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A drain-cleaning firm spinoff proves successful for a Philadelphia-area plumbing company

Page 22



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MECHANICAL  
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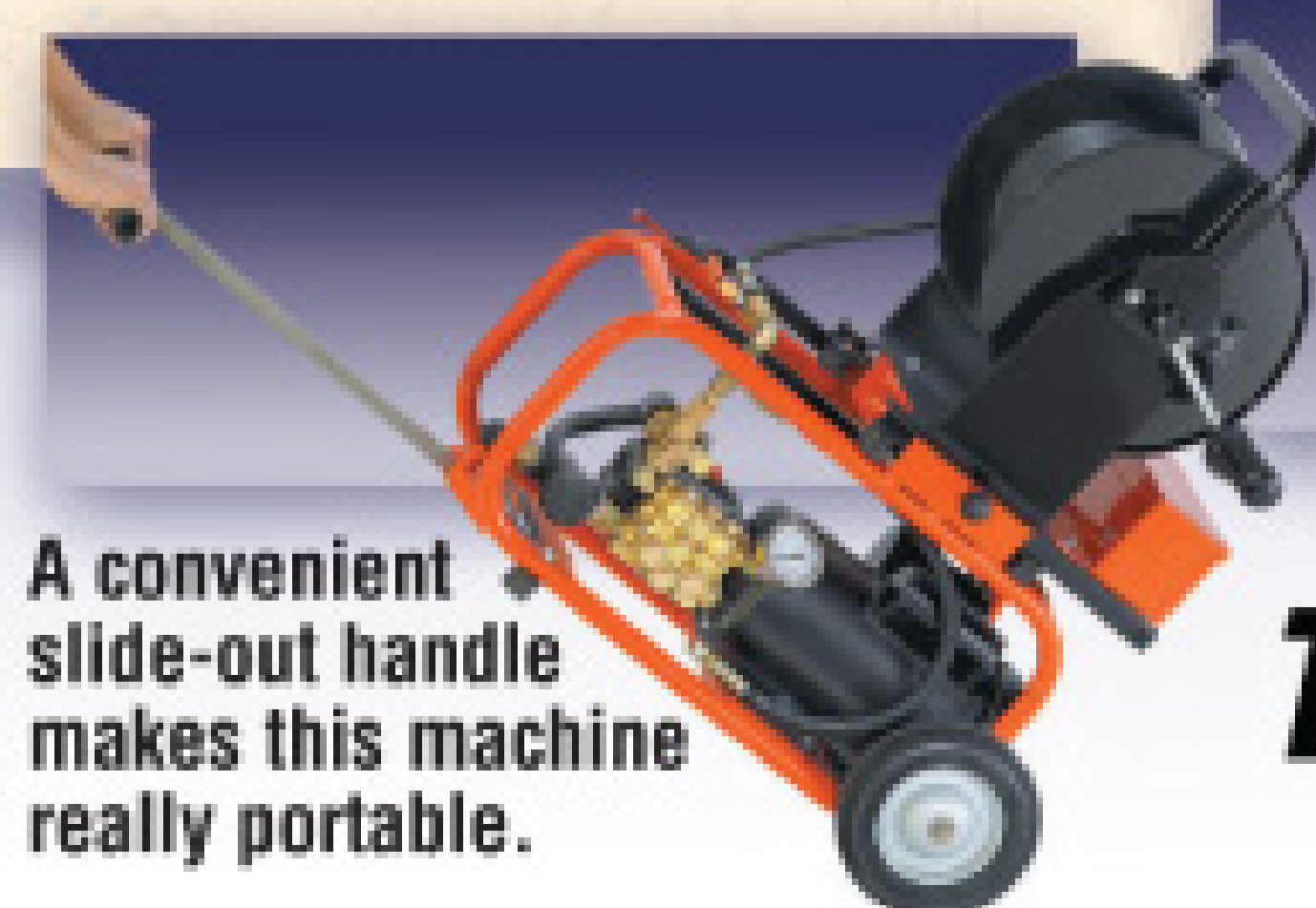
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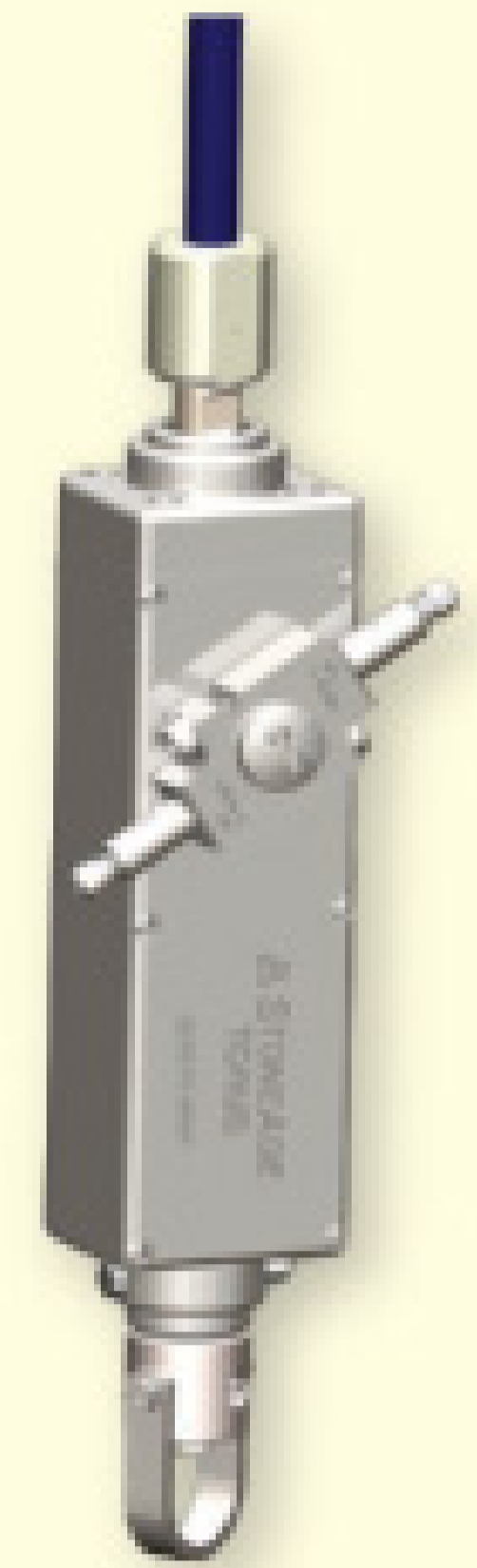
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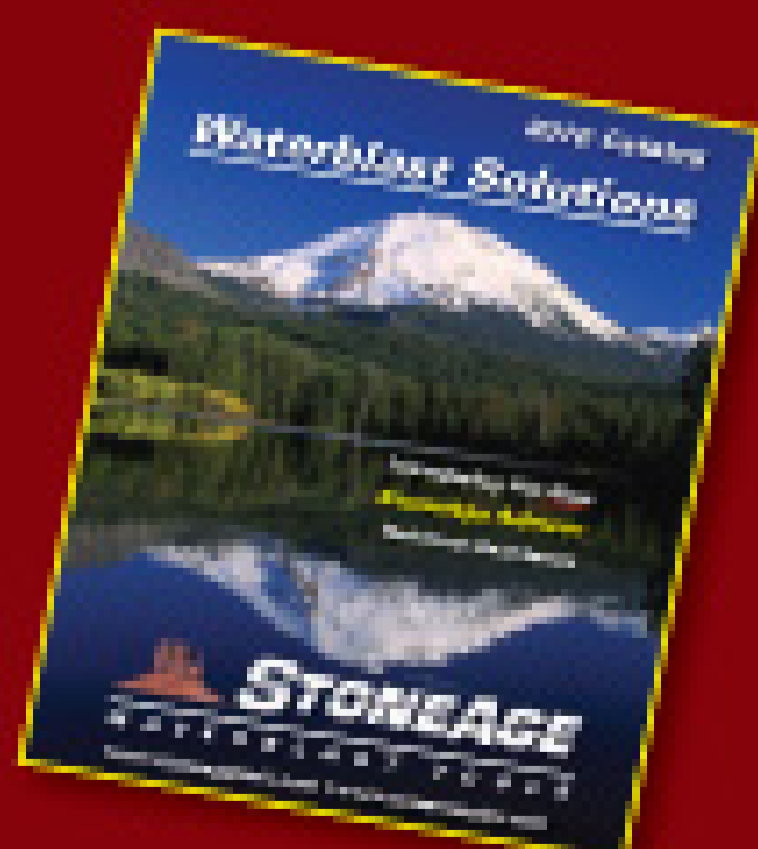
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## ARTICLES

### 22 MISSION ACCOMPLISHED

On the cover: Action Sewer & Drain Services technician Joe McDonough fuses pipe in preparation for a pipe bursting project. The company has thrived as a spinoff from a successful plumbing firm. (Photography by Jack Ramsdale)

### 28 ROOTING OUT REVENUE

Drain cleaning and root control form the backbone of work for Jet-O-Rooter of Syracuse, N.Y., a company looking to grow through personalized service.

By Marian Bond

### 32 2010 EXPO: WORTH CELEBRATING

30th Pumper & Cleaner Environmental Expo adds a new-product display, interactive floor plan, and Women in the Industry seminar to its proven mix of exhibits and education.

By Ted J. Rulseh

### 38 TECH PERSPECTIVE: ALL WOUND UP

Spiral-wound pipe lining uses a continuous strip of plastic material to create a continuous interior surface offering a no-cure solution.

By Peter Kenter

## REGULAR FEATURES

### 10 FROM THE EDITOR: WIVES: IT'S YOUR TURN

What's it like to be part of a family contracting business? *Cleaner* invites you to share your stories of how you contribute, and how you cope with the challenges.

By Ted J. Rulseh

### 16 SAFETY FIRST: AVOIDING THE FLU

Here's some advice on keeping your people from contracting flu viruses this season.

By Ted J. Rulseh

### 54 MONEY MANAGER: MORE PROFITS: MONTH-BY-MONTH

Here's a one-step-at-a-time approach to improving the management of your money, your business, and your life in the new year ahead.

By Erik Gunn

### 60 BETTER BUSINESS: THE WANDERER

Never underestimate what a talented rover can do to enhance your service, improve your technician team, and generate more revenue for your business.

By Peter Morici

## COMING IN JANUARY

### Special Issue: Pipe Bursting Methods and Projects

- Reader Pipelines: Contractors recall their most challenging repairs
- Tough Job: Pipe bursting upsizes a condo project sewer
- Tech Perspective: Tips for cleaning small drain lines
- Profile: Western Refinery Services, Ferndale, Wash.
- Profile: Lincoln Sewer & Drain, Mishawaka, Ind.

### 44 ROOT OF THE PROBLEM

Manufacturers offer a wide range of cutting systems to remove roots from underground piping and restore normal flow to sewer lines.

By Benjamin Wideman

### 50 JETTING BY NUMBERS

By Ken Wysocky

### 56 ABERNETHY WAS A VACUUM TRUCK PIONEER

### 64 MONEY MACHINES: TOP-FLIGHT ORGANIZATION

A well-stocked truck keeps All-Pro Plumbing's owner on task, and sharp graphics keep those customer calls coming.

By Ken Wysocky

### 68 READER PIPELINES: RIP, CUT, SAW, JET

Contractors share their preferences in jets and mechanical equipment for getting stubborn roots out of sewer laterals and mains.

By Ken Wysocky

### 70 TOUGH JOB: RIPPLES AND RIDGES

A new bursting head coupled with pneumatic assist enables a California contractor to upsize a corrugated culvert and keep a boulevard open.

