engineered Lining Systems Project Manager James Macko (left) and owner and president Don Arch stand in front of the latest addition to the ELS trenchless installation fleet. The truck, built out by Omega Liner Company, contains an IBG Pro UV curing system.





Photography by Ken McCray

“We pride ourselves on being first to market with new technology. It keeps competitors at bay who don’t want to or can’t afford to make those kinds of investments.

“In fact, we end up doing a fair amount of UV-curing for other companies because they also realize it’s the best technology for their customer, but they just can’t pull the trigger on such a significant investment.”

### A STRATEGIC NICHE

Since the company’s inception in 2004, Engineered Lining Systems has also embraced another strategy, similar to the old hit-it-where-they-ain’t baseball philosophy: Develop a base of clients that require more specialized and technical trenchless solutions that other companies aren’t interested in tackling.

As such, the company serves a wide range of customers in somewhat niche markets, including nuclear power plants, power utilities, airports, military bases and hospitals, Arch says.

“We try to go into areas where there’s not a lot of competition. We pride ourselves on doing projects that require a lot of logistics and working with companies that require a great safety record.



**Engineered Lining Systems**  
JACKSONVILLE, FLORIDA

<b>OWNER</b>	Don Arch
<b>FOUNDED</b>	2004
<b>EMPLOYEES</b>	25
<b>SERVICES</b>	Trenchless pipeline repair, pipe bursting, grouting, smoke testing, manhole restoration
<b>SERVICE AREA</b>	Southeastern United States
<b>WEBSITE</b>	<a href="http://www.engineeredlining.com">www.engineeredlining.com</a>

“Instead of going after competitive, low-bid projects, we try to focus on negotiated projects for customers that are looking for a good, long-term solution, not just putting a Band-Aid on a repair.



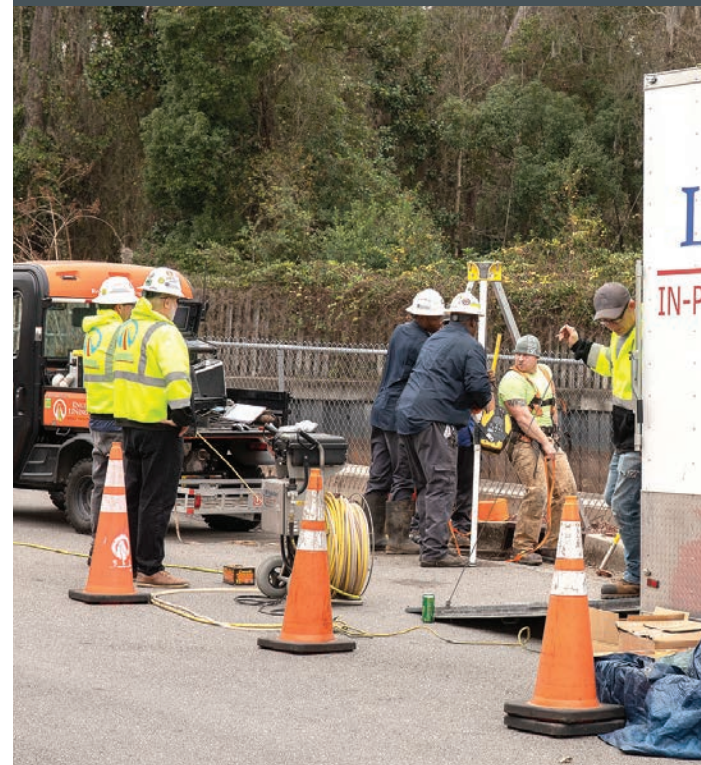


▲ Don Arch, Bernard Stafford and Buddy Blake (from left) check the video feed from a CUES Digital Universal Camera system before beginning an inspection.

“We also have a reputation for looking at projects, breaking them down with methodical analyses and making sure all stakeholders understand the risks involved,” he adds. “We’re good at looking at all the hurdles involved and coming up with well-researched solutions, which requires us to constantly keep a finger on the pulse of new technologies.”

After completing projects, ELS also strives to maintain business relationships via multiyear service agreements that emphasize long-term repairs and maintenance as opposed to random, one-off and very expensive emergency calls.

“Helping clients understand the cost of downtime from a piping failure is a conscious business model that we work under,” Arch



▲ Bernard Stafford and Devonte Rucker raise Josh Aker from a manhole after a visual pipe inspection.

▶ A crew member lowers a packer down to technician Bernard Stafford in a manhole.

says. Showing clients where they need to focus, say, five years down the road helps them develop budgets proactively rather than reacting to expensive surprises.

“Customers really do appreciate it. Progressive companies look at money spent as money saved and that’s the kind of customers we want.”

### LINERS FOR EVERYTHING

That approach also inspired the company’s name. “We wanted something that would tell the customer we’re not just showing up with an old pickup truck, throwing a liner in the ground and hoping for the best,” he says.

“And I say ‘we,’ I mean everyone. It’s a total team effort here. We’ve attracted world-class project managers and crews that have pushed the company to the next level. We get a lot of comments from customers about how knowledgeable our people are. To me, that means everything.”

The company also does pipe lining work for industrial and municipal clients as well as state departments of transportation. Its crews have lined sewers, culverts, electrical conduits and process-pipe systems.

One project involved lining a vacuum tube at a veteran’s hospital that’s used to send nuclear medicine from a lab to an operating room about half a mile away, like the tubes used at bank drive-through stations, Arch says.





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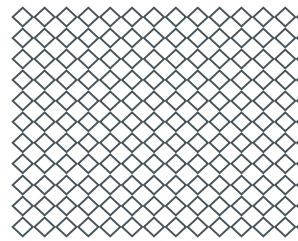
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◀ Buddy Blake and Kyle Strickland begin a centrifugal cast application for a catch basin rehab project at the Orange Park Country Club.



### PROGRESSIVE CHOICES

After graduating from high school, Arch spent about 20 years in the plumbing and mechanical arena before establishing ELS with a business partner who's no longer with the company. He opted to get into trenchless technology because it seemed like a much better solution to common problems plumbers face — particularly leaking water pipes in concrete slabs, which are quite common in Florida.

The company's first investment was an epoxy lining system for smaller-diameter pipes. The company then expanded into work on military bases scattered throughout the area, he says.

"That's where we really started to cut our teeth on lining large-diameter pipes."

A pivotal moment occurred while Arch attended a Pumper & Cleaner Environmental Expo International trade show (now called the Water & Wastewater Equipment, Treatment & Transport Show) in 2008, where he ran across emerging pipe lining technology from Europe.

"We decided we wanted to be ahead of the curve — be progressive about how we put these projects together," he says. "UV-cured pipe lining was definitely a step in the right direction.

"You get better quality control and with military and airfield clients, that was very important — they like documented quality control. So we started making investments in equipment and it's paid off very well for us."

### HIGH-TECH EQUIPMENT INVESTMENTS

ELS has also invested in other UV-cured lining systems. It owns a Prokasro Services USA system, housed in a 2006 International 4300 D truck with a 30-foot-long box body made by Supreme Corp. It can line pipes from 6 to 48 inches in diameter at speeds up to 5 feet per minute.

The company uses liners made by Omega Liner, SAERTEX multiCOM, IMPREG and APEX CIPP Solutions.

For cleaning pipelines, the company has invested in a GapVax combination

## THE QUICK UV CURE

In 2019, a 480-foot long, 42-inch-diameter culvert that runs under a runway at a Florida airport needed repairs. But airport officials were concerned about the cost and major disruption of shutting down a major runway.

Engineered Lining Services (ELS) in Jacksonville provided a solution: Line the culvert with a UV-light-cured, glass-reinforced plastic liner.

The total cure time for the liner was just two hours and the total project time was about 14 hours — a vivid demonstration of the benefits of trenchless pipeline rehab technology.

"And flights were coming in as we worked," says Don Arch, owner and president of ELS.

To do the job, the company relied on a nearly \$1 million pipe lining system manufactured by Germany-based IBG HydroTech. The system can line pipes from 6 to 72 inches in diameter and utilizes a computer-controlled process that can cure liners up to 7 feet per minute via a light train outfitted with 400- to 1,500-watt bulbs.

The system is housed inside a 40-foot-long box body, made by Ohnsorg Truck Bodies, mounted on a 2018 Peterbilt 567 truck. Its sophisticated computers constantly monitor factors such as air pressure within the liner, curing speeds, air temperature inside the liner, the wattage outputs from the bulbs and so forth, Arch says.

One advantage with UV-curing is that crews can see inside the liner and spot abnormalities and imperfections before the curing process starts, courtesy of two cameras mounted on the light train. After the liner is inflated with a Gardner Denver blower system (600 cfm), technicians send the light train through with its lights off.

When technicians are sure the liner is properly positioned, with no wrinkles or other abnormalities or deformities, the light train passes through again, this time with its lights on. A computer controls its speed, based on factors such as the liner's diameter and thickness.

"It's the next leap forward in trenchless technology," Arch says. "When people see it, they're sold on it."

The faster curing speed is a game-changer, too, in terms of productivity and profitability.

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- ◀ Blake and Strickland check the centrifugal cast pattern in a catch basin.
- ✔ Blake connects a spray cast hose while Stafford pours geopolymers into the mixer.



“IT MAY SOUND WEIRD, BUT IT STILL GIVES ME GOOSE BUMPS WHEN I TALK TO PEOPLE ABOUT IT. I LOVE TALKING ABOUT IT AND I LOVE DOING WHAT I DO. I WAKE UP EVERY MORNING EXCITED ABOUT THE CHALLENGES AHEAD.”

**DON ARCH**

sewer vacuum truck, featuring a 2009 Sterling chassis, a 10-cubic-yard debris tanks, an Ingersoll Rand blower (5,000 cfm), an 80 gpm, 3,500 psi water pump and a 3,500-gallon water tank.

The company’s roster of equipment also includes a 2009 Chevrolet C5500 camera truck, outfitted by CUES with Ultra Shorty III and Steerable Pipe Ranger II pipeline inspection cameras; a Kubota RTV-X1100C all-terrain vehicle equipped by CUES with a digital universal camera; a 12-ton winch made by Hammerhead Trenchless; and Nozz-Teq Lumberjack root-cutting nozzles.

In the company’s plumbing and mechanical division, technicians rely on a SpeedyLight+ UV curing system. Made by SEWERTRONICS for 3- to 8-inch diameter pipe, it’s better at navigating lines with multiple bends. Other equipment includes Mini Miller and Maxi Miller drain cleaning/descaling and lateral-reinstatement machines from Picote Solutions; two CUES MPLUS+ push cameras for pipeline inspections; and a Picote Brush-Coating System for sealing pipes.

### FOCUS ON TRAINING

ELS also invests heavily in training, for both trenchless technologies and on-the-job safety, with the latter coordinated by an in-house safety director. Product manufacturers supply some of the equipment training, while other portions are handled in-house, Arch says.

Like so many others that need skilled labor, the company finds it difficult to find enough qualified employees. To remedy that, Arch is working with a handful of manufacturers to develop an internal apprenticeship program for pipe lining and other technologies, similar to the apprenticeship program he followed to become a plumber.

“I feel an apprenticeship still is the best way to learn and get hands-on training and mentoring,” he says. “We want to get new talent and grow, but there’s not a large pool of trained people. So I think we need to do it on our own. A very high caliber of training is critical to our success.”

Moreover, ongoing training helps to keep employees inspired and motivated. Advanced technology that relies on robotics and sophisticated computer programs — think robotic pipeline cameras and GIS mapping software, for example — also plays a role in attracting and retaining younger employees, Arch points out.