By Scottie Dayton

### 72 PRODUCT NEWS

Product Spotlight: EC-5 Camera Serves as Entry-Level Inspection System

By Ken Wysocky

### 73 INDUSTRY NEWS

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- A**
- A Corp/Rooterman ..... 71
  - Allan J. Coleman Co. .... 21, 59



Aqua Mole Technologies ..... 41

- 
- Aries Industries, Inc. .... 19
  - Avanti International ..... 14

**B**



Bowman Tool Co. & Systems ... 58

- C**
- Cable Center, The ..... 12, 67
  - Cam Spray ..... 66



Central Oklahoma Winnelson .... 52

Chempure Products/Root Rat ... 24



Cloverleaf Tool Co. .... 14, 58



CUES, Inc. .... 25

**D**



Drainables Direct ..... 63



Duracable Manufacturing Co. .... 52

- E**
- Easy CAM, LLC ..... 37



Electric Eel Mfg. .... 83



Envirosight, LLC ..... 5



ENZ USA, Inc. .... 56

**F**



FS Solutions ..... 53

- G**
- GapVax Incorporated ..... 82



General Pipe Cleaners ..... 2

Gorlitz Sewer & Drain, Inc. .... 57

Granite Leasing Co. .... 41



Guzzler Mfg. Inc. .... 11

**H**



Hannay Reels ..... 68

Hi-Vac Corporation ..... 43

**J**



Jetstream of Houston ..... 17

Jetter Depot ..... 54

Jettters Northwest ..... 26

**K**



KEG Technologies Inc. .... 48

Ken's Truck & Equipment ..... 73

Ken-Way Corp. .... 56

KMH Equipment, Inc. .... 58

Kroy Industries ..... 42

**L**

- Lansas Products Mfg. .... 40
- LaPlace Equipment Company .... 46



LMK Enterprises ..... 27

Logiball Inc. .... 26

**M**

- Matrix Payment Systems ..... 46
- MAX-LIFE Mfg. .... 45
- MaxLiner, USA ..... 41
- Mongoose Jettters ..... 20



Moro USA East, Inc. .... 65



MyTana Mfg. Company, Inc. .... 49

**N**



Northcutt Co./Scooter Video .... 55



NozzTeq, Inc. .... 62

**P**



Pat's Pump & Blower ..... 26



Perma-Liner Industries ..... 13




Pipe Genie Manufacturing ..... 33

POSM Soft LLC ..... 42



PrimeLine Products, Inc. .... 63



Pulsar 2000 ..... 48

**R**

- RABCO ..... 65



Ratech Electronics Ltd. .... 40

Relining Technologies, LLC ..... 9

RIDGID ..... 7



RS Technical Services ..... 61

**S**

- Safety Corporation of America .. 48
- Sekisui SPR Americas Inc. .... 40

- Sewer Equipment & Supplies .... 15



Shamrock Pipe Tools, Inc. .... 51

**South Coast Sewer Equipment Inc.**

- South Coast Equipment ..... 46



Spartan Tool, LLC ..... 84



StoneAge, Inc. .... 4

**T**



- T&T Tools, Inc. .... 20
- Tarheel Underground Camera .... 66
- TRIC Tools, Inc. .... 18
- TRY TEK Machine Works, Inc. .. 73

**U**

- US Jetting, LLC ..... 47



USB Sewer Equipment Corp. .... 33

**V**

- Vac-Con, Inc. .... 3
- Vactor Manufacturing ..... 12
- Vacuum Sales, Inc. .... 18
- Vaporooter ..... 31



Vivax Corp. .... 62

**W**

- Water Cannon Inc. .... 69
- Westmoor Ltd. .... 66

**Classifieds** ..... 77-79

**Marketplace** ..... 74-76

**Truck Stop** ..... 80-81

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## Wives: It's Your Turn

What's it like to be part of a family contracting business? *Cleaner* invites you to share your stories of how you contribute, and how you cope with the challenges.



Ted J. Rulseh

Some years ago I started a book publishing business on the side and asked my wife, Noelle, to be in charge of sales.

She agreed enthusiastically, and so we embarked on the venture together. Unfortunately, there were a few problems with the arrangement. First of all, she had no experience in sales. Second, and far more important, there were times we didn't agree on what to do and how to do it.

It's one thing to disagree with

your sales director, and quite another to disagree with your spouse. So things got delicate. It's hard enough at times to keep a marriage on an

I had to make a choice between the marriage and the business, and that was really no choice at all: I folded up the business.

We'd like to tell *Cleaner* readers about the joys, the struggles, the satisfaction, and the frustrations of being part of a family business – even if not as a day-to-day participant but as a support system back home.

even keel, and when you add a business to the mix, well... So in the end

All this is a way of saying I have at least a little empathy for the many husband-wife teams who run contracting businesses together, and for spouses who come to feel at times that their partners are more married to the business than to them.

### Family matters

After nine years editing this magazine and attending the annual Pumper & Cleaner Environmental Expo International, I know how important wives are to cleaning businesses. (Yes, some companies are owned and run by women, but in the vast majority of cases, it's the husband on the front line.)

Wives play a variety of roles: keeping the books, answering phones, screening job applicants, fielding customer complaints, selling jobs, negotiating purchases, dispatching – everything right up to and including work in the field. Yet (I must admit this), our stories often understate their contributions.

So wives, now it's your turn. We'd like to tell *Cleaner* readers about the joys, the struggles, the satisfaction, and the frustrations of being part of a family business – even if not as a day-to-day participant but as a support system back home. We'd like to know:

- How do you balance work life with leisure time?
- How do you make sure you invest enough time with the kids?
- How often do you get away from the business and enjoy focused family time?
- What happens when you and your husband disagree on an important business decision?
- How do you keep issues at work from spilling over into the household?
- What is the greatest part of owning and running a family business?
- What is the hardest part?

### Learning from each other

Using information you provide, we will develop articles about the personal side of being a partner in a company as well as a marriage. By sharing your experiences, you'll help other family business owners, such as those you meet each year at the Expo, to deal with the challenges they face.

Just send your thoughts and ideas to me at [editor@cleaner.com](mailto:editor@cleaner.com). Or if you prefer, give me a call toll-free at 877/953-3301. We look forward to starting some lively exchanges about how to mix business and family – happily and successfully. ■

Happy Holidays  
from our door  
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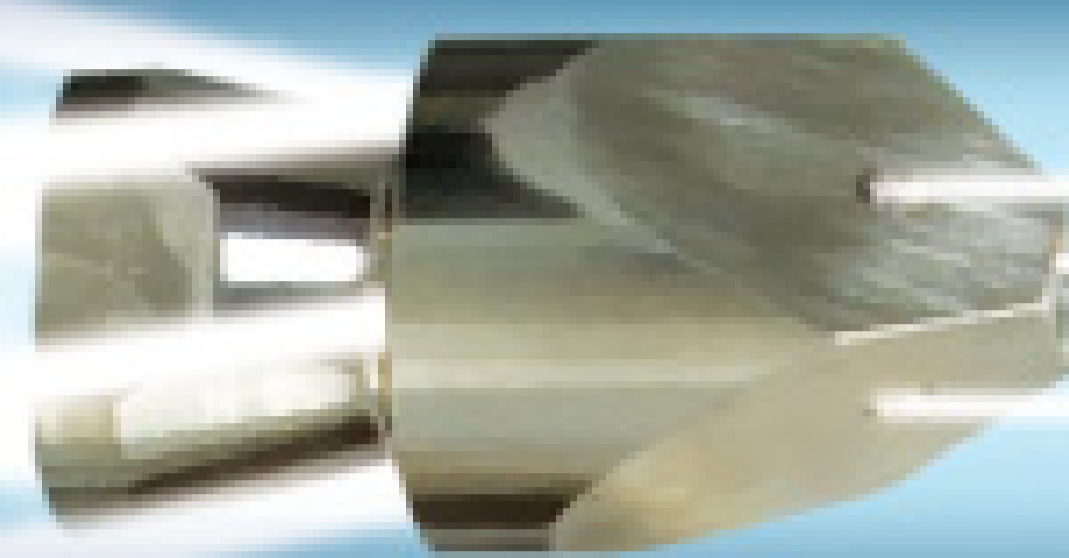
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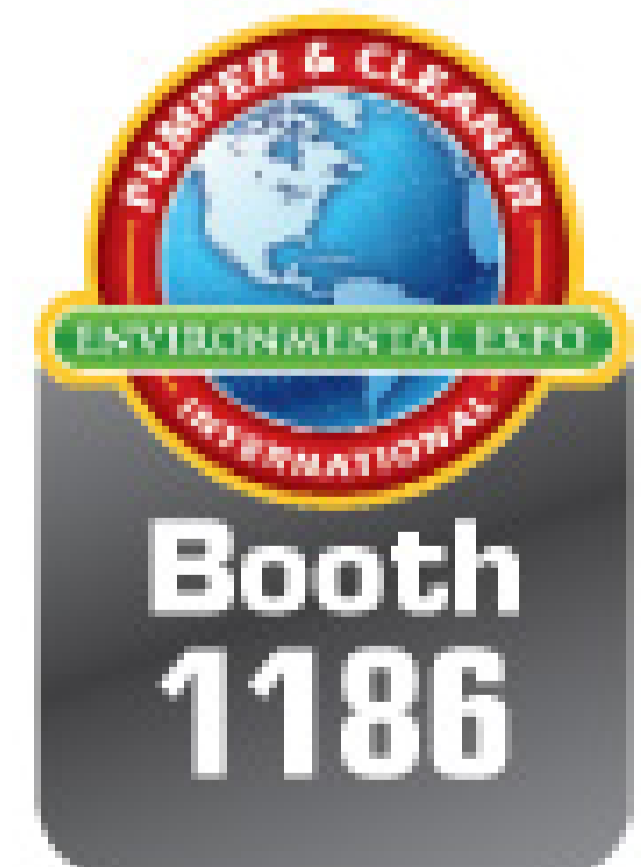


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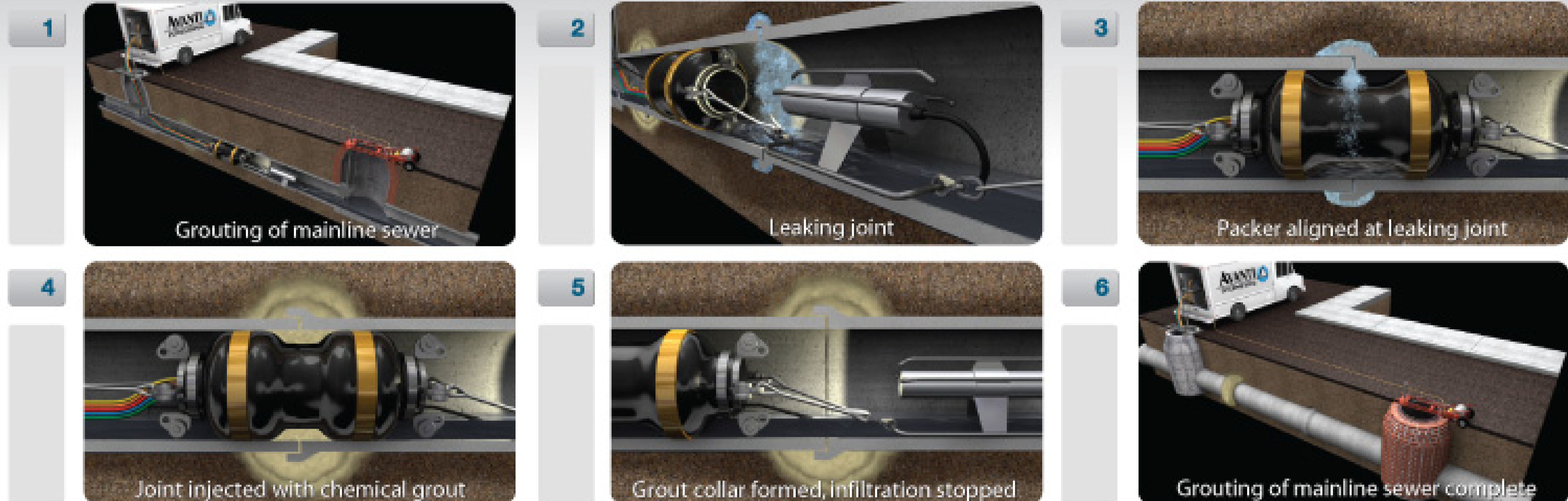




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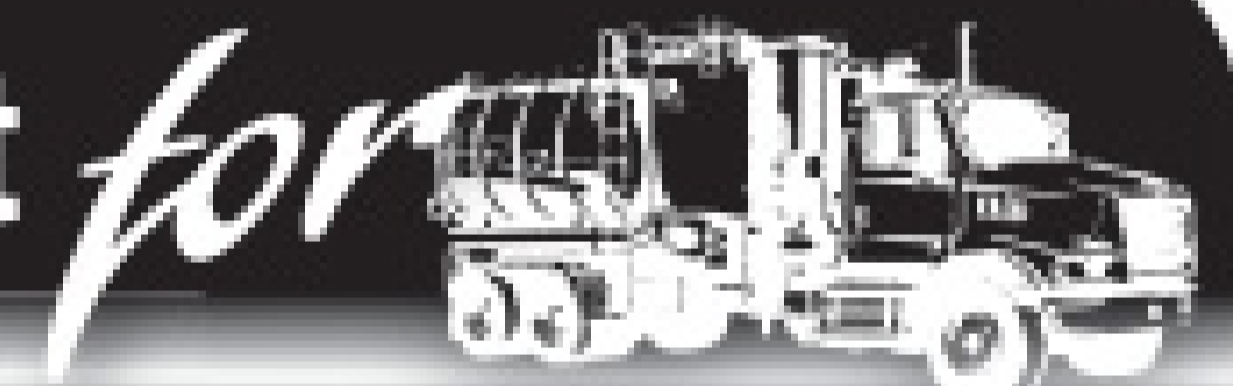
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# Avoiding the Flu

Here's some advice on keeping your people from contracting flu viruses this season

By Ted J. Rulseh

**T**hey no longer call it swine flu, but the new strain of influenza we started hearing about last spring is still with us. And in any case, more typical strains of flu remain a threat to health.

Whether it's the H1N1 virus that has raised concerns about a pandemic, or any other flu virus, there

## Safety FIRST

remains the risk of its transmission at work. OSHA is trying to raise awareness of various controls employers can use to reduce their people's exposure. The basic types of controls are:

- Engineering controls.
- Administrative controls.
- Work practices.
- Personal protective equipment (PPE).

OSHA suggests that employers use a combination of control methods

consider which kinds of measures your business might employ as the flu season takes hold.

**Engineering controls** involve making changes to the workplace itself. These controls tend to be the most effective because they make permanent changes that reduce exposure and do not rely on changes in workers' or customers' behavior. Examples would include installing filtration systems or physical barriers that would prevent the transmission of the virus. For cleaning contractors working on multiple sites, this approach may have limited value.

**Administrative controls** are those that modify workers' work schedules and tasks in ways that minimize their exposure. Examples include creating policies that encourage ill workers to stay at home without fear of reprisals, discontinuing non-essential travel to locations with high incidence of flu, developing emergency communications plans, and maintaining a forum for answering workers' concerns.

When defining safe work practices, it is a good idea to ask workers for their suggestions, since they have first-hand experience with the tasks. Managers, supervisors and laborers then need to understand and follow any practices that are established. Examples include:

- Providing resources that promote personal hygiene (such as providing tissues, no-touch trash cans, hand soap, hand sanitizer, disinfectants and disposable towels for people to clean their work surfaces).
- Encouraging workers to get a seasonal influenza vaccination.

exposure situations and during emergencies. The appropriate types of PPE for use during a pandemic must be based on the risk of contracting influenza while working and the availability of PPE. It is important for PPE to be:

- Selected based upon the hazard to the worker.
- Properly fitted (and for some items, such as respirators, periodically refitted).
- Conscientiously and properly worn.
- Regularly maintained and replaced in line with manufacturer specifications.

**Now is a good time to consider which kinds of preventive measures your business might employ as the flu season takes hold.**

to help prevent the spread of pandemic influenza. Each type of measure has pros and cons in terms of effectiveness and cost. Now is a good time to

**Work practices** encompass procedures for safe and proper work that help reduce the duration, frequency or intensity of exposure.

## SIMPLE AND EFFECTIVE

The U.S. Centers for Disease Control and Prevention describes a series of simple measures you can take in the workplace (and for that matter anywhere else) to help keep flu viruses from spreading. The advice may sound ridiculously simple, but it is also proven effective.

- Avoid close contact with people who are sick.
- When you are sick, keep your distance from others.
- If possible, stay home from work and errands when you are sick.
- Cover your mouth and nose with a tissue when coughing or sneezing.
- Wash your hands often.
- Avoid touching your eyes, nose or mouth. Germs often spread when people touch those areas after touching something contaminated.

For more information, visit [www.cdc.gov/flu/protect/stopgerms.htm](http://www.cdc.gov/flu/protect/stopgerms.htm).

- Providing workers with up-to-date education and training on influenza risk factors and protective behaviors (cough etiquette; avoiding touching eyes, nose and mouth; and proper care of PPE).
- Providing education and training materials in an easy-to-understand format and in the appropriate languages and literacy levels.
- Developing procedures to minimize contact between workers, and between workers and clients.
- Properly removed and disposed of.
- If reusable, properly removed, cleaned, disinfected and stored.

Used correctly, PPE can help prevent some exposure, but it should not take the place of other prevention methods just described.

For more information on what employers can do to protect workers, refer to OSHA Publication No. 3327, *Guidance on Preparing Workplaces for an Influenza Pandemic*, available at: [www.osha.gov](http://www.osha.gov). You can also consult [www.pandemicflu.gov](http://www.pandemicflu.gov) to get current, detailed information about all aspects of pandemic influenza. ■

**Personal protective equipment** includes respirators, face shields, goggles and disposable gloves. The use of PPE may be indicated during certain

## Correction

A story about McGill's Industrial Services in the November issue of *Cleaner* included incorrect contact information for Smith Industries Ltd., the company that built vacuum trucks for McGill's. Smith Industries Ltd. is located in Saskatoon, Sask., and can be reached at 306/373-7622. The Web address is [www.smithvac.com](http://www.smithvac.com). We regret this error.



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*Steve Johnson, Division Manager  
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*Charlie Underwood, Operations Manager  
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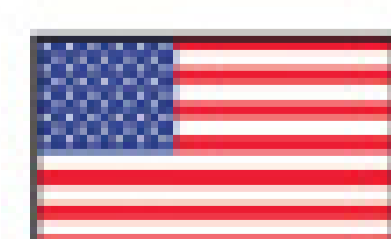
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**PHCC MEMBER**



Technician Joe McDonough fuses pipe in preparation for a pipe bursting project. (Photography by Jack Ramsdale)

# Mission Accomplished

**A Philadelphia-area contractor spins off a separate company for sewer and drain cleaning and builds it up alongside his established plumbing firm**

By Marian Bond

After 20 years in business with Rabe Plumbing & Heating, with a service line in sewer and drain cleaning, owner Kevin Rabe decided in 2006 to establish a sewer and drain business with a different name and identity.

There were two reasons. First, other plumbers who needed subcontract drain-cleaning services were reluctant to have another plumber's truck in the driveway. Second, he saw that with a business focused solely on sewer and drain cleaning, and service trucks set up properly for it, he could provide better service, grow that business, and increase his profit margin.

By early 2007, Rabe had established Action Sewer & Drain Services, right next door to Rabe Plumbing in Morton, Pa. (near Philadelphia), but with a totally separate appearance and business plan. After two years, and with salesman Dan Vasquill on the road promoting both companies, Rabe can truthfully say: Mission accomplished.

## Well-equipped

Rabe, a master plumber, started his plumbing company as a one-man operation with an apprentice, a full range of tools, and hope for the future. Over the years, he added sewer and drain tools, such as camera equipment, waterjetters, and pipe-bursting systems. "I was never shy about purchasing equipment to

provide different services for my customers," he says. "I got into jetting because I saw a benefit to my customers and a better margin for me, as well.

"But my one jetter was not working enough to have that investment. I needed to find ways to keep it busier. Having a jetter was like a power play. Having the equipment and capability opened the door for subcontracting for other plumbers who were not offering those services. It allowed us to work with them while we also focused on growing the business and opening doors to municipal work."

## PROFILE

### ACTION SEWER & DRAIN SERVICES, MORTON, PA.

OWNER:	Kevin Rabe
ESTABLISHED:	2007
SERVICES:	Sewer and drain cleaning, inspection, locating, pipe bursting
EMPLOYEES:	5
AREA SERVED:	Philadelphia metro area



## SIDE BY SIDE

When he set up a second company, Action Sewer & Drain Services, Kevin Rabe was fortunate that property next to Rabe Plumbing & Heating was available with an attractive lease.

"We would have the office support and the ability to communicate between the two," Rabe says. And yet the separate quarters would distinguish between the two companies. The location was an advantage, but not a determining factor.

Rabe Plumbing and Action Sewer & Drain now sit side by side, but otherwise there is no connection. They do not share a logo or an identity. As Rabe puts it, "They stand on their own two feet, with different customer bases, office personnel, and specially equipped vans."

Working out of his two locations 10 miles outside Philadelphia, he sees both sides prospering. From time to time, a Rabe Plumbing & Heating technician needs help from Action Sewer. And if another plumbing contractor needs drain services, Action Sewer will respond.

Clear delineation between the companies provides just the right platform to mine the many opportunities for growth and profit in both operations.

While his two companies can share equipment, Rabe believed the employees should be dedicated to one or the other company. In setting up Action Sewer & Drain, he transferred three of the long-time plumbing technicians to the new company, along with one office worker, and trained them for their specific jobs.

"These are the guys who take the jetter out for Action, and they are trained in every aspect of sewer and drain," Rabe says. Everyone who works for Action also has a journeyman plumbing license. "I think it is important that they are more knowledgeable than the average sewer and drain-cleaning company employee," Rabe notes.

### Outfitting the trucks

"In this business, you need to specialize and be aware of all the needs of the customer. The most important thing is to have your trucks set up with the right equipment so that your technicians can service customers efficiently. You don't want to do anything half way.

"We started offering these services in a small truck, but we found that in order to give the best service for the customer every time we were out there, we couldn't be wasting time going back and forth for equipment. You need every truck to be equipped with multiple tools and devices. We have one Ford E-550 with a 15-foot utility bed. It is a huge truck." Action also has a fully equipped 2007 Dodge Sprinter with a high roofline.

"I don't understand how other companies can provide these services in smaller trucks," Rabe says. "I know we have every tool that could be needed when we pull up to a job. Cameras, locator equipment, jettets, hand tools."

The vehicles have diesel engines because Rabe believes they offer more power, which he wants when towing a jetter filled with 600 gallons of water. He promotes both companies as having the best equipment and trucks in the business. "The truck that goes out is equipped and set up to provide that specific service," he says.

The plumbing company uses a mixture of 14 service and support vehicles – eight different styles of trucks with gasoline engines. The equipment list for Action includes:



Action Sewer & Drain Services excavates a pit as part of preparation for replacing an aging line by pipe bursting.

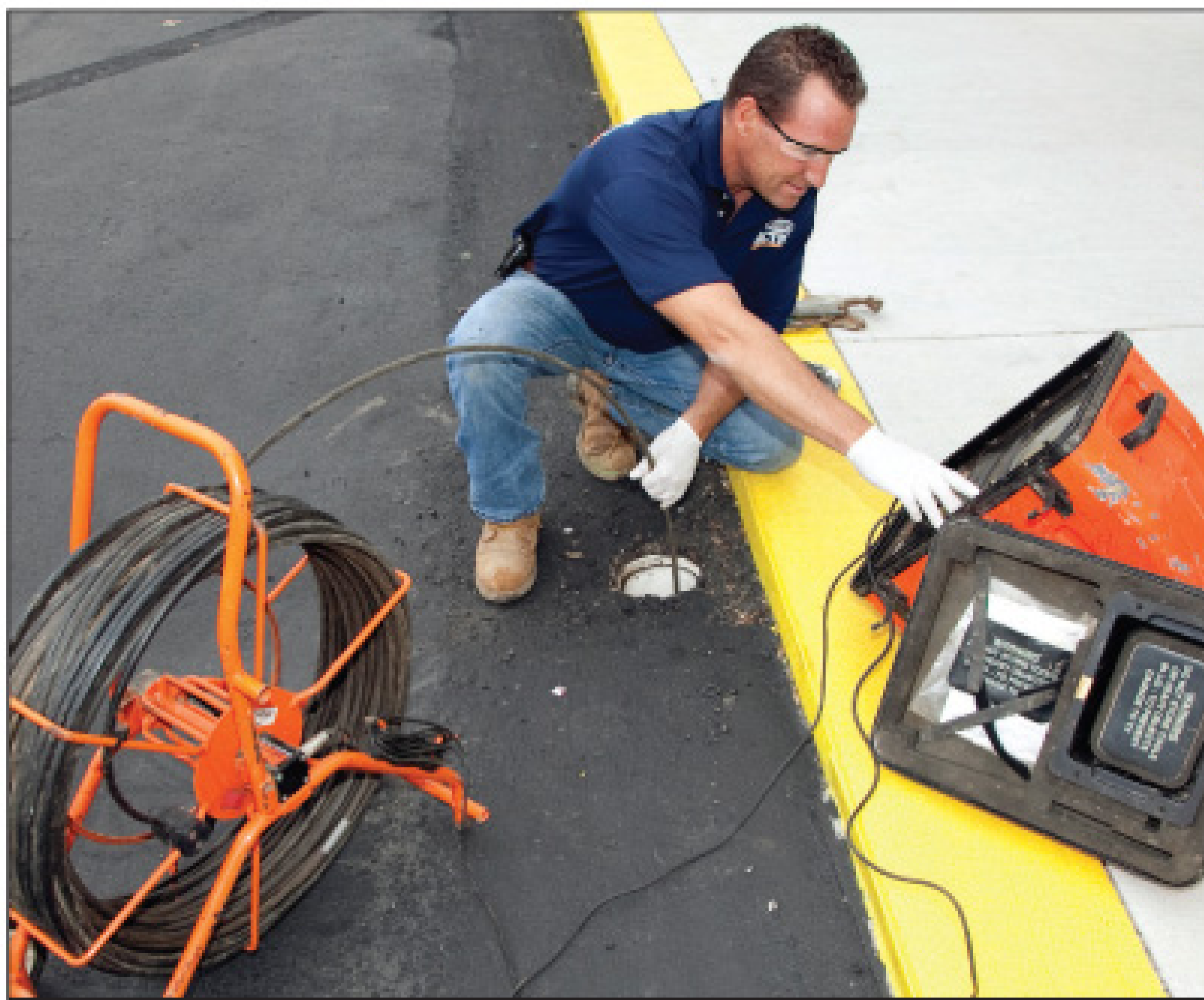
- Two trailer jettets from US Jetting (300-gallon tank with 18 gpm/4,000 psi, and 600-gallon tank with 18 gpm/4,000 psi).
- Aquatech, a division of Hi-Vac Corporation, combination truck (1,500-gallon tank, 60 gpm/2,000 psi).
- Cameras from General Pipe Cleaners and Spartan Tool LLC.
- Locators from Metrotech and Goldak Inc.
- Pipe-bursting system from TRIC Tools Inc.