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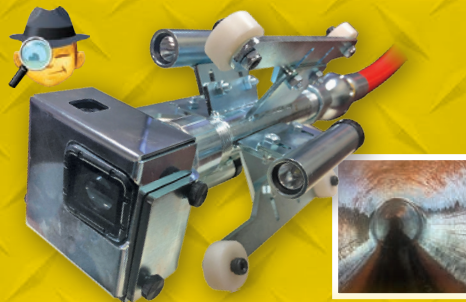
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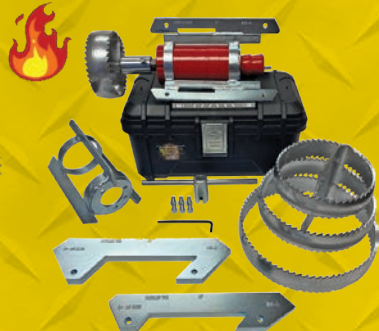
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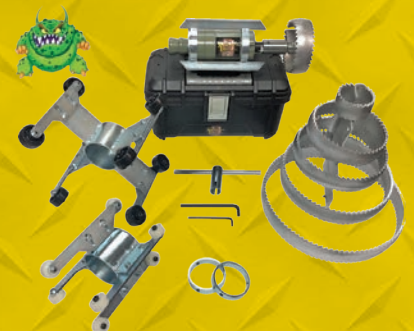
**SRRK-1H Super Red Hot Kit**

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**SRRK-1 Super Green Meanie Green Kit**

The round profile allows the cutter to enter sewer lines 4" and up. Motor handles flows from 40 - 80 GPM and pressures 2000 - 3000 PSI. Rated up to 235 ftlb. of torque, and 175 ftlb. of continuous torque. Kit comes with SRRK-1P Super Green Motor; 1" Saw Blade Hub; 6", 8", 10", 12" HD Concave Saw Blade; 6", 8" Cage Skid Single Size; Set Of 10" & 12" Fins. Motor fits Green wheeled skids you may have.



**SRRK-4-15W Super Green Meanie Citizen Kit**

Large Range Kit gives you saws and skids for 4" to 15" pipe sizes. Cutter handles flows 40 - 80 GPM and pressures 2000 - 3000 PSI. Rated up to maximum 235 ftlb. of torque, and 175 ftlb. of continuous torque. Kit comes with SRRK-1P Super Green Motor; 1" Saw Blade Hub; 4", 6", 8", 10", 12", 15" HD Concave Saw Blade; Set of 4" Steel Rings; 6" Cage Skid; 8"-10" Adjustable Wheel Skid; 12"-15" Adjustable Wheel Skid; Allen Wrench and Screws

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» The ELS crew includes (back, from left) Jody Wright, Steve Stoia, Devonte Rucker, Bandon Kinney, owner Don Arch, Perry Havener and Jeff Thompson; (front) Bernard Stafford, James "Catfish" Howell, Kyle Strickland, Teresa Lewis, James Macko and Buddy Blake.



"They look at it as a big video game," he says. "It's kind of the world they grew up in — they're just naturals at it."

As an example, Arch cites a cloud-based GIS mapping system called Uneath. Among other features, it allows technicians to upload pipeline inspection videos to a platform where clients can watch as mapping progresses. The technology gives clients access to collected data in real time, as opposed to weeks if using conventional technology, and clients can communicate with office personnel and fields crews as the system collects data.

"It's this kind of responsiveness to customers and their needs — giving them information in a timely manner so they can make decisions in a timely manner — that helps us make a name for ourselves," Arch says. "It's another example of how we utilize technology to keep us moving forward."

### MANAGING GROWTH

As Arch looks back, he says he never could've imagined not only how fast the company has grown, but where his career has taken him. The company has worked on projects under the U.S. Capitol and the White House, as well as in Trinidad, the Bahamas, Panama and Colombia. He's also taken business trips to Sweden and Germany.

"This career has taken me, a plumber, to areas of the world I never would've imagined possible — pretty much all over the world," he says. "We're just a little company in Jacksonville, but we're known around the world for the work we do."

Even after more than 15 years in the trenchless technology sector, he still feels as passionate as ever.

"It may sound weird, but it still gives me goose bumps when I talk to people about it," he says. "I love talking about it and I love doing what I do. I wake up every morning excited about the challenges ahead.

"And I love to see our employees keep improving themselves, too. It makes me feel like we're making a difference in the world."

As for what lies ahead, Arch says he anticipates intelligent, managed growth. If companies don't plan correctly and don't run projects properly, things can go sideways quickly, which usually is expensive, he notes.

"That's why we want controlled, managed growth. Eventually, we'd like to leapfrog over into certain areas like Atlanta and maybe some satellite office out West.

"But for now, we're focusing on refining procedures and processes before we take the next step. We want a plan in place, not just go somewhere and open an office and hope for the best." **c**

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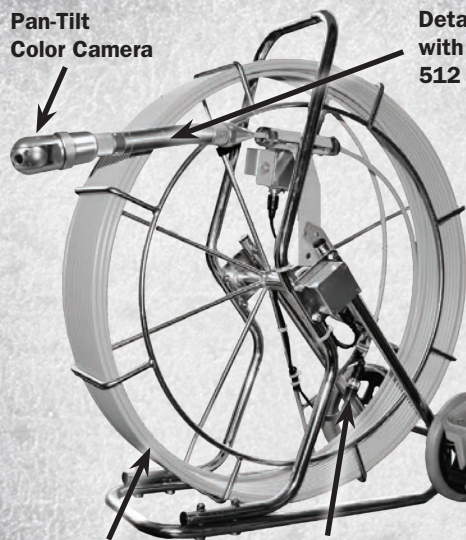
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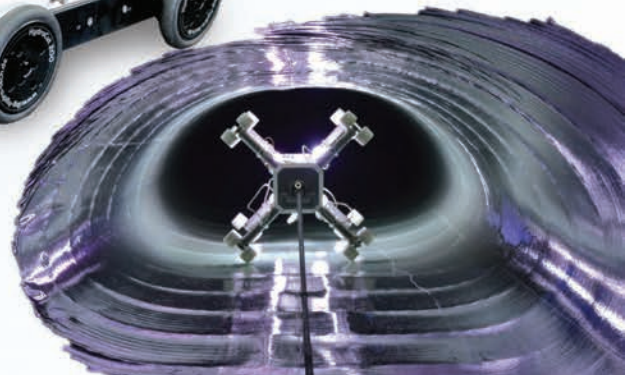
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## GRIP IT AND RIP IT

Root removal is never easy, but drain cleaning equipment and a jetter will help you get the job done

// By Anthony Pacilla

**LEANING A RESIDENTIAL SEWER LINE WITH ROOTS** can be a challenge. If you have traditional drain cleaning equipment and a jetter you have many advantages over companies who only have one or the other.

### DEALING WITH CUSTOMERS

There is a process to follow when dealing with a homeowner regarding roots. Odds are that you've already charged them to open the drain and run a camera down the line. Convincing a homeowner to tack on extra charges on top of that can be difficult. Showing the customer the extent of the root intrusions is a big help — seeing is believing.

It is tough to give an accurate answer as to how long it may take to get the roots out. It is also difficult to explain that the roots might not all be removed, and they will most definitely grow back at some point (on an unknown time scale).

Give the customer options and let them choose; you are not in control of their family bank account. Giving a thorough explanation of the root cutting process is of the utmost importance.

REGARDLESS OF THE EQUIPMENT YOU HAVE, THE FIRST STEP IS TO PUNCH A HOLE IN THE ROOTS SO THAT THE DRAIN WILL TAKE WATER.

### WHEN TO DIG AND WHEN TO CUT

Effectively cutting roots starts with identifying what kind of roots you are dealing with. You don't need to be an arborist and know exact root strengths, but you should be able to get a good idea of what you're dealing with by looking at the sewer camera images. You're not only looking for how thick they are but how long they've been growing in there.

Some of the hardest roots to get through are the thin fibrous root systems that have been growing for a long time. It's like trying to cut a

wet T-shirt. It's a mat of millions of tiny roots that grow with the sewage and appears to have lined the flow line of the pipe. In most cases this type of root system will accumulate tons of black sludge. When you put the camera down the drain you may run into a soft feeling clog that just goes black. This is a good sign that these are the type of root intrusion you're dealing with. If you see this it may be beneficial to just go straight to a dig up. If you can see the roots however, you can begin trying to punch a hole in them and go from there.

### THE CUTTING PROCESS

Depending on what equipment you have at your disposal, there are two different ways of attacking roots. Regardless of the equipment you have, the first step is to punch a hole in the roots so that the drain will take water. Once you get the drain to take water you can work effectively without having massive quantities of water backing up into the house.



▲ A technician removes tree roots from a drain cable after clearing a sewer line at a residence. Root intrusions can be removed with either traditional drain equipment or a jetter, but using both makes the process much easier.



If you only have access to a traditional rod machine, make sure you have a variety of tips that work to cut roots. There are many great options across the manufacturer spectrum. My go-to machine for roots at our shop is the RIDGID K-1500 with the root cutter tip, but there are many options across all platforms.

The tough part about using a traditional drain machine is that you must completely remove the camera before you start rodding, so you don't damage the camera reel. If you are using this option, make sure you set the camera distance counter to zero while entering the drain. When you get to the roots make a note of how far out into the system they are. Say, for example, the roots are 30 feet from your access point. When you put your drain cables in run them to just shy of 30 feet. Run the machine into the line a few inches until you feel the tip catch the roots. Tear the roots a few inches at a time running the machine in forward for a few minutes, and then backward for a few minutes and then continue in a few more inches. Follow this process in and out until it starts to feel easier and you think you've done the job. Make sure you run water in a nearby sink while you are cutting roots to help wash the roots that you've cut down the drain.

If you have a powerful jetter, this process becomes much easier. After you punch through the roots and get water flowing, switch tips to whatever root-cutting tip you use. Push the tip in beyond the point of roots and follow that up by putting your sewer camera in behind it until you can see the roots. Now pull the root-cutting tip back until you can see it is in the correct position to eat roots. Pull the camera back far enough where it will be unaffected by the cutting tip and cut roots. Turn the water off and push the camera downstream and see your progress as needed.

If you have both traditional cable machines and a jetter you could use both on the same line as needed depending on how things are going. Grip and rip with the cables and cut things back with the jetter. **c**

## ABOUT THE AUTHOR

Anthony Pacilla is a registered master plumber for McVehil Plumbing in Washington, Pennsylvania. He has 23 years' experience in the plumbing and HVAC trades, and has a bachelor's in business and economics from Thiel College.

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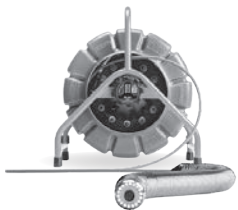


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Liz Uram

# DO EMPLOYEES DESERVE PRAISE JUST FOR DOING THEIR JOB?

Giving sincere, positive feedback to your workers is beneficial for retention and your bottom line // By Liz Uram

**D**O YOU EVER FEEL LIKE THERE IS WAY TOO MUCH appreciation shown in your workplace? If you said no, you're not alone. Your team would probably say the same thing.

A Gallup survey revealed that 65% of employees haven't received recognition in the last year. This directly correlates to the studies that consistently report that two-thirds of American workers are disengaged.

Employees who don't receive recognition are 51% more likely to look for another job; are less motivated to produce more and better work; and they are less likely to respect you as a leader.

WHAT GETS REWARDED GETS REPEATED. IF YOU WANT THEM TO KEEP DOING THEIR JOB, LET THEM KNOW THAT THEIR WORK IS APPRECIATED.

It's easy to see that one of the most important communication skills in a leader's skill kit is the ability to give positive feedback. This is also one of the most underdeveloped skills for many leaders. The reason is that some leaders just don't know where to start.

Here are the five most common questions leaders have about giving praise:

## Why should I praise someone for just doing his or her job?

Two words: positive reinforcement. Do you want them to keep doing their job? Keep this phrase in mind: What gets rewarded gets repeated. If you want them to keep doing their job, let them know that their work is appreciated.

One study concluded that 81% of employees would produce better work more often if they received personal recognition for their efforts.

That seems like a good return on investment for a few sincere words of appreciation.

## I don't need praise; why do they?

Who knows? Everyone has different internal drives that determine what motivates them. Recognition is one of the top motivators along with challenging work, growth opportunities, job security, being part of a team, and compensation.

If you happen to be motivated by growth opportunities you may not understand why someone needs a pat on the back. You might even think they are being needy. Beware. That kind of thinking is a barrier to your own growth and could hold you back from achieving your goals.

The best leaders understand that everyone is different and they meet people where they're at without judgement.

## How do I give praise without sounding phony?

The secret to meaningful recognition is to make it sincere, specific and timely.

- Sincere. This part is easy. If you are specific and timely and you are genuine with your praise you will automatically come across as sincere.
- Specific. Instead of a generic "Good job!" try saying, "Thanks for taking the initiative to help John get that project finished. I really appreciate your teamwork." The person is more likely to repeat the behavior when they know what the praise is for.
- Timely. Say it as close to the event as possible. If you wait it loses its impact. Follow this rule for keeping your praise timely: when you see it, say it.

## Should I praise in public or in private?

You should give your praise where the employee is most comfortable. However, many leaders are hesitant to give recognition in public. They worry that it will create jealousy or resentment. Forget those fears.