Company owner Kevin Rabe (right) discusses a trenchless pipe repair project with Joe McDonough.

**"In this business, you need to specialize and be aware of all the needs of the customer. The most important thing is to have your trucks set up with the right equipment so that your technicians can service customers efficiently. You don't want to do anything half way."**

**Kevin Rabe**



McDonough televises a municipal line. The company does a significant amount of municipal and commercial work.

“With commercial work, you build a relationship with someone. You can have your truck or jetter there for a number of days, or weeks, versus just providing one or two hours of service for a residential customer. There is not as much travel, but a lot more billable hours.”

Kevin Rabe

### Measuring growth

Action Sewer & Drain did bring a significant net increase in business in its first year. However, with a salesperson on the road, meeting prospects and reaching out to plumbing contractors and commercial and municipal customers, business began to roll in.

“We are reaching out to apartment complexes and school systems, to restaurants for preventive maintenance, and to municipalities,” Rabe says. The company is also offering its services to high-rise buildings.

Rabe says owners of high-rise buildings seek out pure sewer and drain cleaners. They do not call plumbers to check the stacks (the systems that carry waste vertically from the top floor through to the basement to the building sewer). Action Sewer can take care of buildings as high as 20 stories, using a jetter on the ground and a long hose. Technicians use a rigging rope to pull the hose up to jet the stacks. “That is the best and most efficient way to do it,” Rabe says.

The company is now getting on the bid lists with municipalities and engineers. All told, the customer base in the plumbing operation has shifted from 90 percent residential to 50 percent, the balance being commercial. “With commercial work, you build a relationship with someone,” Rabe says. “You can have your truck or jetter there for a number of days, or weeks, versus just providing one or two hours of service for a residential customer. There is not as much travel, but a lot more billable hours.”

### The go-to guy

In operating two companies, Rabe has five technicians who have been with him from 10 to 20 years. No one person acts as a supervisor in either company. “I am the guy they come to when there is a question or problem,” says Rabe.

With the addition of another company, and the growth of both operations, Rabe sees his role changing significantly. “When I started my plumbing business, it was just me

and a helper,” he says. “I needed to perform the work myself. As the first business grew, and with the addition of Action, I needed to work on my business, not in my business.

“I need to be not so much a plumber but a business person and manager. That is the difference between what I did coming up and what I do now on a daily basis. But I believe that in order to have a successful business, you have to keep being good to your people and they will stay with you. That is the key. You look out for them and they look out for you.”

In 22 years, Rabe has never laid anyone off. His advice: If you don’t grow too fast, and if you don’t put all your eggs in one basket, then you can provide a variety of services and keep your people busy and invested in what they are doing for the company. It is a formula that has worked well so far, on both sides of the property in Morton, Pa. ■