One benefit of praising in public is that it shows the lower performers what's possible. It can actually be the shot in the arm they need to step up. Looking for opportunities to give shoutouts for positive behaviors, both big and small, in public creates a culture of appreciation.



You might even notice team members praising each other which will result in increased morale and trust. One study showed that 90% of direct reports agree that team spirit is increased when the leader provides appreciation and support.

#### How often should I offer praise?

We know that once-a-year praise is not enough, but many leaders don't know how often they should acknowledge good work. This is a good question because praising too often can be as bad as not praising often enough. Running around giving high-fives, thumbs up and generic "thanks" is exhausting for you and uninspiring to your team.

A good rule of thumb is to provide positive praise to each person on your team once a week. You may be thinking, "some people aren't doing anything worth praising on a weekly basis." Look harder.

Did your chronically tardy employee show up to the meeting on time? Let them know you appreciate that.

What about the people who come in day after day and do their job? Nothing more, nothing less. They get the job done and you need them. Let them know you appreciate being able to count on them.

The benefits of appreciation are clear: increased retention, motivated team members who work hard, and respect for you as a leader. Start catching people in the act of doing things right. Who knows, maybe you'll get the appreciation you deserve as well. **c**

## ABOUT THE AUTHOR

Liz Uram is a nationally recognized speaker, trainer, consultant and author. She equips leaders with the tools they need to communicate like a boss so they can make a bigger impact, get better results, and motivate others to do their best. Contact her at [www.lizuram.com](http://www.lizuram.com).



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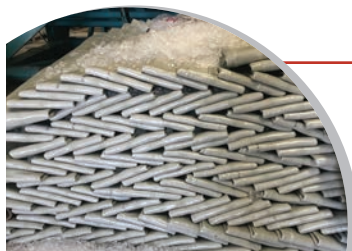
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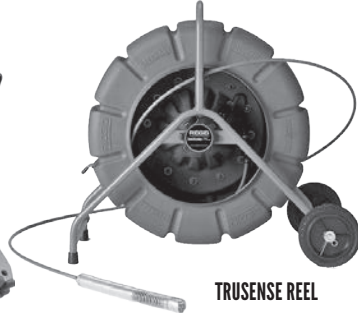


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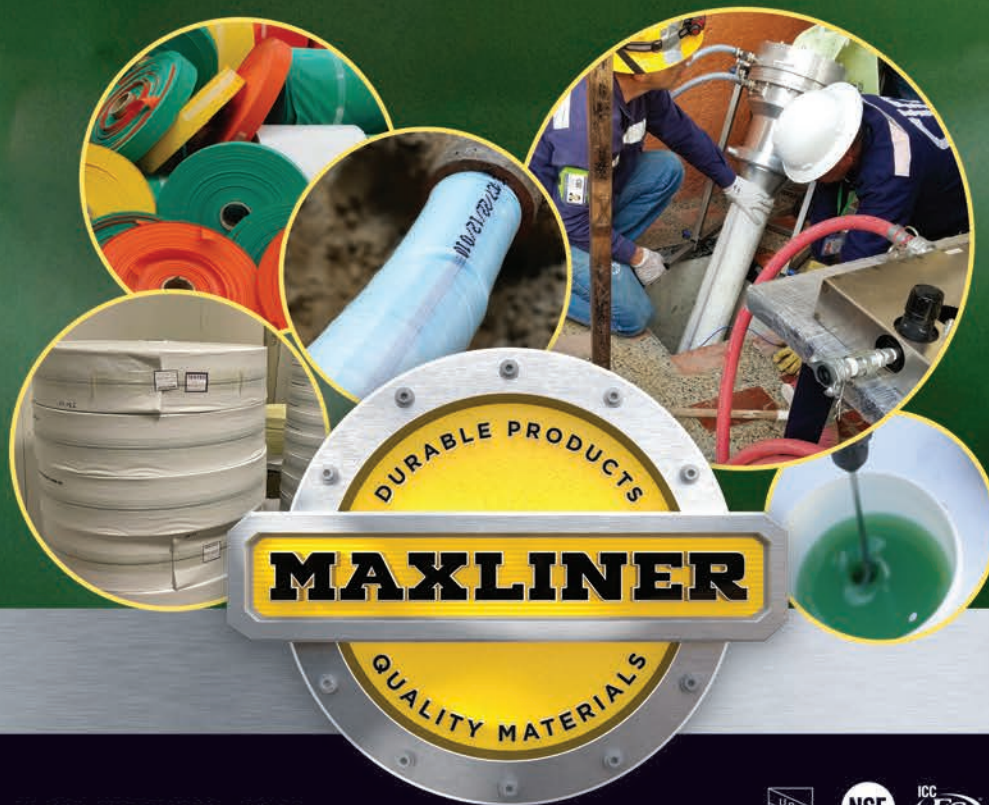
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## A QUICK NEW COAT

PipeCaster Pro pipe coating system rehabilitates pipes where lining is difficult — and without reinstatements // By Ken Wysocky

**L**INING VERTICAL RUNS OF PIPES INSIDE BUILDINGS, particularly high-rise structures, is often problematic due to access issues with bulky pipe lining equipment. And then there's the matter of reinstating all those branch lines, a laborious and time-consuming task.

But Tom Hlavac, the co-owner of California-based Select Trenchless Pipelines, sidesteps both of those issues with a PipeCaster Pro pipe coating system built by IPP Solutions. The investment has opened up a lucrative new market for the company, located in Riverside — about 55 miles east of downtown Los Angeles.

“There’s no question this machine has given us access to customers we couldn’t serve before, especially high-rise buildings,” says Hlavac, who co-owns the business with his son, Tom Hlavac Jr. “It allows us to fix customers’ problems without tearing out walls or ripping up concrete-slab floors.

“It makes life good for them and good for me, because the cost of pipe coating relative to opening up walls and floors is so much lower, but still profitable. It’s a win-win for clients and contractors. And not having to do reinstatements is absolutely a time-saver.”

The company, which Hlavac established in 2002 and employs 18 people, enjoys a broad customer base that includes residential, commercial, industrial and municipal clients. The most popular application for the technology is rehabbing leaking cast iron pipes.

With a price tag of around \$35,000, which Hlavac says includes all the “bells and whistles,” the machine represents a considerable upfront investment. But the return on that investment has been substantial, he says.

“It definitely paid for itself. And it did so quickly, too.”

### READY, SET, SPRAY

Hlavac says operating the system is relatively easy, as long as operators get proper training, which IPP Solutions provides. He says that a competent technician should feel comfortable running the machine after two to three jobs.

## SELECT TRENCHLESS PIPELINES INC.

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**OWNER** Tom Hlavac

**MACHINE** PipeCaster Pro pipe coating system from IPP Solutions

**FUNCTION** Coating pipelines with durable epoxy coating

**FEATURES** Computer-controlled pump system; wireless remote control; pneumatic, stainless-steel spray head; two hose reels with 75 feet of hose each; with tanks, soundproof steel cabinet measures 33 inches wide by 39.5 inches tall by 30 inches wide

**COST** Approximately \$34,900

**WEBSITE** [www.selectstp.com](http://www.selectstp.com)

The system sprays — not brushes — a two-part polyurea resin onto a pipe’s interior. (It also can dispense polyurethane and epoxy products.) The resulting coating is seamless, flexible and strong.

As with many pipeline rehab technologies, a clean host pipe is essential to a successful end product. Most of the pipe rehab projects Select Trenchless performs involve rusted-out cast iron pipes, so the first step is descaling those pipes.

“We do a very careful and controlled cleaning in order to preserve as much of the cast iron pipe as possible,” he explains.

To do that, Hlavac’s crews first use pipeline inspection cameras made by RIDGID and General Pipe Cleaners. Then they deploy drain machines such as Mini and Maxi Millers from Picote Solutions or a Little Wizard from GI Industries, along with chain-knockers made by Picote, GI Industries and Renssi Finland Oy.

The last step is a thorough cleaning with a dolly-mounted Patriot 1776 water jetter made by Patriot Sewer Equipment.

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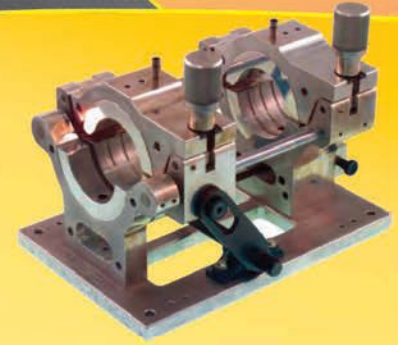
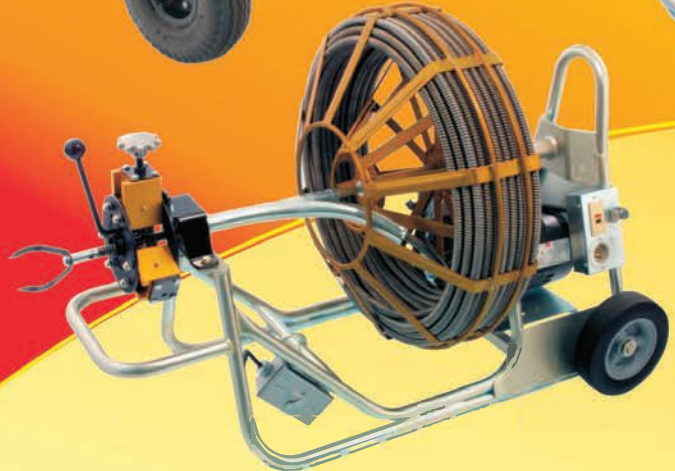
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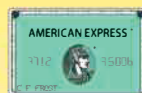


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« Technicians Steven Parker, Pablo Miro, Pete Beccera and Santiago Tevino (from left) of Select Trenchless Pipelines watch the progress of the PipeCaster Pro pipe coating system from IPP Solutions.

“THERE’S NO QUESTION THIS MACHINE HAS GIVEN US ACCESS TO CUSTOMERS WE COULDN’T SERVE BEFORE, ESPECIALLY HIGH-RISE BUILDINGS. IT ALLOWS US TO FIX CUSTOMERS’ PROBLEMS WITHOUT TEARING OUT WALLS OR RIPPING UP CONCRETE-SLAB FLOORS.”

TOM HLAVAC

the coating without spinning the sprayer head. “So the resin just squeezed out like toothpaste and filled in the rotted-out channel,” he says.

### SEEING IS BELIEVING

It’s not unusual for customers to be skeptical about the pipe coating technology. To boost their confidence, Hlavac shows them a section of commercially available, pre-coated cast iron pipe, available at most home centers.

“When people see that cast iron pipes actually are made with a coating, it gives the coating process credibility,” he says.

Investing in the PipeCaster Pro reflects Hlavac’s overall philosophy of staying at the forefront of technology in order to best serve customers.

“When new, cutting-edge technology comes along, it’s incumbent on us as plumbing professionals to know what’s out there so we can present it as a solution for our clients. You’ve got to keep up with the times.”

Hlavac also says it’s important to thoroughly vet new products to be sure they provide great solutions for customers. If he doesn’t believe in a certain technology, he refuses to offer it to clients.

Educating customers also is an important part of the sales process, particularly for newer technology like pipe coating, he adds.

“After I educate customers about the process and show them a sample of a coated pipe, I get approvals pretty quickly. It’s a no-brainer option that sells itself — and then some.” **c**

“You absolutely have to flush and clean the pipe with a water jetter to remove any oils from the pipes,” he explains. “Otherwise the coating won’t adhere properly.”

The last step is the actual coating process. An operator pours the two polyurea resin components into the unit, which mixes them at the correct proportions. Then a spinning sprayer mechanism attached to a neoprene hose gets fed all the way to the end of the host pipe. The actual coating process occurs as the hose is manually pulled back toward the operator.

“We slide a camera down the pipe after the sprayer is inserted, and pull it back along with the sprayer, so we can see how the coating is being applied,” Hlavac says. “Spraying on the coating is better than brushing it on because it gives you an even, consistent coat.”

The unit applies a coat that’s about 1/16-inch thick and cures in about 90 seconds. After that, more coats can be applied as needed.

“But two or three passes usually does the trick,” he says. “We can usually do about 5 feet per minute.”

The process requires two technicians, one to handle the camera and the other to apply the coating.