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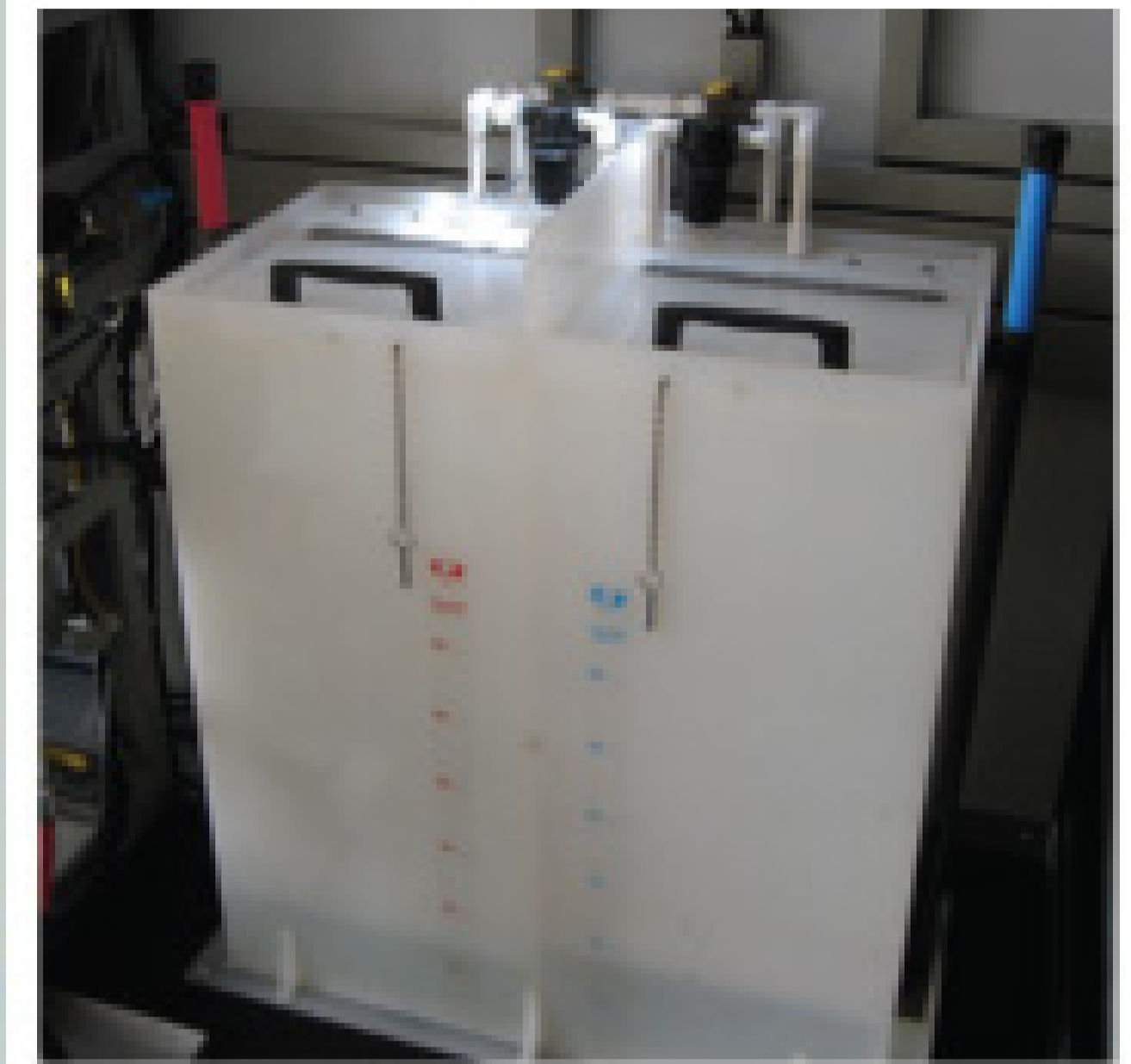
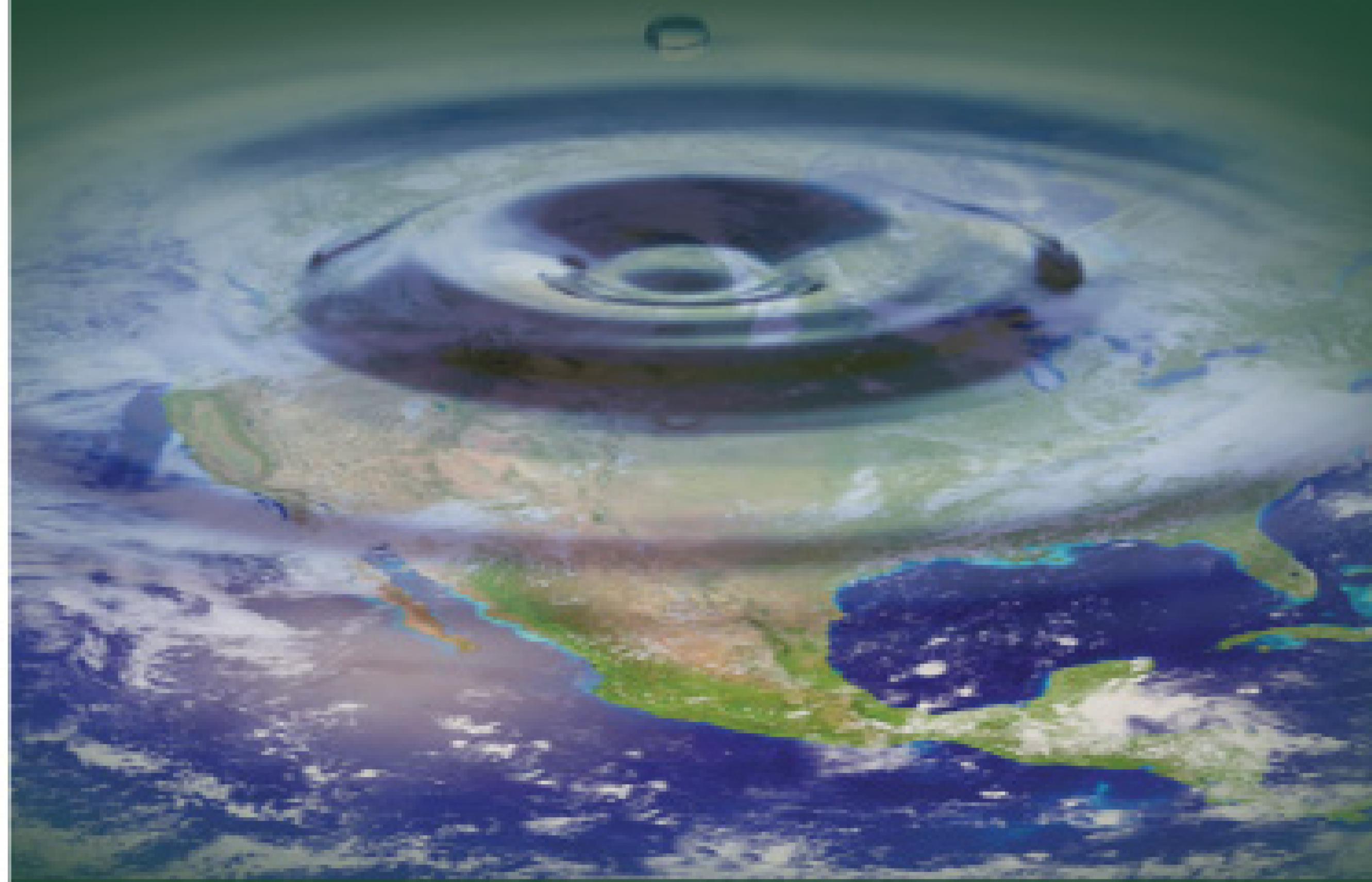
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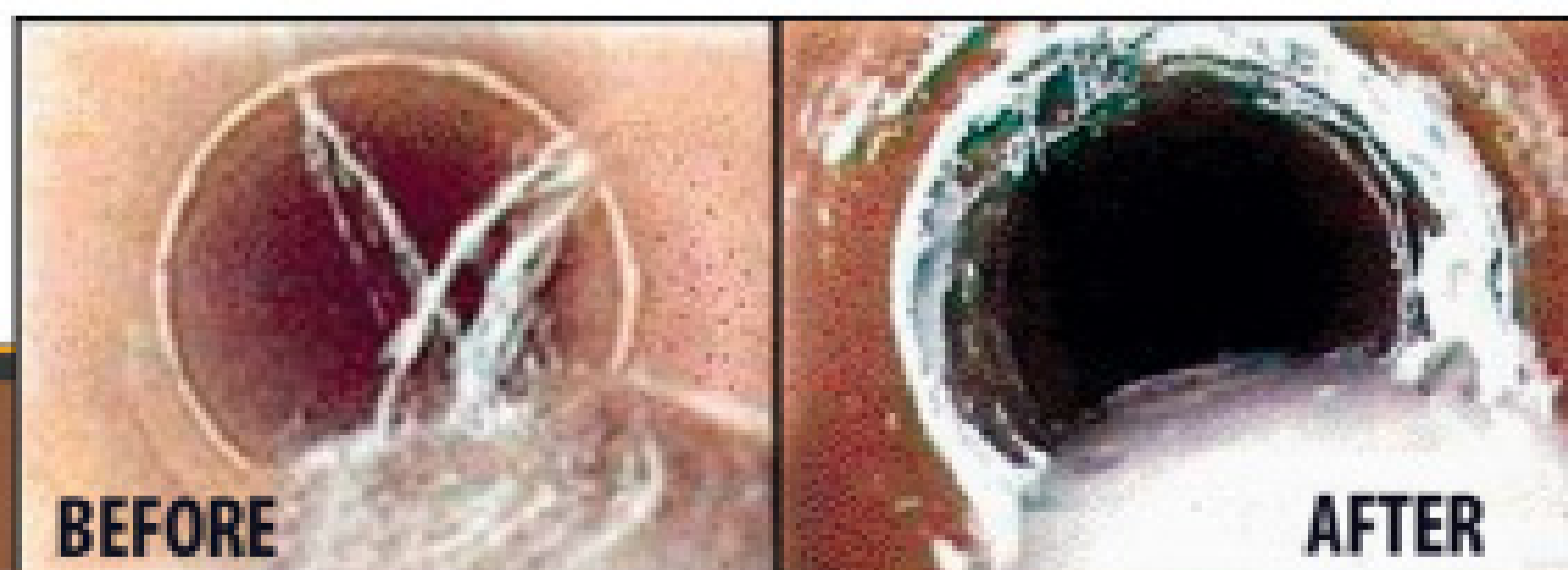
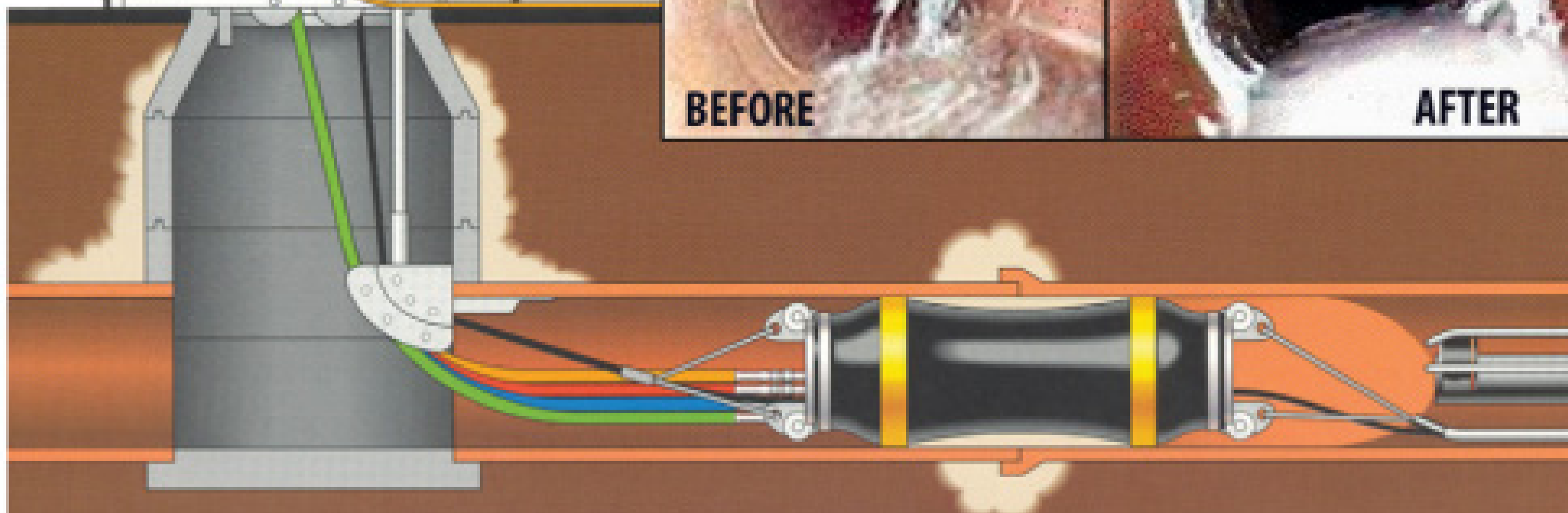
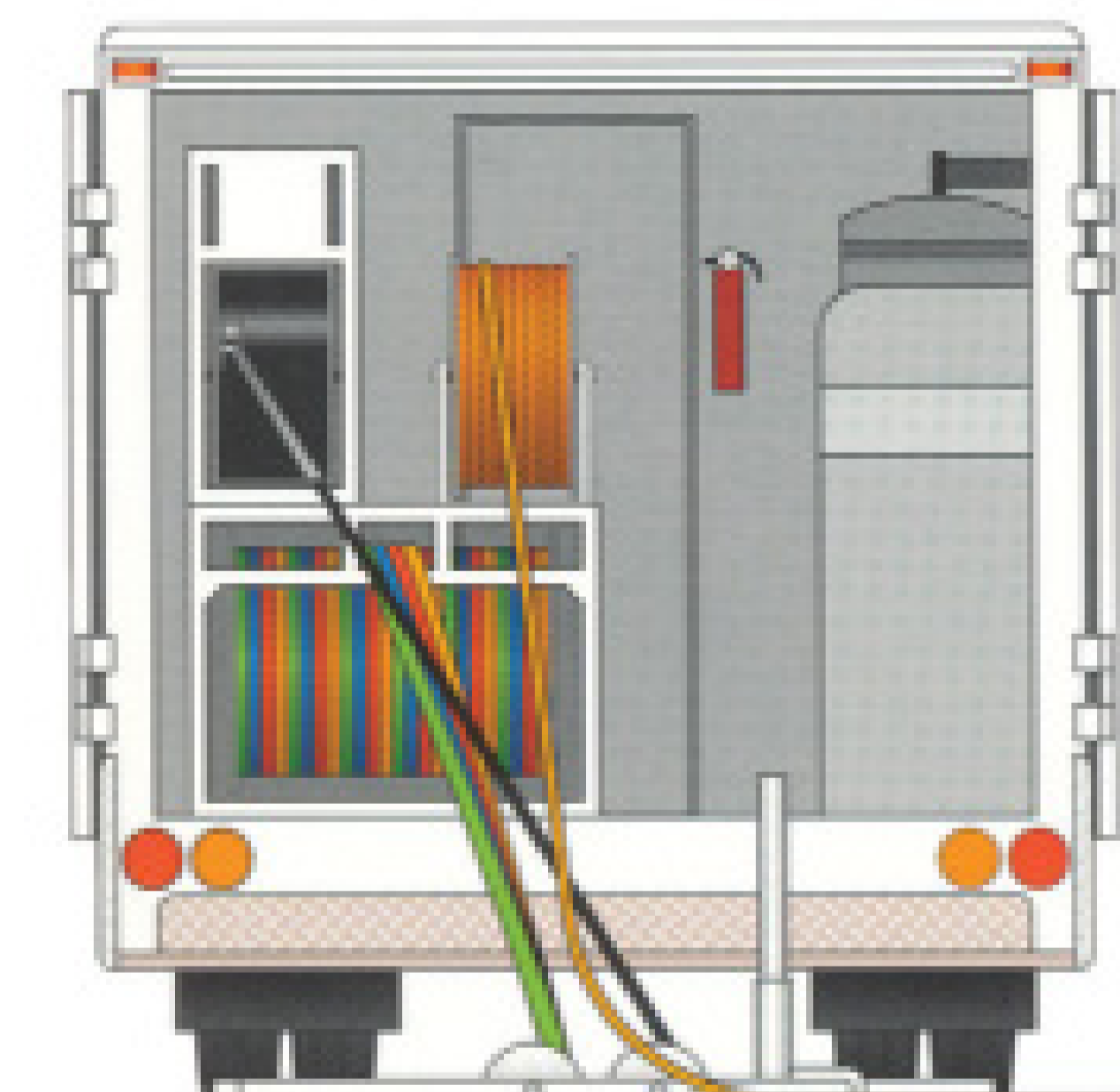
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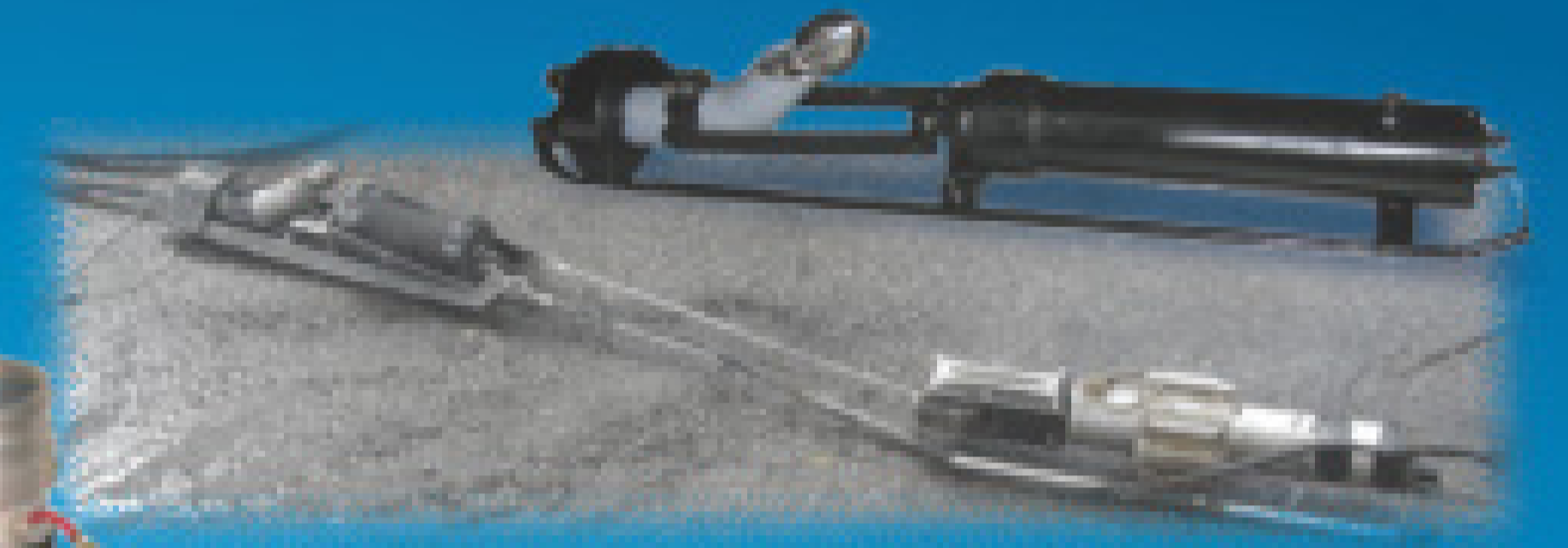
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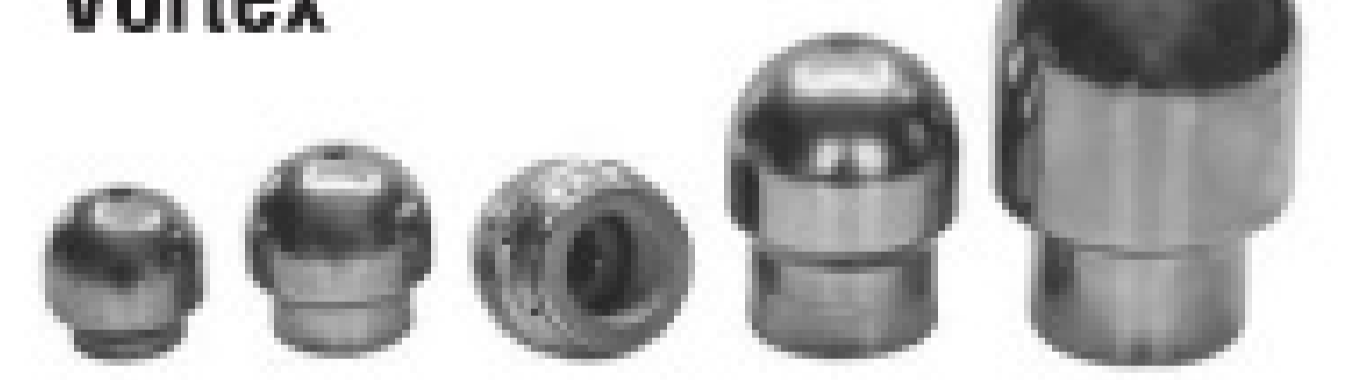
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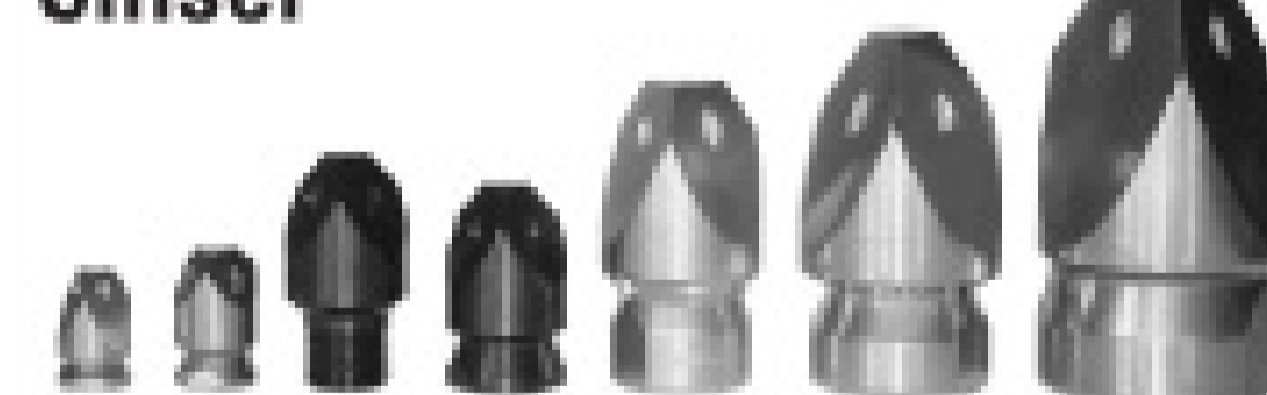
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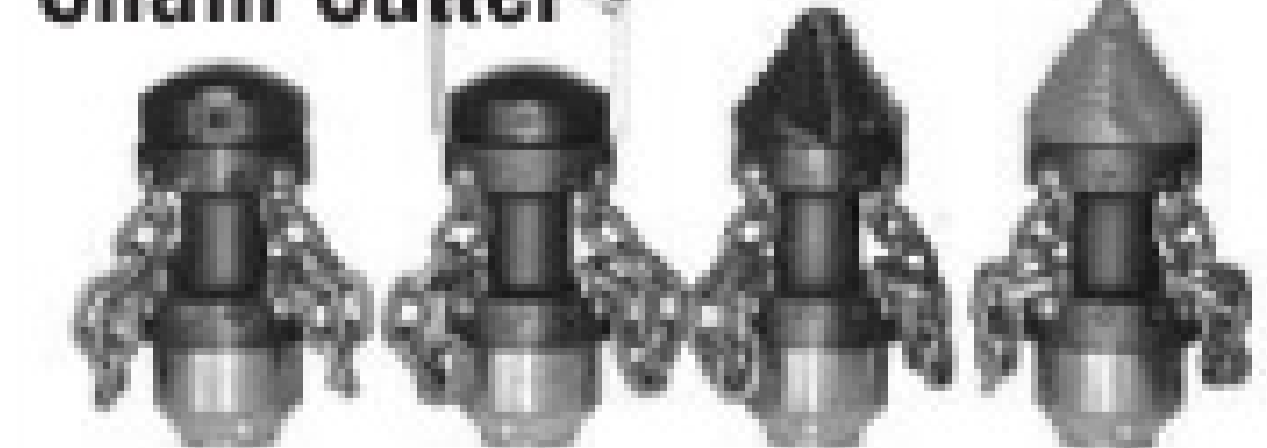
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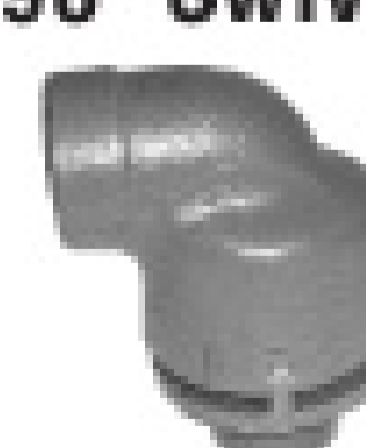
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Owner Duncan St. Croix and service technician Matt Shanahan pull a model 2001 cable machine from Spartan Tool LLC into a Chevy Kodiak service van, which also houses a waterjetter from US Jetting LLC. Besides cleaning and repairing pipes in its territory, Drainman Jet-O-Rooter does significant business in chemical root treatment. (Photography by Dave Revette Photography)