In one job, where the bottom of a 4-inch-diameter, 60-foot long cast iron pipe was completely rotted out, a technician applied



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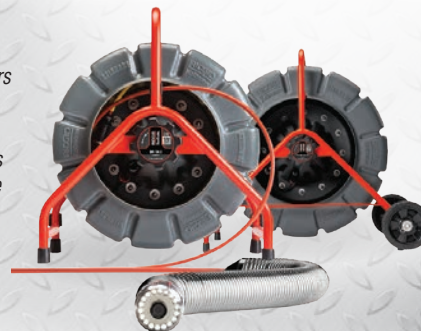
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// By Giles Lambertson

# SOLE PROVIDER

DANIEL FANTI PLANS TO GROW HIS BUSINESS, BUT FOR NOW HE'S PERFORMING SUCCESSFULLY AS A ONE-MAN OPERATION PROVIDING DRAIN SERVICES IN ORANGE COUNTY

## AS A 19-YEAR-OLD, DANIEL FANTI VENTURED NORTH

from Orange County to San Jose, California, and went to work for an older brother as a plumber's helper. He labored with the older sibling for about a month before returning south to Fullerton "looking for an opportunity," and he found one.

Fanti was hired as an apprentice plumber and subsequently honed his plumbing and drain clearing skills for the next seven years. He only switched jobs after a friend referred him to another company. There, he found a mentor, Mitch Clemmons. "Mitch is very nice guy. He saw I had the drive to start a company. He *pushed* me to start a company. He allowed me to continue to work for him while I pursued a license."

Fast-forward a couple years to January 2019 and the newly licensed Fanti became the owner and sole employee of Jettters 'N' Drains Plumbing.

## DIAGNOSING DRAINS

Fullerton is a city of 140,000 people on a valley floor among the Coyote Hills of northern Orange County, some 25 miles south of Los Angeles. It is a suburban region with a fading citrus grove history and lots of housing tracts and commercial centers now filling the flats. Because the suburbanization began soon after World War II, much of the housing stock and the mains serving it are 50 or more years old. Cast iron and vitrified clay pipes dominate.

Given the area's Mediterranean-like climate, the network of commercial and residential drains and pipes is not deeply buried and is easily accessed for cleaning. Fanti loves to clean them.



✔ Jetters 'N' Drains Plumbing owner Daniel Fanti uses a RIDGID SeeSnake camera to inspect a septic clean-out at a residence in Orange County, California.

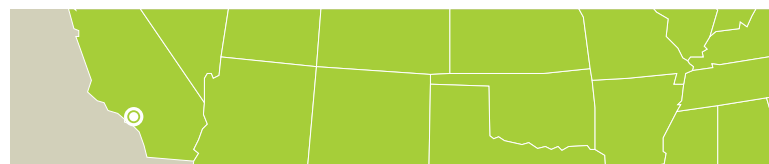


Photography by Matt Dayka

“For me, it starts with the fact that I love drains,” he says. “There is a great feeling that comes from clearing a plugged drain, from hearing the sound of water running freely and then putting a camera in to show a homeowner what’s going on down there. It’s sort of like a doctor showing patients what’s going on.”

His passion for the work grew quickly after he did a lot of drain clearing for the company where he previously worked. Today, he is building out his business in both commercial and residential sectors using a variety of tools, chief among them a Gorlitz GO-4000 jetter.

He calls on the jetter to perform thorough clearing of drain obstructions and restoration of a pipe’s interior. “I tell people there is a big difference between clearing a pipe and cleaning a



## Jetters 'N' Drains

FULLERTON, CALIFORNIA

**OWNER** Daniel Fanti

**EMPLOYEES** 1

**SERVICES** Drain inspection and cleaning, descaling, line and leak locating, some traditional plumbing services

**SERVICE AREA** Primarily northern Orange County, California

**WEBSITE** [www.jetters-n-drains.com](http://www.jetters-n-drains.com)





▲ Fanti's equipment van is wrapped in bold graphics featuring an aggressive looking nozzle.

pipe. I use a snake to clear a drain and a jetter to clean it. When people ask if I can clean out a blockage, I say, well, I can either unplug it or clean it. I can unplug it with a cable but if you want it clean, I'll use a jetter."

The GO-4000 is a Honda-powered portable jetter that produces 3,500 psi and pushes out 10 gpm. It has a hydro-pulse feature to break through stubborn obstacles in a pipe. Fanti's machine also has a modified buffer tank installed by EPL Solutions.

### PROVIDING OPTIONS

Jett's 'N' Drains is known in the area, according to Fanti, for its "\$99 drain clearing special." He will bring his equipment to a home or business, clear any drain from the clean-out access point and warranty the work for 30 days. Lines from clean-outs normally run no farther than 100 feet.

"I always give my customers options," he says. "If it's in their budget to clean it with a jetter, fine. But I can get it open for \$99 and run a camera to see if there is something going on with the pipe."

To clear an obstruction, the company can call upon a trio of RIDGID Flex-Shaft machines — the K9-102 and K9-204 models for smaller diameter lines and the K9-306

"THERE IS A GREAT FEELING THAT COMES FROM CLEARING A PLUGGED DRAIN, FROM HEARING THE SOUND OF WATER RUNNING FREELY AND THEN PUTTING A CAMERA IN TO SHOW A HOMEOWNER WHAT'S GOING ON DOWN THERE. IT'S SORT OF LIKE A DOCTOR SHOWING PATIENTS WHAT'S GOING ON."

DANIEL FANTI

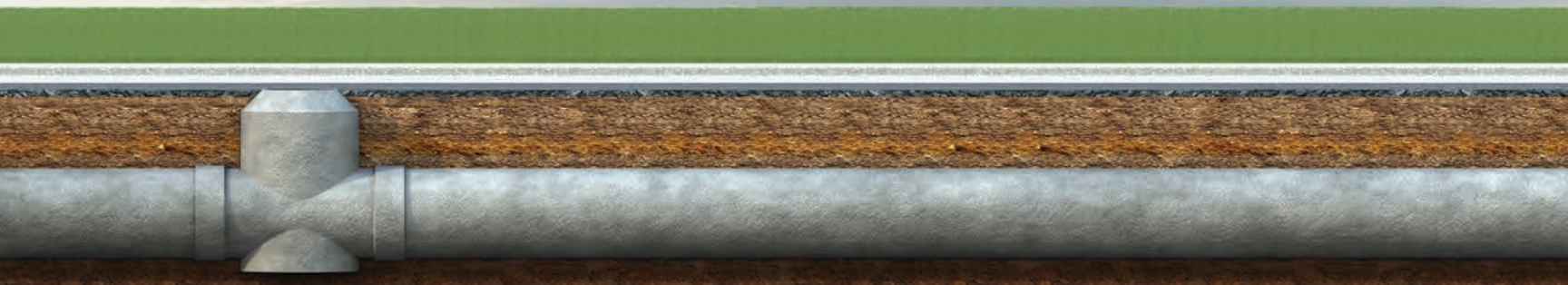
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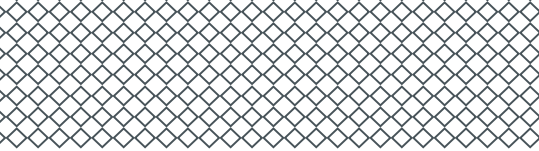
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for mainline blockage. Fanti acquired the three cable machines through a RIDGID Instagram giveaway contest after submitting a winning video of one of his jobs.

“They sent me the three machines and that took my business to the next level,” he says. “The machines made the jobs so much easier.” He also has a Gorlitz GO-62 for larger lines and a Milwaukee hand snake for blockages in narrower diameter pipes.

To locate the pipe problems, or perform post-cleaning inspections, Fanti relies on a RIDGID SeeSnake standard model camera with a 220-foot reel and a CS12x monitor. It gets a workout regularly when local properties change hands. Jetters ‘N’ Drains is on the speed dial of several local realtors for inspection work.



Fanti grabs equipment from his van's toolbox while on a job in Orange County.

# The Lansas 5-Line

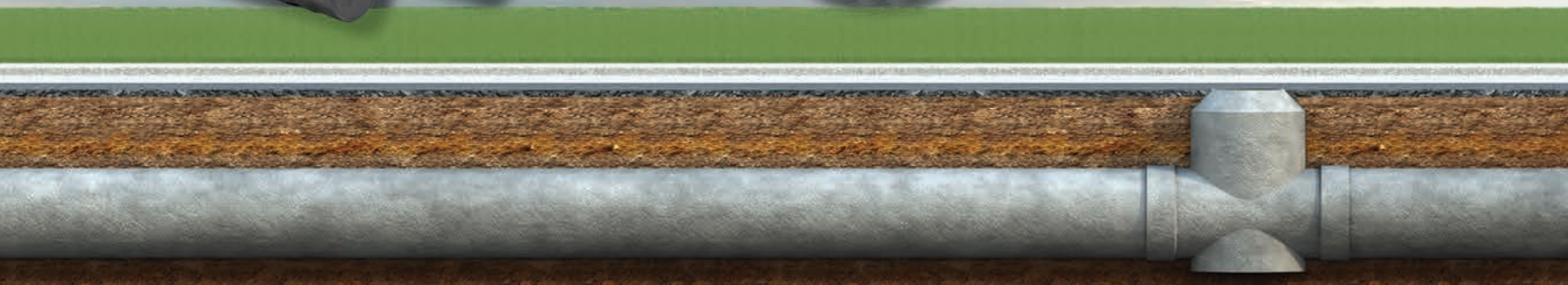


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“I work with a lot of them,” he says, “helping protect a real estate client’s investment. You buy a \$500,000 home, you want to make sure the pipes are clean. I give the realtors a special package, a discount rate when a property is in escrow. I walk it through with them and explain everything I found.”

The quality of the inspection work has regularly led to new business from customer recommendations. “Most of them refer me to other people. Believe it or not, 75% of my business is through referral and word of mouth. The way I look at it, as long as you take care of your client, your phone always is going to ring.”

He advertises primarily online through Yelp and Google, partly

“Normally, people are home after 5 p.m. and running more water and finding problems. Suddenly, after the virus hit, everyone was home all day and running water, so more problems cropped up. But there was a point when people started getting comfortable and wearing masks and creating a new normal.”

### LOOKING TO BUILD

Whenever “normal” business returns, drains will continue to be Fanti’s forte. He loves the work and is good at it. Jetters ‘N’ Drains does offer traditional plumbing services like fixing leaks. It also offers underground line locating services using a RIDGID

CONTINUED >>

“BELIEVE IT OR NOT, 75% OF MY BUSINESS IS THROUGH REFERRAL AND WORD OF MOUTH. THE WAY I LOOK AT IT, AS LONG AS YOU TAKE CARE OF YOUR CLIENT, YOUR PHONE ALWAYS IS GOING TO RING.”

DANIEL FANTI

because of public nervousness associated with COVID-19. “People want to see stuff on their phones rather than touch door hangers and other kinds of advertising. Once things get back to normal, I’ll probably do newspaper advertising and billboards.”

Only in business for a year before the virus began to skew the marketplace with lockdowns, Fanti isn’t entirely certain what “normal” is. “The first month of the pandemic, things got a little difficult. Everyone was cautious about letting service techs of any kind into their homes. When I did hear from customers, I got some pretty strange calls about removing paper towels and rags from pipelines.

>> Fanti sets up a RIDGID K9-306 cable machine to clean a line at a residence.



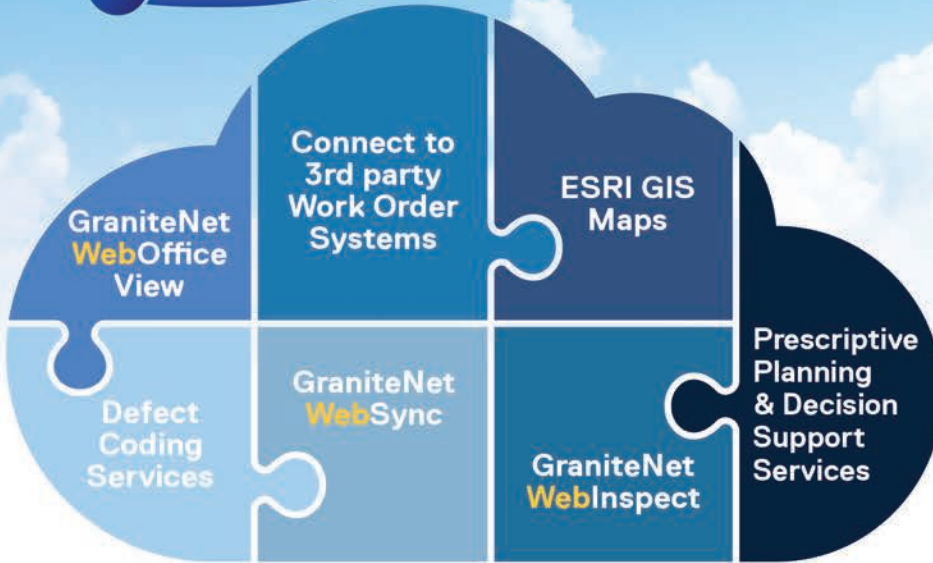


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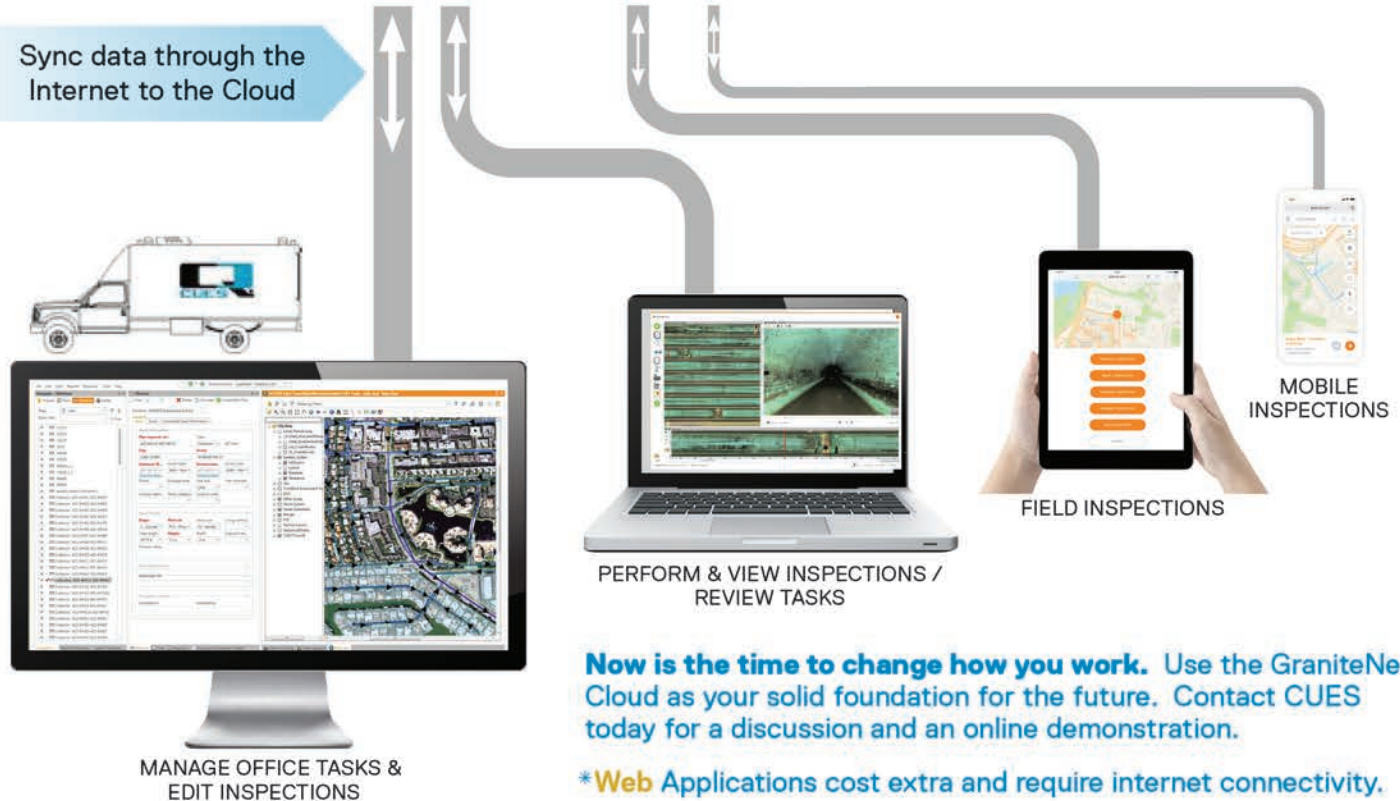
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## JUMP RIGHT IN

Don't be afraid to take the plunge as a new businessperson. That's the advice of Daniel Fanti, the owner of Jetters 'N' Drains, a one-man southern California plumbing company working its way through the pandemic in only its second year of business.

Fanti says the decision to open his own plumbing company in 2019 was pretty simple. "I've always wanted to go into business for myself. I like to help people and I love drain work. So, I said, why not? Nothing to lose."

He firmly believes that one should commit to the act of starting a business once a person has dreamed it and laid the groundwork.

"You want to try different things, different methods of running a business, because certain things won't work for certain people. See what works best for you," Fanti advises anyone thinking about going out on his own. "The main thing is, start now. Why wait till later? Plenty of people reach a point of wanting to start a business but hesitate for many reasons. I would say, don't wait till later. Start now because it's going to take time to build a business."

"It's like those who say, I want to be all ready before I have kids. Well, you are never really going to be ready to start a business and you can learn from your experiences. Go ahead. It's going to be fun and, long term, it's worth it."

The main consideration, he adds, is to start a business with customers in mind.

"If you are in a job that provides a service, you have to be in business for the right reason. You have to be there to serve. That's my job. I'm in the plumbing business and am reliant upon people calling me. If you do the right thing, you always are going to have work. And the best form of advertising is word of mouth because I know when someone is referred to me, that person already trusts the person who did the referring."



« Fanti unloads equipment at a job site. While he does some plumbing work too, his van contains mostly drain equipment since drain cleaning is his primary focus.

Scout locator and a Goldak sound detector for locating water leaks.

But drains are the company's primary focus and that focus will become even more concentrated moving forward. "If you look in my van, there really is nothing much there but drain clearing equipment."

Descaling pipe will remain a staple service, too, he says. Fanti frequently is called to descale pipe running under houses built on slabs. "If I can descale 50-year-old cast iron pipe and bring it back to a state where it is round and clean and

"IF I CAN DESCALE 50-YEAR-OLD CAST IRON PIPE AND BRING IT BACK TO A STATE WHERE IT IS ROUND AND CLEAN AND THEN COAT IT, I'VE BOUGHT IT ANOTHER 50 YEARS OF LIFE — RECONDITIONED AND RESTORED IT WITHOUT RIPPING UP THE HOME."

DANIEL FANTI

then coat it, I've bought it another 50 years of life — reconditioned and restored it without ripping up the home." The K9-306 and a Picote



Solutions Mini Miller are his tools for that cleaning work. Quik-Coating polyurea resin from Pipe Lining Supply is applied to protect the cleaned pipe.

Looking beyond the pandemic, Fanti is confident about the long-term prospect for his business. “When we get back to something somewhat normal, I’ll be fine. I’m looking for growth.”

Growing the company will mean hiring someone to share the workload and getting more trucks on the road. In 2021, he wants to bring pipe bursting and pipe lining jobs in-house — such jobs presently are subbed out. Most important, he plans to grow his company in a way that reflects his own values.

“I want to start building my team by making sure it is a company where I would want to work, where I would be happy working,” he says. “I want employees who are happy to come to work. That’s where I am right now. It’s all going to start with the work environment. Customers come first, but your team needs to be happy to do that.” c



Jetters 'N' Drains is a one-man operation now, but Fanti plans to eventually grow the company in a way that reflects his values.

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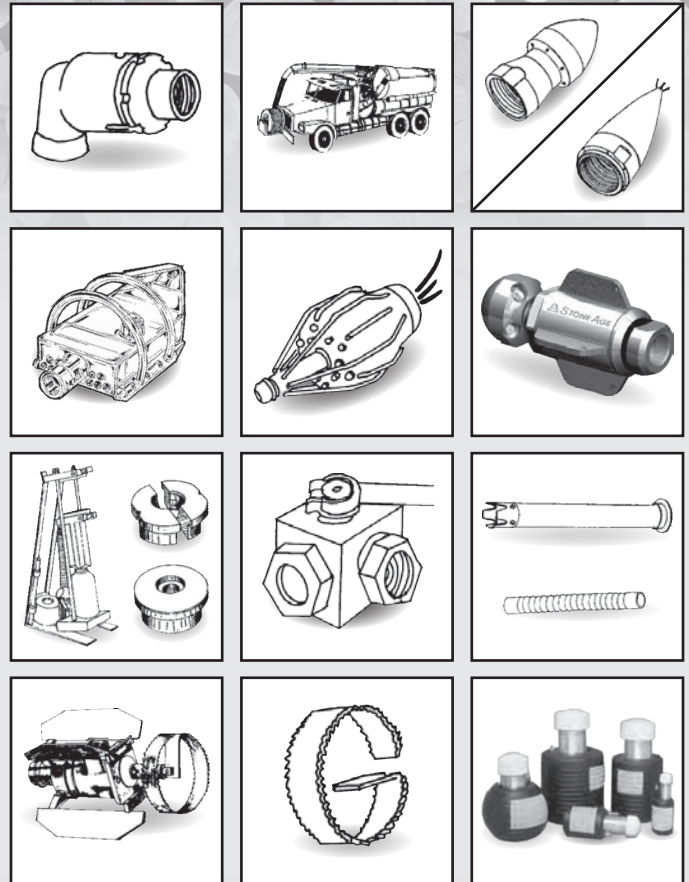
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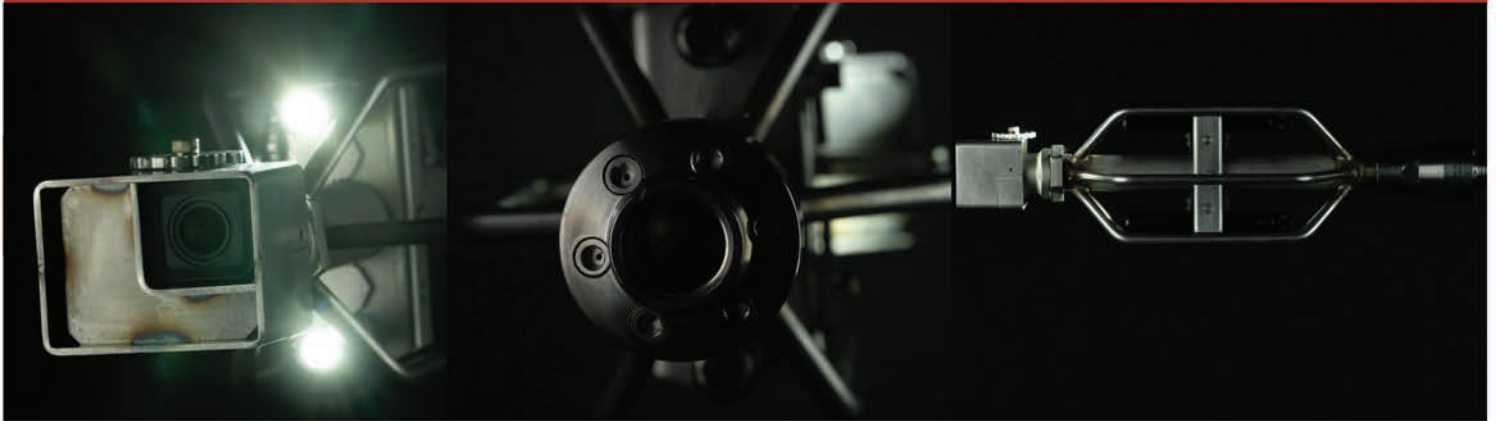
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## CHEMICAL AND MECHANICAL ROOT CONTROL

By Craig Mandli

### » CABLE MACHINES

#### 1 // ELECTRIC EEL MODEL C

The Model C dual-cable sectional drain cleaner from Electric Eel runs up to 200 feet of 1 1/4-inch, self-feeding dual cable in 8- or 10-foot sections that requires no handling when rotating. It spins cable at twice the revolutions per minute of a continuous cable machine for cleaning 3- to 10-inch lines for distances up to 200 feet. One-man operation means less time and labor expense. A heavy-duty, 1/2 hp motor comes standard, and 3/4 and 1 hp motors are also available. A custom-designed gearbox ensures higher quality, lower cost and parts availability. The heavy-duty, fully adjustable safety clutch keeps cable and tool breakage to a minimum and provides overload protection. A fold-down handle allows for easy transportation, storage and use in crawl spaces. Its carry handle allows for balance and easy transport. 800-833-1212; [www.electriceel.com](http://www.electriceel.com)