Members of the Drainman Jet-O-Rooter team include front row, from left, Roxanne Bowles, secretary; Kathy St. Croix, owner; Duncan St. Croix, owner; back row, service technicians Don Pitcher, Ricky Martino, Matt Shanahan, Nicholas St. Croix, and Tyler St. Croix.

# Rooting Out Revenue

**Drain cleaning and root control form the backbone of work for Jet-O-Rooter of Syracuse, N.Y., a company looking to grow through personalized service.**

By Peter Kenter

Look up Jet-O-Rooter in the Syracuse Yellow Pages and you'll see local numbers for the New York cities of Baldwinsville, Skaneateles, Fayetteville-Manlius, Fulton, Oswego, Watertown, Pulaski, Weedsport, Auburn, Camillus and Liverpool, all within a 60-mile radius from the company's head office.

Call any of the numbers around the clock and you're likely to be greeted by the friendly voice of Kathy St. Croix, president of Drainman Jet-O-Rooter Inc. "We can be reached on 13 different lines, but all of them feed into the same office," says St. Croix. "In this area, people are more likely to choose a business with a local contact, but they also like the strong corporate image of a franchise.

## PROFILE

### DRAINMAN JET-O-ROOTER INC., SYRACUSE, N.Y.

**OWNERS:** Kathleen St. Croix, president; Duncan St. Croix, vice president

**FOUNDED:** 1998

**MARKET AREA:** 60-mile radius

**SERVICES:** Broad range of sewer, drain-cleaning and septic system services

**EMPLOYEES:** 9

**AFFILIATIONS:** National Association of Wastewater Transporters

**WEB SITE:** [www.jetorooter.com](http://www.jetorooter.com) and [www.drainman.net](http://www.drainman.net)



"The local numbers allow us to give them the sense of personalized service. When they call, they get a real live person to talk to, not a phone message. More often than not, if they call us, it's for something that needs immediate attention. I answer the phone 24/7. I may be a little groggy when I answer at three in the morning, but I think customers would rather have that than a machine."

The company offers a broad spectrum of services with a special emphasis on root control – root intrusion is a major issue on local communities' tree-lined streets and in wooded yards. Other services include video inspection, waterjetting, trenchless waterline installation, plumbing services, grease trap pumping, and septic system installation and maintenance.

### Well-equipped

The company's nine employees include Kathy's husband and vice president, Duncan, and their 21-year-old son, Nick. Son Tyler, 17, and daughter Nicole, 27, work part-time and during the summer.

The technicians live all around the market area so that they can provide hometown service. While most machinery and equipment is centrally located, on-call employees drive their outfitted service vehicles home in case of midnight emergencies.

An impressive array of equipment starts with a P series waterjetter by Harben Inc.; a 3010 jetter from US Jetting; five each of Model 2001 and Model 100 cable machines from Spartan Tool LLC; and five K-40 dual-feed sink machines from RIDGID. The main drain service vehicles are three Chevy Express vans and two Chevy Kodiak box trucks.

On the septic system side, the



Service technician Nicholas St. Croix at the monitor on a lateral inspection job.

company operates a new Kenworth T210 with a 3,400-gallon waste/200-gallon fresh water stainless steel tank

and a 305C CR mini-hydraulic excavator by Caterpillar Inc. provide heavy equipment support.

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**"I answer the phone 24/7. I may be a little groggy when I answer at three in the morning, but I think customers would rather have that than a machine."**

**Kathy St. Croix**

by Best Enterprises Inc., and a 2001 2,500-gallon vacuum truck on a Sterling chassis. A 304.5 excavator

### Trouble from trees

The backbone of the company business is drain cleaning and root

control. About 60 percent of all calls the company receives are for drain blockages, often caused by roots. "Maple trees and willows are a huge source of revenue for us," says St. Croix.

The company started life in 1998 as Drainman, but the overwhelming call for root control and jetting services inspired a switch to Jet-O-Rooter in 2001. That name seemed to strike a chord with customers.

The company responds to both names and has twin Web sites to avoid alienating older customers, but it is slowly migrating to the newer identity. St. Croix answers the phone with the company's catchy slogan: "Jet-O-Rooter, the Better Rooter."

"We basically offer two approaches to root control," says St. Croix. "We can do the traditional root cutting, or we can provide chemical treatment." The company uses the RootX chemical root-control treatment, which foams on contact with water and dissolves roots by encouraging bacterial breakdown, while discouraging future growth.

"If it's a tough job, we often treat the lines with a cutter beforehand, and then apply the treatment," says St. Croix. "After the treatment, it takes 90 days to take full effect and for the roots to turn to mush and wash away. If the lines aren't clear within 90 days, we will re-snake for dead roots as part of the original price.

"The roots will continue to grow every year, so we might be called to re-treat in subsequent years. Maple trees have tough roots that continue to grow, even from a stump, for years after the tree has been cut down."

The company also offers drain

## THE RIGHT TOOL

Last year, Drainman Jet-O-Rooter Inc. purchased a PD-2 Pipe Pusher Puller from Midwest Pow-R Mole Company Inc. with the best of intentions. The hydraulic residential water service replacement system is designed to push standard waterlines from basement to curb box without exterior excavation.

"We wanted to get into trenchless boring and waterline installation for the residential market, and this seemed like the best way to start," says president Kathy St. Croix. The technology works fine, says Kathy's husband and company vice president Duncan St. Croix, but no job so far has provided the proper parameters to use the equipment to its best capacity.

"Its effective limit is about 50 feet, depending on soil conditions," says Duncan. "As luck would have it, every job we've worked on so far either exceeds 50 feet or provides poor access from the house basement end."

Kathy says the company isn't suffering from buyer's remorse: "Duncan has never bought a piece of equipment we've regretted buying. If we don't find that the equipment will suit the jobs we're getting, he'll pound the pavement until he finds jobs that suit the equipment. It's new technology waiting for us to grow into it."

treatment with Bio-Clean, a bacterial product distributed by Statewide Supply, to break down organic clogs in commercial and residential drains.

### Satisfied customers

Part of the company's philosophy is that educated consumers are more likely to be satisfied with their service. The company Web site carefully lays out typical drain problems and the solutions Jet-O-Rooter offers, including detailed descriptions of jetting and cabling.

"If they find us on the Web site, they're likely to try to look up information about their problem before they call, and they may already know some of the solutions we offer," says St. Croix. "By the time they talk to us, they know the terminology and they feel empowered to make some of the choices themselves, rather than have us tell them what they need."

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**"If it's a tough job, we often treat the lines with a cutter beforehand, and then apply the root treatment. After the treatment, it takes 90 days to take full effect and for the roots to turn to mush and wash away. If the lines aren't clear within 90 days, we will re-snake for dead roots as part of the original price."**

**Kathy St. Croix**

Jet-O-Rooter aims to take as many corporate and municipal contracts as it can capture – they're ultimately more financially rewarding and offer steady business. "The contracts we currently have are mostly restaurants, hospitals and health care facilities," St. Croix says. "We also have a contract with Carrier Corporation, the company that makes air conditioners, in Syracuse. Right now, we're doing roughly 20 to 30 percent contract business, but never at the expense of serving residential clients as well."

### Embracing the new

The company embraces new technology when it suits the business and the needs of consumers. Trade shows, trade magazines and Internet research help keep the staff on top of the latest in products and services.

Jet-O-Rooter is well served by an arsenal of inspection cameras. The company owns two RIDGID push-rod video inspection cameras, a Gatorcam inspection camera by

WCT Products Inc., and push camera supplied by Spartan Tool LLC.

"We see the cameras as not only a way to inspect trouble spots, but to show the customer, and our technicians, that the job has been done right," says St. Croix. "The boys are pushing for a remote-controlled crawler camera and a computer-outfitted service truck so we can snag the more lucrative municipal drain inspection contracts."

Computer technology has helped to make the company Web site more efficient. Customers can schedule appointments online, for example. "That's mostly the influence of my son, Nick," says St. Croix. "I'm a paper and pen type of person, but Nick is computer savvy and has set up our payment system so that we can accept credit cards online. One day I came back from an appointment and he was talking about using PayPal to accept bill

payments. Before I could say two words about how we were going to proceed with that, he interrupted me and said, 'Mom, it's already done.'"

### Caring for water

Challenges to the business include the ecologically sensitive lake system surrounding the area. "The state of New York has very stringent rules about water quality, so we're careful about everything we do," says St. Croix.

But those rules also provide business opportunities. For example, any property with a septic system sold in the state requires both a percolation test for the drainfield and a dye test for the septic tank as a condition of sale. Nick handles most of the perc tests.

Onondaga County, where the company operates, also has an extra level of regulation in the form of a plumbing board overseen by the county's licensed plumbers. Any job involving connections to the county water system must be observed by a licensed plumber.



**Kathy St. Croix, owner, and Roxanne Bowles, secretary, review the day's job lineup with an Electronic Service Control (ESC) scheduling program.**

"We believe that it's the only body of its kind in the country," says St. Croix. "They will oversee certain drain jobs to make sure that they're done properly, but they seem to be good people, and we play nice with the board."

### Branching out

The company is planning for expansion, which started with the recent construction of a larger garage near the head office, designed to house more equipment. Growth will next concentrate on consolidating the new office in Watertown.

The company already has an employee with a Watertown home base to serve the area, and a recently purchased 2.5-acre site will be used to construct a second garage. Plans are for Nick to strike out on his own in 2011 to establish a second satellite office in Auburn, about 35 miles away.

"We've discovered that, after you consider fuel cost and travel time, we can offer cost-effective services within an hour's drive," says St. Croix. "With two additional offices, our operating area will expand significantly, putting us in reach of Rochester to the west."

The company hopes to continue to grow on new ideas, new technology, and new markets inside its service area. "At the heart of it, we want to be perceived as a business that can compete with any franchise," says St. Croix. "But we still want to convey to our customers that we can deliver our services with all of the individual

attention and pride that can be offered by a family-owned business." ■

### MORE INFO:

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# Worth Celebrating

**30th Pumper & Cleaner Environmental Expo International adds a new-product display, interactive floor plan, and Women in the Industry seminar to its proven mix of exhibits and education.**

By Ted J. Rulseh

**T**he 2010 Pumper & Cleaner Environmental Expo International sticks to a proven formula: Exhibits, education, networking, fun. But this 30th annual show also breaks ground with new features, including a Women in the Industry seminar, a special display area for new products, and an interactive floor plan.

"We're staying with what has always worked, while adding new attractions that respond to ideas from our exhibitors and attendees," says Julie Gensler, trade show coordinator for COLE Inc., the show sponsor.

## Industry's biggest

The Expo, at the Kentucky Exposition Center in Louisville for the third straight year, starts with Education Day on Wednesday, Feb. 24. Exhibits are open Thursday through Saturday, Feb. 25-27.

**"We're staying with what has always worked, while adding new attractions that respond to ideas from our exhibitors and attendees."**

**Julie Gensler**

As the largest annual show in the industry, the Expo offers more than 500 exhibits of new and proven equipment and technology, plus a total of 70 seminars. Ample space for networking is provided in the COLE Pub food court and cocktail area outside the exhibit hall. Here's a look at a few of the new features at the 30th Annual Expo:

**Women in the Industry seminar.** Women play a huge role in service companies – some as sole owners, others as partners with their spouses, still others as support systems, taking care of the home front. All play vital roles. "Here's a chance for women from all sides of the industry to come together, learn about issues they have in common, share ideas, and get acquainted," Gensler says.

Guest speaker Ann Fry will talk about, "The Regeneration Process: How to Re-energize, Re-purpose, Re-invent and Handle Everything!" Fry is an

author, professional speaker, executive coach and corporate culture consultant who helps people connect to their passions and dreams. This Thursday event (9 a.m. to noon) will be followed by a wine and cheese tasting.

**New-product display.** There is so much to see on the exhibit floor that it can be hard for attendees to find what is new. This year, a sampling of products never seen at the Expo before will be displayed in a dedicated area. This display will be during Education Day (Wednesday) before the exhibits officially open, as well as during regular exhibit hours. "Here's a way to get a sneak preview of some of the newest and most innovative tools and technologies," Gensler says.

**Interactive floor plan.** A virtual floor plan available at [www.pumpershow.com](http://www.pumpershow.com) will help attendees quickly and easily find exhibits and products of interest. A simple graphic show layout shows where companies will exhibit. A click on an exhibit space brings up detailed information about the company, a list of product categories offered, and a panel highlighting the company's featured Expo offering.

Visitors can also search the show by product category: Search results highlight all exhibits on the floor plan that include the chosen category. An agenda planner lets attendees select exhibitors and seminars of interest and create a complete show itinerary, which they can print out and bring to the show to help maximize their time in Louisville.

## Quality education

The Education Day program again includes tracks of seminars given by leading industry associations. Those participating are:

- Southern Section Collection Systems Committee (SSCSC)
- National Environmental Health Association (NEHA)
- National Association of Wastewater Transporters (NAWT)
- National Association of Sewer Service Companies (NASSCO)
- WaterJet Technology Association (WJTA)
- Portable Sanitation Association International (PSAI)
- Leaders Resource Network (LRN)
- National Onsite Wastewater Recycling Association (NOWRA)

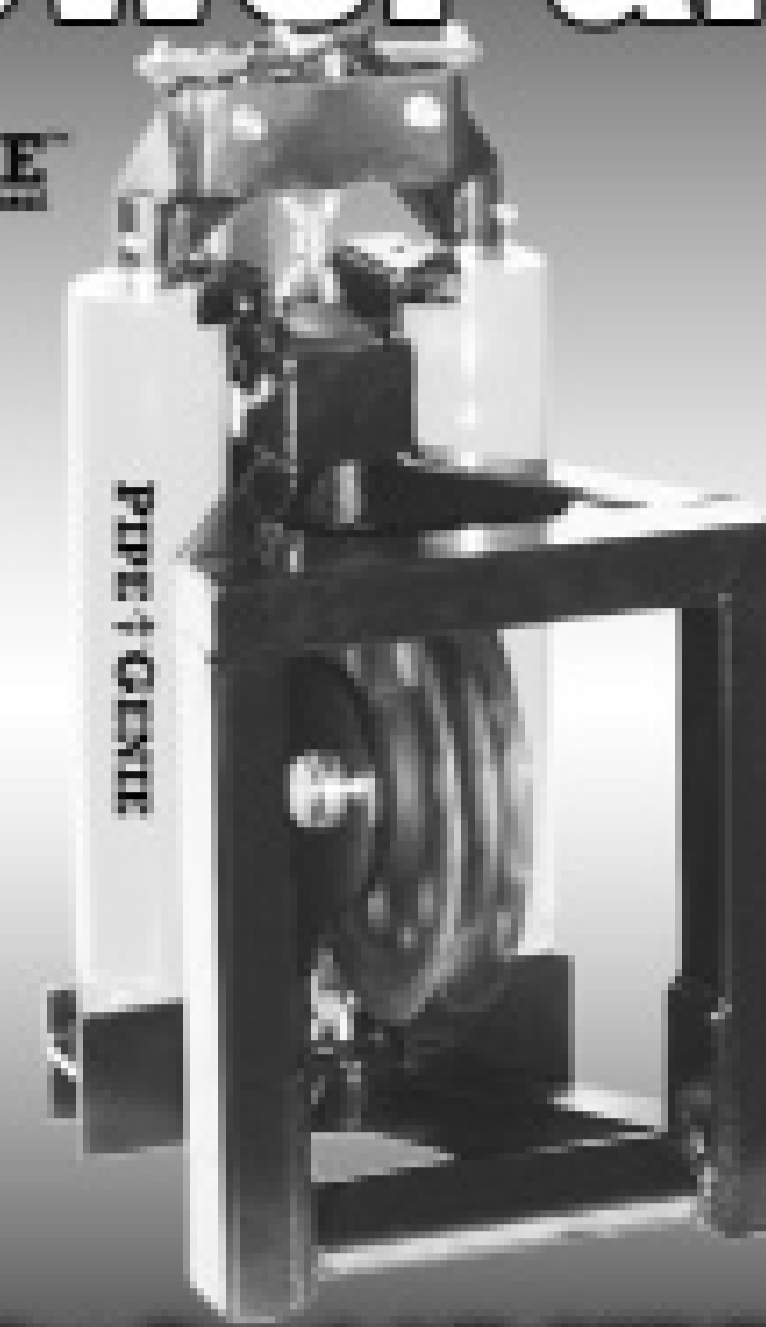


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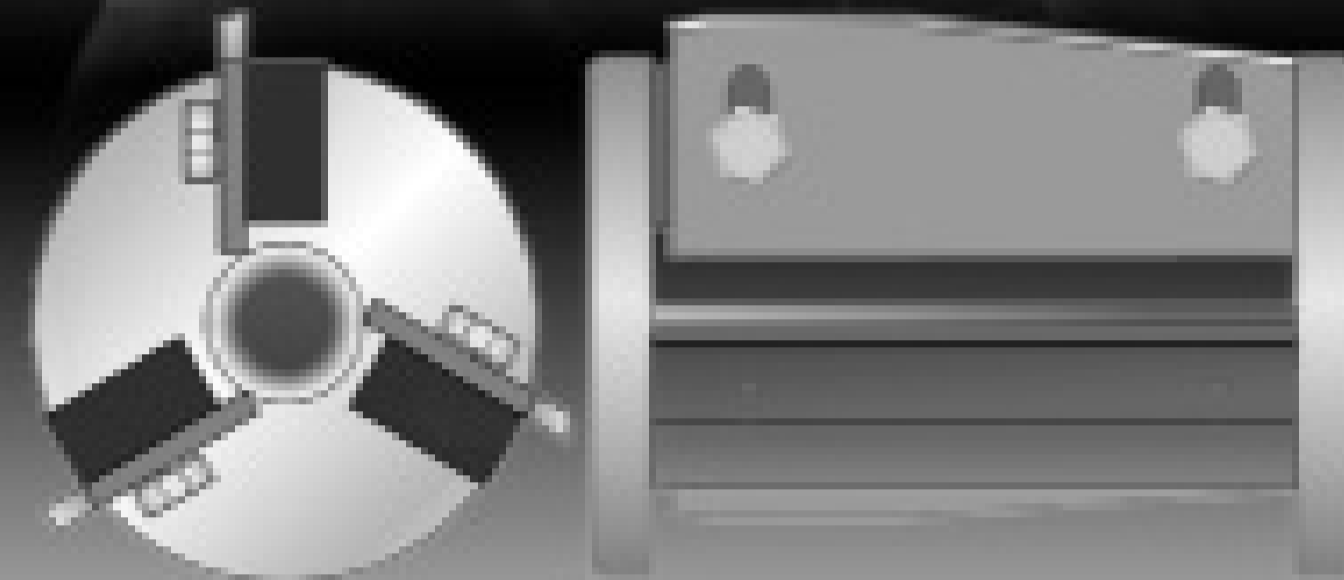


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Thursday and Friday seminars include tracks covering general business-building topics, sewer and drain cleaning, liquid waste management, portable sanitation, and municipal maintenance and repair. In addition, the SSCSC will offer seminars in Spanish to accommodate the growing number of Expo visitors from Mexico, Central America, and South America.

## Top entertainment

As always, the Expo includes two popular social events. The annual Industry Appreciation Party on Thursday evening features tap beers for 25 cents.

The Saturday Evening Jam Revisited brings back two of the most popular acts in Expo history: Sawyer Brown (who performed in 2003 and 2004), and Phil Vassar (2005). The show begins at 5 p.m.

In honor of the Expo's 30th Anniversary, early registration costs just \$30 per person (until Jan. 22). At-the-door registration is \$60 for the full program. To find out more, visit [www.pumpershow.com](http://www.pumpershow.com) or call 800/257-7222. ■

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# EDUCATION DAY

Wednesday, February 24th, 2010

## SOUTHERN SECTION COLLECTION SYSTEMS COMMITTEE

### ROOM C204-C205 - SSCSC

- 8:00 - 9:00 Manhole Inspections 'The Need'
- 9:30 - 10:30 Combination Truck Maintenance and Safety, Sewer Hose Maintenance and Nozzle Technology
- 11:00 - 12:00 Jetting Nozzles - Their Design, Technology and Effective Usage
- 12:00 - 1:00 **LUNCH BREAK**
- 1:00 - 2:00 Elevating the Quality of Your CCTV Inspection Program
- 2:30 - 3:30 Critical Steps in Prioritizing Sewer Rehabilitation
- 4:00 - 5:00 Traffic Control - The Critical Factor in Pipeline Inspection

## NATIONAL ENVIRONMENTAL HEALTH ASSOCIATION

### ROOM C105-C108 - NEHA

- 8:00 - 9:00 Decentralized Systems - The Next Wave in Our Industry
- 9:30 - 10:30 Septic Tanks: A Gift That Keeps on Giving
- 11:00 - 12:00 Selling CIOWTS Certification to Installers and Regulators
- 12:00 - 1:00 **LUNCH BREAK**
- 1:00 - 2:00 Softeners and Onsite Systems
- 2:30 - 3:30 Advanced Wastewater Treatment Systems
- 4:00 - 5:00 Maximize Efficiency by Working Closely with Regulators and Within the Regulatory System

## NATIONAL ASSOCIATION OF WASTEWATER TRANSPORTERS

### ROOM B101-B102 - NAWT

- 8:00 - 9:00 Sampling Protocols and Methods for Alternative Technologies
- 9:30 - 10:30 Dealing with Restaurant or High-Strength Waste
- 11:00 - 12:00 O & M for ATUs
- 12:00 - 1:00 **LUNCH BREAK**
- 1:00 - 2:00 O & M for Drip Irrigation
- 2:30 - 3:30 What to Expect When the EPA Comes A-Callin'
- 4:00 - 5:00 A Template for Keeping Your Employees Trained

## NATIONAL ASSOCIATION OF SEWER SERVICE COMPANIES

### ROOM C101-C104 - NASSCO

- 8:00 - 9:00 Pipe Inspections without an Operator?
- 9:30 - 10:30 Ways to Increase Your Daily Sewer Cleaning Production Rates without Increasing Your Costs
- 11:00 - 12:00 Proper Preparation of the Substrate Results in Coating Longevity
- 12:00 - 1:00 **LUNCH BREAK**
- 1:00 - 2:00 Collection System Asset Management - Getting from Reactive to Proactive
- 2:30 - 3:30 Trenchless Lateral Renewal Technologies - Lessons to be Learned
- 4:00 - 5:00 Zoom Camera Technologies: The Next Level of Infrastructure Inspection

## WATERJET TECHNOLOGY ASSOCIATION

### ROOM C203 - WJTA

- 8:00 - 9:00 The Impact of OSHA's Combustible Dust National Emphasis Program on Industrial Vacuuming
- 9:30 - 10:30 Waterblast Safety
- 11:00 - 12:00 Waterjet Applications and Business and Financial Considerations