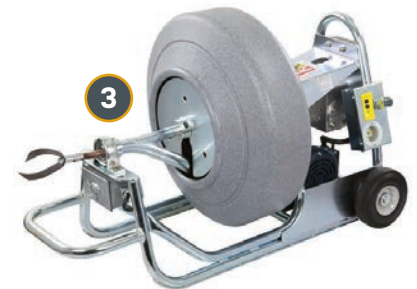
#### 2 // DURACABLE DURAFLEX

Hair clogs, wadded paper towels and grease buildup are enough to stop up a drain; tree roots are another challenge. DuraFlex cables from Duracable can help solve these problems. The cables, which are manufactured in the U.S., provide a balance between strength, hardness and flexibility, whether a sturdy 100-foot inner-core cable for tree roots or a hollow-core 50-foot drain cable is required. Duracable offers a full line of drain machines to put the drain snakes to proper use. Blades and accessories are available. 800-247-4081; [www.duracable.com](http://www.duracable.com)



#### 3 // GORLITZ SEWER & DRAIN MODEL GO 62HD SERIES

The Model GO 62HD Series machine from Gorlitz Sewer & Drain is a mirror image of the larger Model GO 68HD. Its smaller size, low profile and lighter weight make it suitable for getting into tight spaces or through narrow doorways and basements. It is available in a variety of reel and/or drum combinations. With a quick turn of an Allen wrench, the machine can be broken down into separate frame and reel components for easy transportation or adding an additional cable reel for extended reach. It includes a ball bearing 1/3 hp reversible motor and aluminum gearbox that develops approximately 100 pounds of torque and cleans sewer lines and drainlines from 2 to 4 inches in diameter up to 200 feet long. The machine comes equipped with a standard hollow-core 5/8-inch-diameter cable with slip-joint connectors. An electric foot switch is provided for safe operation of the machine. 877-446-7548; [www.gorlitz.com](http://www.gorlitz.com)



#### 4 // MILWAUKEE TOOL M18 FUEL SWITCH PACK SECTIONAL DRUM SYSTEM WITH CABLE DRIVE

The M18 FUEL SWITCH PACK sectional drum system with CABLE DRIVE from Milwaukee Tool combines the benefits of sectional and drum machines. The SWITCH PACK CABLE DRIVE assembly provides users with the ability to automatically feed and retract cables through 1 1/4- to 4-inch lines at up to 15 to 20 feet per minute. A twist-lock feature allows the cable drive assembly to be easily swapped between drums. This means users only need one cable drive assembly for all the switch pack drums they own. 800-729-3878; [www.milwaukeetool.com](http://www.milwaukeetool.com)







5

### 5 // MYTANA M745 VARIABLE-SPEED WORKHORSE

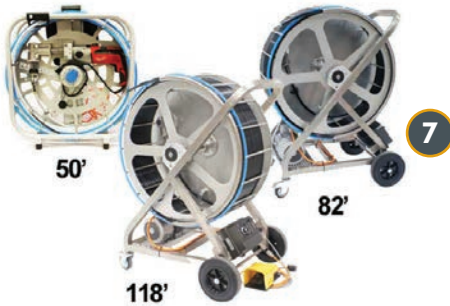
MyTana's versatile M745 Variable-Speed Workhorse is designed for tough obstructions in 3- to 6-inch lines, with options to also work in 1 1/2- to 2-inch lines. Its compact size, stair gliders and balanced weight make it ideal to navigate tight spaces. Armed with 100 feet of 9/16-inch, hollow-core cable, the system's variable-speed drive lets the user throttle up to 300 rpm to negotiate turns, strengthen cleaning force, expedite feeds and rewinds, and then reduce the revolutions per minute to tackle obstructions and debris. It includes Autofeed, and an optional Sinkline Cleaning Kit with 3/8-inch cable can be swapped to work on smaller lines with no tools needed. 800-328-8170; [www.mytana.com](http://www.mytana.com)



6

### 6 // PICOTE SOLUTIONS MINI CLEANER

The Mini Cleaner from Picote Solutions is a high-speed pipeline cleaning system aimed at the domestic drainage and plumbing markets. The unit has a flexible two-part shaft with a rotating inner core where the cleaning heads are attached. The stationary outer casing ensures the operator's hands do not make contact with rotating parts during the cleaning operation, improving safety and flexibility. The outer casing is durable and also flame, abrasion and chemical resistant with a high continuous service temperature. The whole unit weighs in at 58 pounds so it can be easily transported. It also has the flexibility to handle multiple 90-degree bends, even in smaller-diameter pipes. 219-440-1404; [www.picotesolutions.com](http://www.picotesolutions.com)



7

### 7 // PIPE LINING SUPPLY RENSSI HIGH-SPEED CABLE MACHINE

Renssi high-speed cable machines and individual cables from Pipe Lining Supply are driven by the technician's existing power source. The machines come in three cable sizes, including 5/16, 3/8 and 1/2 inch. The unit offers cable speeds of up to 3,500 rpm and cuts cleaning time to minutes. Machines come in 50-, 82- and 118-foot cable lengths. In addition to the machines, customers can purchase the cables independently in a variety of sizes and perform drain cleaning with separate cables. By adding a camera option, the operator can see what needs cleaning and attack those areas instead of dragging a cleaning head through the pipe where it might not be needed. 888-354-6464; [www.pipeliningupply.com](http://www.pipeliningupply.com)

### 8 // RIDGID FLEXSHAFT DRAIN CLEANING MACHINES

RIDGID FlexShaft drain cleaning machines quickly and efficiently deliver wall-to-wall clean in 1 1/4- to 6-inch residential and commercial pipes up to 125 feet. Lightweight and fully contained machines, they are used in conjunction with a full suite of specialized accessories designed for clearing grease, sludge, small tree roots and soft blockages with less mess and enhanced speed. They use various chain knockers that expand to the size of the pipe to quickly clear the entire pipe circumference. The chain knockers are connected to a flexible, nylon-sheathed cable that is housed in a fully enclosed drum. The K9-102 and K9-204 are powered by a cordless drill attached to a driveshaft. The K9-306 is powered by an internal 1.5 hp motor equipped with an I-Clutch for additional cable protection. Nylon and nylon/steel brushes for final pipe cleaning and relining preparation are available. The machines allow for inspection cameras to remain in the pipe throughout the entire drain cleaning process for maximum efficiency. 800-474-3443; [www.ridgid.com](http://www.ridgid.com)



8



# PRODUCT FOCUS

## 9 // SPARTAN TOOL MODEL 300

The Model 300 from Spartan Tool has a compact design suitable for tight spaces and narrow doorways. Its enclosed inner and outer steel drums keep messes contained. It can be combined with up to 107 feet of Spartan Tool's Magnum cable for increased power and performance in a compact machine. 800-435-3866; [www.spartantool.com](http://www.spartantool.com)

## >> CUTTING NOZZLES

### 10 // ARTHUR PRODUCTS CNT-R-KUT2 EMAX2

The Cnt-r-KUT2 EMAX 2 from Arthur Products is an interchangeable cutter nozzle to clear roots and debris. The centering devices can be modified for custom applications. They help operators tackle tough jobs, including when using drain cleaning nozzles in tight spaces in damaged sewers. Drain cleaners can expect to achieve maximum cleaning spread in drains and other pipes. 800-322-0510; [www.arthurproducts.com](http://www.arthurproducts.com)

### 11 // ENZ USA CUTTING BALL

The water-driven Cutting Ball nozzle from Enz USA is available in 3- and 4-inch sizes. It can move easily around curves in 3- to 6-inch polyethylene, steel or concrete pipes while safely removing roots and mineral deposits, resulting in no damage to the pipe. It works without impact but has the ability to switch to a vibrating nozzle. It comes with a hard metal front blade for pipes that are more than 50% clogged. The side blades are self-sharpening and maintain their sharpness over their entire service life. The cutting ball operates with controlled rotation speed and is capable of running on recycled water. It is leak-free. 877-362-8721; [www.enz.com](http://www.enz.com)

### 12 // SEWERPROSHOP RAPTOR AND VIPER

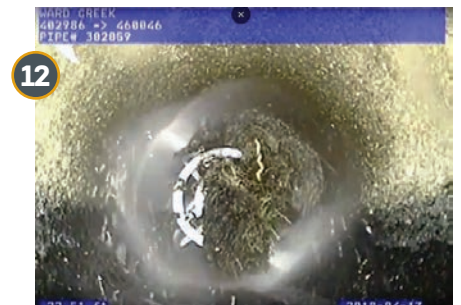
Raptor and Viper chain cutters from SewerProShop are made of high-grade stainless steel and are furnished with ceramic nozzle inserts. With the Raptor, choose from 4- and 6-inch ridged skids or a 6- to 12-inch flexible guide skid, along with cutting chains and carbide bits to achieve quick solutions. Viper chain cutters are designed to remove heavy obstructions caused not only by roots, but grease, mineral deposits and other solid organic material. The unit is driven by a high-performance turbine, which doesn't require any lubrication. Chains spin at speeds of 4,000 to 12,000 rpm. Multiple guide skids available in various sizes make for a service range of 4 to 48 inches. 877-864-9394; [www.sewerproshop.com](http://www.sewerproshop.com)

## >> PORTABLE JETTERS

### 13 // GENERAL PIPE CLEANERS JM-1000 MINI-JET

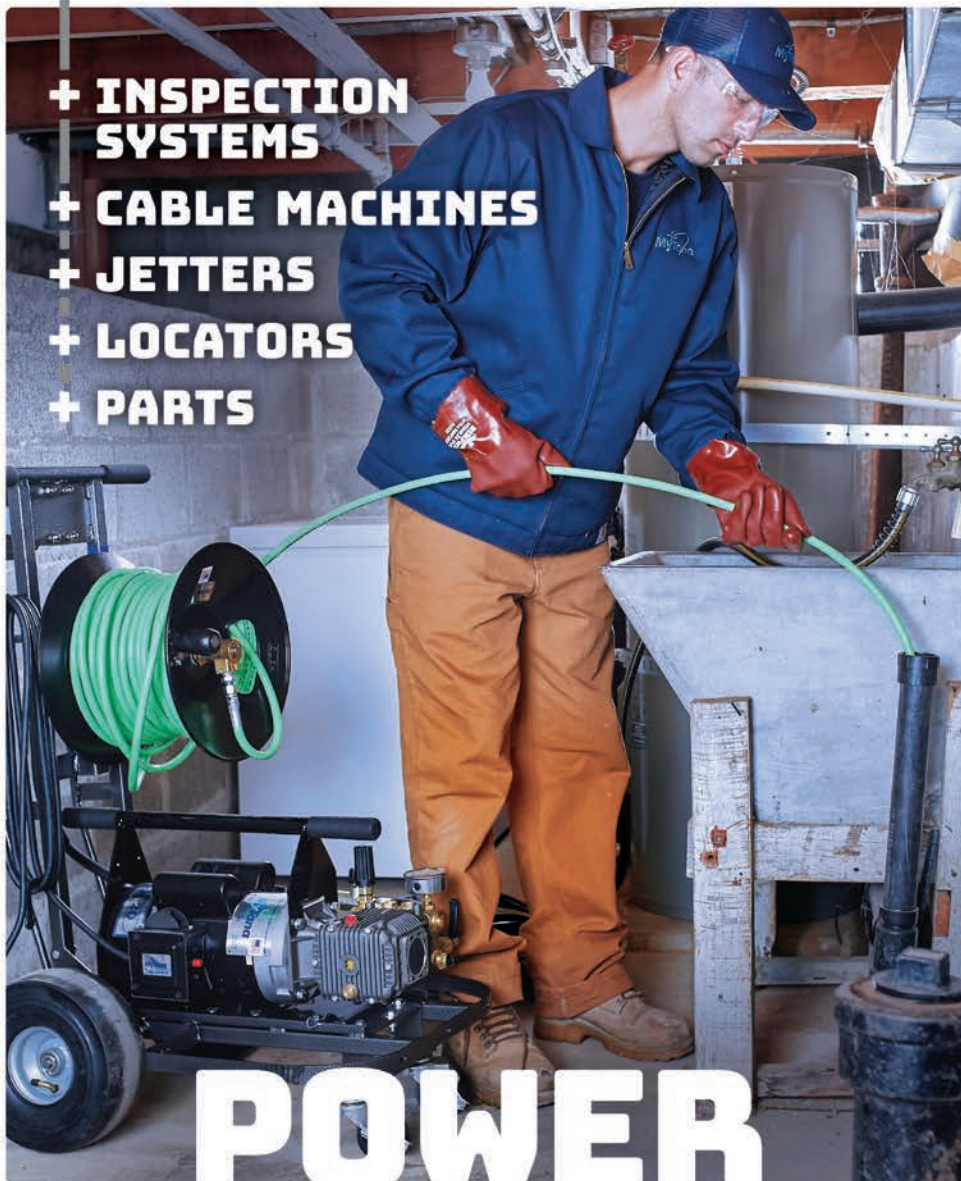
The JM-1000 Mini-Jet from General Pipe Cleaners includes a high-performance, stainless steel braid jet hose for drain cleaning power and performance in a small package. The stainless steel braid/Teflon core hoses are available in a variety of lengths and are also optimized for the JM-1450 electric jet. The Mini-Jet can clear grease, sand and ice from small lines, sinks and laundry drains with 1,500 psi, high-pressure water spray. Its diamond-plate metal case safely shields the pump and motor assembly from job site abuse. The hose smoothly slides the jet nozzle down 1 1/2- to 3-inch drainlines, navigating tight bends. The 3/16-inch Teflon core also reduces flow resistance, improving small-line cleaning power. The package includes a four-piece nozzle set, water supply hose, shut-off valve and universal faucet adapter. 800-245-6200; [www.drainbrain.com](http://www.drainbrain.com)

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# PRODUCT FOCUS

## 14 // PATRIOT SEWER EQUIPMENT & REPAIR 1776 HEAVY-DUTY EDITION

The 1776 heavy-duty edition from Patriot Sewer Equipment & Repair generates 3,500 psi at 11 gpm. Standard equipment includes a Piranha 3/8-inch, 300-foot, red jetter hose and remote start for one-man operation. A portable 100-gallon water tank with autofill valve and stainless steel nozzle set is custom-engineered to work at max pounds per square inch and gallons per minute. It can be used to clean 4- to 6-inch sewer pipes with ease. Propane or gas models are available. It includes an all-stainless steel reel and frame. All units are built to order. 888-318-9888; [www.patriot.us](http://www.patriot.us)

## »» ROOT CHEMICALS

### 15 // LENZYME TRAP-CLEER FOAMING ROOT CONTROL

Foaming root control from Lenzyme Trap-Cleer has double the active ingredient dichlobenil of previous solutions, along with a latex base designed to help it stick to roots longer. It is easy to apply and provides a slower foaming action to coat the entire pipeline and eliminate fast-foam-over messes. 800-223-3083; [www.lenzyme.com](http://www.lenzyme.com)

## »» ROOT CUTTERS

### 16 // NOZZTEQ LUMBERJACK

NozzTeq Lumberjack cutters are low-torque, variable-speed, multipurpose cutting nozzles powered by common sewer jetting or combination trucks. The cutting chains rotate at speeds of 10,000 to 50,000 rpm, depending on pressure and flow rate. The precisely engineered cutter is designed to cut roots, but it also effectively clears out concrete, tuberculation, grease, protruding laterals and other obstructions. Low torque means it won't get stuck, harm host pipe or spin off the hose end. The cutters are sealed, include grease-lubricated bearings and are water-cooled so they don't need daily maintenance. Five models clear pipes from 3 up to 48 inches. The entire kit includes the turbine, water supply tube, chain plate/pull plate, tow ring, cutting blade, sleds, five sets of chain per sled size, propelling nozzle with jets and adapter, spanner wrench, hand tools and toolbox. 866-620-5915; [www.nozzteq.com](http://www.nozzteq.com)

### 17 // ROOT RAT CUTTING NOZZLE

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

### 18 // SOUTHLAND TOOL ROOT CUTTER S906M-1-AK

The S906M-1-AK root cutter motor from Southland Tool is built from the same platform as the S906M-1 motor but has an upgraded process for the internal parts that makes it smooth to turn, improving hydraulic performance and nearly eliminating internal corrosion. This process, known as “advanced kinetics,” uses a finish that improves the friction coefficient and allows parts to run smoother, which reduces drag, saves water and increases productivity. The metal becomes denser to ward off corrosion and wear. The cutter is designed for lines from 6 to 30 inches. The motor can accommodate hose sizes of 3/4, 1, 1 1/4 and 1 1/2 inches and handles flows from 40 to 170 gpm and pressures from 1,500 to 3,000 psi. It is rated up to a maximum 288 pounds of torque and 220 pounds of continuous torque, which is ideal for cutting taps in larger sizes. 714-632-8198; [www.southlandtool.com](http://www.southlandtool.com)



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# PRODUCT FOCUS

## 19 // USB-USA TURBO CHAIN CUTTER SERIES

The heavy-duty Turbo Chain Cutter Series from USB-USA continuously adjusts from 8- to 15-inches (Turbo S200) or 12- to 24-inches (Turbo S600) and easily fit into the pipe. Turbine technology powers the durable chain retainer on a robust body to remove roots, concrete, calcium deposits, hardened grease and tuberculation from sewer lines. They are designed to be aggressive on the hardest materials. They are robust and have double the amount of turbine driving water jets as previous models, generating high cutting power. Easily adjust the cutter to within 1/16 inch by spinning the rear to make it larger or smaller. Internal 3D fluid mechanics in conjunction with one-piece ceramic nozzle inserts allow the cutter to be used with recycled or clean water. 844-285-5770; [www.usb-usa.com](http://www.usb-usa.com)



## 20 // WARTHOG NOZZLES BY STONEAGE WGR MAGNUM ROOT DESTROYER

The WGR Magnum Root Destroyer from Warthog Nozzles by StoneAge is optimized to clear roots quickly and efficiently. Its multijet configuration is designed to take out roots at the source, helping eliminate the use of mechanical tools that could damage the pipe. It is compatible with existing WGR nozzles for pipes ranging from 8 to 36 inches. 866-795-1586; [www.warthog-nozzles.com](http://www.warthog-nozzles.com)



## >> TRUCK/TRAILER JETTERS

### 21 // AMERICAN JETTER HOT JETTER

Hot Jetters from American Jetter include a water-heating system that uses efficient dual-coil burners. Burner exhaust temperatures are reduced from 400 F to around 127 F, effectively releasing less heat into the atmosphere. This is coupled with 20% or more fuel savings from the optional Kohler 19 to 38 hp EFI engines. The increased fuel savings will provide longer runtimes. 866-944-3569; [www.americanjetter.com](http://www.americanjetter.com)



### 22 // CAM SPRAY CV SERIES

The CV Series cargo van drain jet from Cam Spray offers diesel-fired hot water for additional jetting power. Several models are available up to 4,000 psi and 12 gpm. A triplex plunger pump with power pulse valve provides an extra push when needed. Air purge and recirculation to the tank are provided for freeze protection. A 5-gallon fuel tank provides hours of runtime. It comes with a heavily built, powder-coated frame with full deck and 130-gallon water capacity; a 12-volt DC reel with 2-1 clutch drive allowing for free spooling; and a powered hose return. It is controlled by a push button or foot switch. Accessories include a four-nozzle set, storage box, tip cleaner, tiger tail, safety shield, rubber gloves, high-visibility safety vest, 50-foot washdown hose and trigger gun. 800-648-5011; [www.camspray.com](http://www.camspray.com)



### 23 // EASY KLEEN PRESSURE SYSTEMS GROUNDHOG JETTER

The Groundhog Jetter from Easy Kleen Pressure Systems is designed to blast through clogged pipes with a 35 hp Vanguard engine providing 12 gpm at 3,500 psi. It is compact and can be transported in a pickup truck or van, with trailer options available. It includes a fully welded, powder-coated, 2-inch steel tube frame, drilled and tapped, which houses the 200-gallon water tank. It comes with an accessible breather and 10-gallon fuel tank, General Pump with gearbox drive, 12-volt-powered hose reel with 300 feet of 3/8-inch jetter hose, hose guides, a super swivel and foot-pedal control, emergency shut-off valve and hour meter. Optional remote features include hose reel-in, motor off/speed control and pressure on/off. 800-315-5533; [www.easycleen.com](http://www.easycleen.com)



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# PRODUCT FOCUS

## 24 // GAPVAX GJET

The GJet truck jetter from GapVax offers 500- to 3,000-gallon stainless steel water tank options and 40 to 100 gpm water pump options along with a front-mounted hose reel, various toolbox options, room for a vice or crane, and 10-foot tube trays. 888-442-7829; [www.gapvax.com](http://www.gapvax.com)

## 25 // HOTJET USA XTREME FLOW III

The Xtreme Flow III trailer jetter from HotJet USA offers 18 gpm at 4,000 psi jetting power, clearing drains from 2 to 24 inches. It offers twin 35 hp Vanguard engines on a 5-by-14-foot, heavy-duty, 10,000-pound-rated trailer. It is designed to bust through any clog, roots or debris. 800-213-3272; [www.hotjetusa.com](http://www.hotjetusa.com)

## 26 // JETTERS NORTHWEST EAGLE 200

The Eagle 200 midsize trailer jetter series from Jetters Northwest is available in 12 gpm/3,000 psi (model Eagle-200/3012) with 1/2-inch I.D. jet hose or the 9 gpm/4,000 psi (model Eagle-200/4009) with 3/8-inch I.D. jet hose. It comes with either a Kawasaki (liquid-cooled) or Kohler (air-cooled) fuel-injected engine, an industrial-duty trailer with brakes for safety and an A-frame tongue that allows it to be towed when full of water. Flattop fenders allow for additional mounting surface. Chrome wheels give it a sharp appearance. It comes with a super-duty triplex UDOR U.S.A. pump, 12-volt power-wind hose reel with wind-speed controller, 200-gallon water tank, large 60-inch lockable tool storage bin, 300 feet of jetting hose on the main 12-volt reel, 100 feet of 3/4-inch water-supply hose on a second reel, adjustable pulsation control and four jetting nozzles. 877-901-1936; [www.jettersonorthwest.com](http://www.jettersonorthwest.com)

## 27 // SEWER EQUIPMENT MODEL 800 SERIES IV

The Model 800 Series IV truck jet from Sewer Equipment has fully baffled Duraprolene water tanks, an eco-friendly operating system, 190-degree rotation of the hose reel and an insulated, heated enclosure housing all water components. This all-weather truck's rear door closes fully while the hose reel is extended, keeping heat inside the enclosure where water components are stored. It offers wintertime recirculation of the water system at highway speeds, a retractable canopy for sun and inclement weather, and a boiler to provide onboard hot water for cold-weather applications. The dual reel configuration touts two hose reels in one location, with the secondary reel allowing for the addition of a televising jet pod or small-line sewer hose, giving operators the ability to perform multiple applications using one truck. It includes ergonomic controls, an operator station situated between hose reels in a dual hose reel configuration and a secondary operator's station at midship. 888-477-7611; [www.sewerequipment.com](http://www.sewerequipment.com)

## 28 // 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 storm lines. 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 handgun system with 25 feet of hose, and a selection of nozzles. 888-920-2945; [www.vac-con.com](http://www.vac-con.com)



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# PRODUCT FOCUS

## 29 // VACTOR RAMJET

Vactor's Ramjet truck-mounted jetter offers IntuiTouch technology that delivers improved operating ease, quick accessibility to key information and greater control on jobs. IntuiTouch in-cab controls provide PTO activation at the touch of a button. Outside, operators can use the IntuiTouch ergonomic control station that features a simple, up/down adjusting control panel for all cleaning system functions. It also offers improved water plumbing, allowing for greater storage options. Other features, including a Jet Rodder water pump and Park-N-Clean technology, come standard. It also includes a cold-weather package that separates wet and dry items and a rear hose reel with optional integral aluminum shroud for optimal performance in cooler environments. 800-627-3171; [www.vactor.com](http://www.vactor.com) **c**



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## CHEMICAL AND MECHANICAL ROOT CONTROL

// By Craig Mandli

### ROOT PROBLEM ELIMINATED ON LAKESIDE EASEMENT



**PROBLEM** / A neighborhood in Liberty, Missouri, had a heavily root-bound easement. Access was difficult, as the 1,280-foot line traveled across the backyards of houses situated on a lake. The line was laid unevenly, which gave roots more opportunity to invade. There were continual blockages, with several houses experiencing backups. The municipality put the easement on a saw, cut and flush routine program, conducted twice a year. However, they were called out for emergencies in between the maintenance visits as well, as there were constant problems.

**SOLUTION** / Duke's Root Control applied RazorRooter II to the entire easement. The hose released and sprayed the foam in all directions, allowing it to adhere to roots and penetrate through wye connections to kill roots, without harming trees or other aboveground vegetation.

**RESULT** / "A few months after the foam was applied in January, we ran our CCTV through the pipe, and the roots had decayed, like you see cigarette ashes crumble," says Gary Harter, operations manager for the city of Liberty. "Our camera made it right through the pipe. We haven't had any blockages since. This has saved our city a tremendous amount on time lost wages and expenses. We can rededicate the time we were spending to different areas of the town." 800-447-6687; [www.dukes.com](http://www.dukes.com)

### TOWN FINDS EASY SOLUTION FOR ROOT INTRUSION ISSUES



**PROBLEM** / The town of Brandon, Vermont, dealt with continuing root intrusion issues in an 8-inch gravity sewer that originated on Pearl Street, and runs along Maple Street. The route has a couple of Crimson King maple trees that the town considers aesthetically valuable, but have large and far-reaching root structures belowground.

**SOLUTION** / RootX was deposited in the manhole at the end of the line on Pearl Street along with about 20 gallons of water. "We treat the line without having to spend about half an hour with the rodding machine and/or 15 minutes with the flusher machine dragged behind the truck," says Stive Cijka, town of Brandon chief operator. "We have 12 river crossings and many are not in a spot to drive a truck up to with a flushing machine, but we can always carry a 40-pound box of RootX to the manhole to treat the line where our machinery cannot reach."

**RESULT** / "There are only two of us on the crew to maintain six pump stations, 22 miles of sewer line, and a 700,000-gpd design extended aeration wastewater plant," Cijka says. "Being I am 61 and my assistant is 55, we strive to work smarter not harder. The town manager has allowed us to buy a small pallet of RootX at a time to treat a substantial area, so in approximately 4.5 years we would have treated the whole system once." 800-844-4974; [www.rootx.com](http://www.rootx.com) **c**









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 100,001-200,000  200,001-500,000  500,001+

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## PRODUCT SPOTLIGHT

### INSPECT PIPELINES ON A BUDGET

By Craig Mandli

Sewer line cleaning and inspection were once distinctly separate industries. However, that line is getting blurred as inspection camera equipment becomes more affordable and compact. Southland Tool, a longtime provider of sewer cleaning tools and accessories, has now entered the inspection market with the affordable ST-PRO CAM jet camera nozzle.

“It’s designed to give every jet user the ability to inspect and record the conditions of the sewer line, ensuring accurate repairs the first time for a very reasonable price,” says Southland Tool President David Pryor. “We integrate our self-leveling camera head with GoPro technology, along with 6- to 8-inch adjustable skids, three high-quality LED lights and a rear thrust nozzle, all for an affordable price point aimed at contractors being able to put one on every truck.”

The unit can be ordered compatible with 1/2-, 3/4- or 1-inch hose. If inspection of larger lines is required, a set of adjustable wheeled skids is available for inspecting either 10- to 12-inch or 15- to 18-inch lines. The unit’s GoPro 7 camera is designed for blind viewing, so all the technician needs to do is turn on the camera, send it down the line and let it video tape the targeted section of sewer. Once the unit is retrieved, the technician can then view the recorded footage on their smartphone or tablet via a free app using Bluetooth connectivity. They can also down-



load the video and archive it for future reference onto a computer.

“The ST-PRO CAM gives all users the ability to inspect a sewer manhole in real time with a set of poles and our fiberglass pole attachment,” Pryor says. “You also have the ability to mark concern points on the video via the app. And as an added bonus, even if you don’t have a jetter, this system can be pushed with our sewer rods.”

The kit includes 6- to 8-inch adjustable skids and nylon wheels, a self-leveling GoPro 7 camera housed in a stainless steel enclosure, a rear 1-inch thrust nozzle with eight jets and plugs included for lower gpm needs, three adjustable 1,600 lumen LED lights, and a mini SD card and card reader. The camera offers three hours of runtime.

“Just think: you can clean a line, then verify its condition without waiting,” Pryor says. “It’s filling a much-needed void in the industry.” 714-632-8198; [www.southlandtool.com](http://www.southlandtool.com)

### 1 // MILWAUKEE TOOL M12 FUEL COMPACT BAND SAW

Milwaukee Tool’s M12 FUEL compact band saw is light and compact, and users can easily maneuver the saw into tight spaces one-handed. A POWERSTATE brushless motor enables the band saw to deliver the fastest cutting speed in Unistrut with a cut capacity of 2 1/2 by 2 1/2 inches. To minimize fatigue, the band saw is optimized for overhead use and weighs only 6 pounds. For one-handed use, the band saw features integrated blade covers and a larger cut capacity than the M12 subcompact band saw. 800-729-3878; [www.milwaukeetool.com](http://www.milwaukeetool.com)



### 2 // BOSCH POWER TOOLS HEATED JACKET AND HOODIE

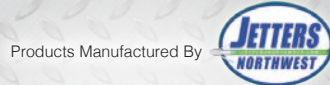
The GHJ12V heated jacket and GHH12V-20 heated hoodie from Bosch Power Tools includes enhanced, modern designs and light, durable materials, and features three temperature settings for enhanced control and comfort. Strategically placed heat zones in the chest and lower back offer thorough, efficient heating in a lightweight, easy-to-wear package. Both offer a portable adapter that delivers fast charging to phones and other devices. 877-267-2499; [www.boschtools.com](http://www.boschtools.com)







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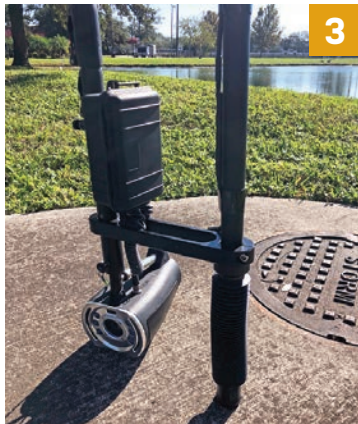


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### 3 // CUES QZ3 ADVANCED PORTABLE INSPECTION CAMERA

The QZ3 Advanced lightweight, portable, HD wireless video inspection pole camera from CUES is designed to provide safe viewing in industrial or environmental areas with no-man entry. The QZ3 can also be used to locate lateral services or to identify blockages at manholes, access ports or other entry points without entering the line or structure. Added features over the basic model include motorized height and tilt and laser distance measurements. The camera is mounted on a lightweight, telescopic carbon fiber pole that can extend up to 24 feet, and an optional 34-foot pole is available. The 1080p camera features a 360-to-1 zoom with built-in image stabilization, automatic focus and distance-to-defect measurement. Self-contained waterproof Multiple Aspheric Projection lighting, including six LED spotlights, works in pairs and focuses at different lengths, to provide enhanced, detailed viewing of cracks, breaks, pipe separations, scale and various defect conditions. The QZ3 Advanced also includes two diffused LED floodlights for evenly lit manhole inspections. 800-327-7791; [www.cuesinc.com](http://www.cuesinc.com)



4

### 4 // BOSS VAC VACUUM EXCAVATION TRAILER

Boss Vac's vacuum excavation trailer is ideal for removing wet or dry materials, cleaning emergency road spills or hazardous waste, keyholing, trenching, cleaning irrigation canals, drilling oilfields and completion sites, removing debris from catch basins, locating underground utilities without impact damage and much more. The tandem-axle trailer is 9.5 feet wide and 21.5 feet long with the highest point reaching 7.5 feet tall with options for a gooseneck, skid or truck mount. Included on the trailer is everything needed to tackle the job from the moment it's received, including hoses, fittings and couplings, to tried and true engines. On the water side, a 9 hp engine pushes 4 gpm at 4,000 psi while a separate 24 hp engine powers a vacuum generating up to 300 cfm in either gasoline or diesel options. For debris storage, customers can choose between a 3.96-cubic-yard (800-gallon) or a 2.47-cubic-yard (500-gallon) storage tank. 405-885-1234; [www.bossvac.com](http://www.bossvac.com)





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## ITpipes welcomes new business development manager

Mark Grabowski has joined ITpipes as business development manager. As business development manager, he will oversee enhancing the customer experience, improving relationship marketing and managing the overall brand and marketing activities for the firm's inspection software platform.



Mark Grabowski

## Ashland Pump announces name change, acquisition

Ashland Pump announced it acquired Water Source, a supplier of accessories and pumps for the sump, sewage and water systems markets. The Water Source team, currently located in Norwalk, Ohio, will be relocating to the Ashland, Ohio, facilities. Their key staff will remain with the company. In addition to the acquisition, Ashland Pump is also changing its corporate name to Ashland Water Group, effective Jan. 1, 2021.

## Grand opening of Renegade Equipment, Sales and Consulting

Mike Grieco announced the opening of his new business, Renegade Equipment, Sales and Consulting, based in Longmont, Colorado. The company is a specialized construction equipment, sales and rental-based company committed to servicing the needs of buyers and sellers throughout the process of acquiring or selling specialized equipment.



Mike Grieco

## Vactor launches virtual tours

Vactor, a subsidiary of Federal Signal Corp., announced the launch of contactless, virtual tours that offer customers a detailed and photorealistic viewing of equipment. The tours are now available for many of the company's models, including the Vactor 2100i PD and the Vactor 2100i Fan, and are accessible through Vactor authorized dealers. The guided 3D tours leverage state-of-the-art software to develop high-quality and realistic digital models, allowing visitors to walk around the equipment and learn more about cutting-edge technology and features.

## US Jetting's Danielle Young passes away

US Jetting's Danielle Young, 50, passed away on Dec. 16 after a long illness. She served as a sales representative for the company for 18 years. An avid animal lover, she is survived by her husband, Kevin. A celebration of life will be scheduled for a later date.



Danielle Young

## Custom Truck One Source to combine with Nesco

Custom Truck One Source has entered into an agreement to combine with Nesco, another leading provider of specialized truck and heavy equipment solutions including rental, sales and aftermarket parts and services. Together, the combined company will operate on a national scale with over 1,800 employees, 46 company-operated locations and a rental fleet that will be nearly double in size with almost 9,000 units and more than \$1.3 billion in combined OEC. The company will also have more than 400 service technicians and 120 mobile service technicians available for support.

## Vac-Con names new dealer for western Canada

Vac-Con announced that Westvac Industrial will be the exclusive dealer of Vac-Con products in western Canada, effective Jan. 1. Westvac, established in 1997, operates three divisions — lifts and automotive, fleet and fire — offering a range of products including heavy-duty lifts, wheel service equipment, sewer inspection equipment, hydroexcavators, refuse collection vehicles, street sweepers and fire apparatus. Westvac provides coverage from four locations all offering full maintenance, service, parts and training.

## Wastequip acquires ContainerPros

Wastequip has acquired Carlsbad, California-based professional waste services company, ContainerPros.

This acquisition enhances the existing cart assembly and delivery service offering provided by Wastequip's Toter brand by adding a team with over 20 years of experience in providing cart assembly, delivery and maintenance services for waste haulers and municipalities. Additionally, the acquisition lays the groundwork for Wastequip to include the repair and refurbishment of steel containers as part of its service offering. ContainerPros' founding partners, Mark Merhab and Gary Lima, will remain with the company. **c**

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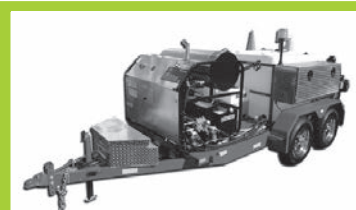
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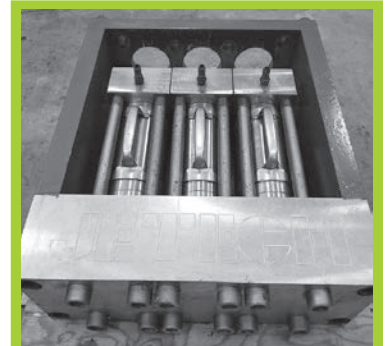


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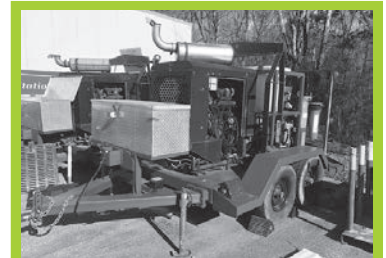


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*"The Revolution machine is our go-to for clearing roots in residential lines. It quickly and effectively clears the line and saves the customer from having to do costly repairs. We also rely on it in commercial buildings with cast iron pipes for rapidly descaling problem lines."*

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