## PORTABLE SANITATION ASSOCIATION INTERNATIONAL

### ROOM C203 - PSAI

- 1:00 - 2:00 Understanding Your True Cost Analysis to Ensure Profitability - Part 1
- 2:30 - 3:30 Understanding Your True Cost Analysis to Ensure Profitability - Part 2

## LEADERS RESOURCE NETWORK

### ROOM C201-C202 - LRN

- 8:00 - 9:00 Creating Your Vision for Success
- 9:30 - 10:30 Getting Your Team On Board
- 11:00 - 12:00 Working Effectively in a Family Business Culture
- 12:00 - 1:00 **LUNCH BREAK**
- 1:00 - 2:00 Creating Your Own Competitive Edge
- 2:30 - 3:30 Winning More Sales
- 4:00 - 5:00 Women in Business: Panel Discussion

## NATIONAL ONSITE WASTEWATER RECYCLING ASSOCIATION

### ROOM B103-B104 - NOWRA

- 8:00 - 9:00 Wastewater Characteristics
- 9:30 - 10:30 Soils and Site Evaluation Overview
- 11:00 - 12:00 Septic Tank Overview: Function, Design, Construction, Inspection and Troubleshooting
- 12:00 - 1:00 **LUNCH BREAK**
- 1:00 - 2:00 Seminar on Aerobic Treatment Units
- 2:30 - 3:30 Seminar on Media Filters
- 4:00 - 5:00 Seminar on Pumps and Controls

## SCOTT HUNTER

### ROOM C109-C112

- 9:30 - 10:30 Relationship is the Key!
- 11:00 - 12:00 The Art of Customer Service
- 12:00 - 1:00 **LUNCH BREAK/BOOK SALES**
- 2:30 - 3:30 Creating an Outrageously Successful Company - Part 1
- 4:00 - 5:00 Creating an Outrageously Successful Company - Part 2



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## THURSDAY

February 25th, 2010

### BUSINESS TRACK ROOM C101-C104

- 8:00 - 9:00 New 4 P's of Marketing  
*Jerard Nighorn/Lenzyme Trap-Clear Inc.*
- 9:30 - 10:30 Quit Learning and Start Doing  
*Bill Raymond/Nexstar Network*
- 11:00 - 12:00 5 Secrets of Winners  
*Kenny Chapman/Nexstar Network*

### INSTALLER TRACK ROOM B102

- 8:00 - 9:00 Risk Assessment for Determining SVC Frequency  
*Colin Bishop/Bord na Mona*
- 9:30 - 10:30 From Theory to Reality  
*Roger Lacasse/Premier Tech*
- 11:00 - 12:00 Timed Dosing and Controls  
*Mark Gross/Orenco*

### LIQUID WASTE TRACK ROOM B103

- 8:00 - 9:00 Understanding the Biology and Function of an ATU  
*Doug Dent*
- 9:30 - 10:30 Permit Required Confined Space  
*Ed Fitzgerald/Jack Doheny Co.*
- 11:00 - 12:00 T.B.D.

### PORTABLE TOILET TRACK ROOM B104

- 8:00 - 9:00 Up-Selling: How to Thrive During a Recession  
*Ray Luden Jr./PolyJohn*
- 9:30 - 10:30 Portable Sanitation Business Overview  
*Deric Boggs, Phil LaRoche/Satellite*
- 11:00 - 12:00 T.B.D.

### MUNICIPAL TRACK ROOM C105-C108

- 8:00 - 9:00 Pipe Cleaning Tools  
*Dana Hicks/ENZ USA Inc.*
- 9:30 - 10:30 Increase Revenues through Pipeline Laser & Sonar  
*Doc Bennet/CUES*
- 11:00 - 12:00 How to Prevent I/I in the Manhole Chimney Area  
*William Goff/Sealing Systems Inc.*

### SPANISH TRACK ROOM C109-C112

- 8:00 - 9:00 Limpieza de Drenajes y Tuberías y la Elección de Boquillas  
*Jim Aanderud/SSCSC*
- 9:30 - 10:30 Formando un Programa Eficaz de Inspecciones CCTV  
*Jim Aanderud/SSCSC*

### WOMEN IN THE INDUSTRY ROOM C203

- 9:00 - 12:00 The Regeneration Process: How to Re-energize, Re-purpose, Re-invent and Handle Everything!  
*Ann Fry*

## FRIDAY

February 26th, 2010

### MUNICIPAL TRACK ROOM C105-C108

- 8:00 - 9:00 Identifying Manhole I/I Sources and Cost-Effective Repair Methods  
*Lee Haessig/Cretex Specialty Products*
- 9:30 - 10:30 Jet Up! Taking Science to the Sewer  
*Scott Paquet/NozzTeq Inc.*
- 11:00 - 12:00 Cured in Place Pipe vs. Digging and Replacing  
*Travis Bohm/Perma-Liner*

### BUSINESS TRACK ROOM C101-C104

- 8:00 - 9:00 Quality and the True Cost of Ownership  
*Matt Sutton/Rapid View*
- 9:30 - 10:30 Vision and Direction: Leading your Service Company to Prosperity  
*Victoria Finley/One Biotechnology*
- 11:00 - 12:00 How to Shop Your Insurance Effectively  
*Mark Herring/Heffernan Insurance*

### INSTALLER TRACK ROOM C109-C112

- 8:00 - 9:00 Safety in Excavation  
*Gary Hooks/Safety Corporation of America*
- 9:30 - 10:30 Comprehensive Control Panel Training  
*Joe Zimmerman, Scott Rietsema/SJE Rhombus*
- 11:00 - 12:00 Onsite Wastewater Effluent Disinfection  
*Jim Cruver/Salcor*

### LIQUID WASTE TRACK ROOM B103

- 8:00 - 9:00 Dewatering Alternatives  
*Kelly Brown/BDP Industries*
- 9:30 - 10:30 Convert a Liability to an Asset  
*Emily Landsburg/Black Gold Biofuels*
- 11:00 - 12:00 The Role of Bacteria and Bioaugmentation in Grease Traps and Septic Systems  
*Dr. Clarence Baugh/Custom Biologicals*

### SEWER & DRAIN TRACK ROOM B102

- 8:00 - 9:00 Drain Cable Technology and Their Real World Applications  
*Keith Nesky/Spartan Tool*
- 9:30 - 10:30 OSHA Procedures Regarding Confined Space  
*Chris Cira/M Tech*
- 11:00 - 12:00 Sonde and Utility Line Locating Techniques  
*Rob Trefz/RIDGID*



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# All Wound Up

**Spiral-wound pipe lining uses a continuous strip of plastic material to create a continuous interior surface offering a no-cure solution**

By Peter Kenter

*Tech Perspective looks at technology-related issues and provides information and advice that cleaning professionals can apply to equipment selection and to their daily work in the field. Industry members are welcome to offer ideas for this column. Please direct them to editor Ted J. Rulseh, editor@cleaner.com.*

**M**ost sewer pipe lining technologies offer liners that are cured in place after insertion. Spiral-wound pipe rehabilitation is an emerging technology that offers trenchless repair with no curing.

The technology includes a system that uses a single panel of polyvinyl chloride (PVC) that has interlocking edges and is reinforced by encapsulated steel, and a system that uses high-density polyethylene (HDPE) that is welded together with a polyethylene joint. The liners, which come in profiles of various thickness to ensure rigidity, are installed manhole-to-manhole.

The liner is suitable for stormwater and wastewater lines, but not for potable water, because it isn't pressure rated.

## Hydraulic winder

In making a repair with spiral-wound technology, the damaged section of the host pipe is first camera-inspected, then jetted or otherwise cleaned of debris.

A hydraulic winding machine is then lowered into the manhole, and the panel material is fed into the winder from a spool that remains on the surface. As the material exits the winder, it forms the shape determined by the host pipe and construction variables by extruding along its own interlocking channel.

The winder continues to push the material shape along the pipe's interior surface until the liner reaches the next manhole.

The spiral-wound liner system can be used to line even pipes with non-conventional shapes. (Photos courtesy of SEKISUI SPR Americas LLC)





The liner is delivered on rolls and deployed into the manhole to a hydraulic winding machine.

Once the liner has been locked into place at both ends, a temporary bracing system can be erected if necessary. Grout is injected into the annular space between the host pipe and the liner. In most cases, no shut-off or bypassing is required, as the host pipe can accommodate a certain degree of flow during installation.

The technology is suitable for circular pipes from 30 to 197 inches and for non-circular shapes, such as teardrops and culvert pipe.

"Even though the liner slightly reduces the inside diameter of the host pipe, we're increasing the flow of the pipe because of the material's Manning's n value," says Jonathan Vaccaro, business development manager with SEKISUI SPR Americas LLC, headquartered in Atlanta, Ga.

SEKISUI is the only company offering the machine-wound spiral technology, having purchased a majority stake in former competitor Rib Loc Australia about two years ago.

### Smaller sewers

A PVC liner is designed for circular sewer and stormwater pipes from 6 to 30 inches. The grade of PVC is similar to that used in new sewer and drainage lines. Liners are chosen according to the structural requirements of the pipe: Thicker liners can offer greater stiffness.

After a camera inspection in which lateral connections and branch lines are mapped, the line is cleaned and jetted. The winding machine is lowered into the access chamber and set in place. Then the liner is extruded. A wire mounted

inside the liner allows it to retain the shape of a pipe until the spiral liner reaches the next upstream access point. There, it is fixed into place as the material continues to feed into the interior of the pipe, stopping only when the liner expands to its maximum diameter.

"Essentially, you're getting a circular liner in the shape of the pipe, but somewhat smaller so that it moves freely to the next manhole or access point," says Vaccaro. At the access point, the end of the spiral is locked into place and the wire is cut to allow further expansion of the liner so it can fit tightly against the profile of the pipe, smoothing out jogs, offsets or imperfections.

A lubricating sealant allows the

liner to slide smoothly as it expands along its own interlocking channel. When the liner expands to its maximum diameter, the liner is cut and sealed at both ends. A robotic cutter then reinstates the lateral connections.

### Larger pipe

PVC material is also used in larger pipes from 30 to 197 inches. It can be fitted to circular, custom or rectangular shapes and can be installed vertically in access shafts or wells. The hydraulic winder can either be fixed or moved along the profile of the pipe as the liner is extruded.

"We can do pretty much any shape," says Vaccaro. "For odd shapes we customize the hydraulic winding drive unit to follow predetermined shapes. So if we're creating a 96-inch-tall teardrop, the winding frame is built to the shape of the pipe, but slightly smaller so that we have a predictable annulus space and know the grout thickness required as part of the rehab design."

For these profiles, the winder bends the metal reinforcement inside the liner to permanently shape it to the host-pipe profile. These liners require a bracing system to provide structural support during grouting.

## A EUROPEAN FIRST

The first city in the European Union to use spiral pipe lining technology was Szczecin, Poland in 2008. The masonry-lined host sewer pipe was built a century ago and was severely deformed and offset, with huge longitudinal cracks along the crown.

Because the damaged line was the city's main downtown collector, there were no options to construct a bypass. The city had already dug a 60-foot pit to begin relining the pipes, but when it was discovered that traditional lining methods threatened to reduce the diameter of the pipe significantly, the city opted to try the spiral technology on the problematic 550-foot stretch of sewer.

Through heavy rains, and continued sewage flow, the work continued. The structural liner formed a new pipe through the excavated pit area where the original pipe was only a half shell.

"Despite the weather conditions that caused some delays, the entire job was completed by Polish crews under the guidance of Japanese technical support in under two months," says Jonathan Vaccaro, business development manager with SEKISUI SPR Americas LLC. "After bracing and grouting, the line went back into full service."

### Extrusion-welded

A pipe-grade HDPE material is used to provide optimum stiffness for lining sewers, storm drains and culverts from 30 to 120 inches. Here, the profile of the liner is sealed using an extrusion welder that fuses the material together.

"We use HDPE pellets in a pre-heated condition to provide the molten material for the weld," says Vaccaro. "This liner uses HDPE because it has a higher chemical resistance and is designed for the industrial market. Because the welded liner provides the structure here, a non-structural grout fills the annulus space."

### Careful in the cold

While the spiral-wound liner is suitable for all climate conditions, application requires care during extreme cold. The material must be kept supple while being wound so that it conforms perfectly to the desired profile.

The first U.S. installation was a 2005 test by the City of Los Angeles to install a corrosion barrier in a semi-elliptical, large-diameter sewer pipe. The earliest use of spiral-wound technology was recorded 25 years ago in Tokyo, Japan.

"They've had zero significant failures either there, or anywhere else where it's been used," says Vaccaro. "One reason is that feed rates, winding profiles and HDPE welding information is programmed into the computer. After that, the results are completely independent of the skill of the human operator."

The product is being licensed in the United States on a territorial basis. "Typically, the smaller contractor is attracted by the idea that he can enter the market for an attractive price," Vaccaro says. A typical start-up package consists of a TV truck, supervisor truck and a winding truck.

The technology is versatile: "For each new project, we can adjust the material profile, the grout thickness and the shape of the annulus space to meet the parameters of the job," says Vaccaro. ■

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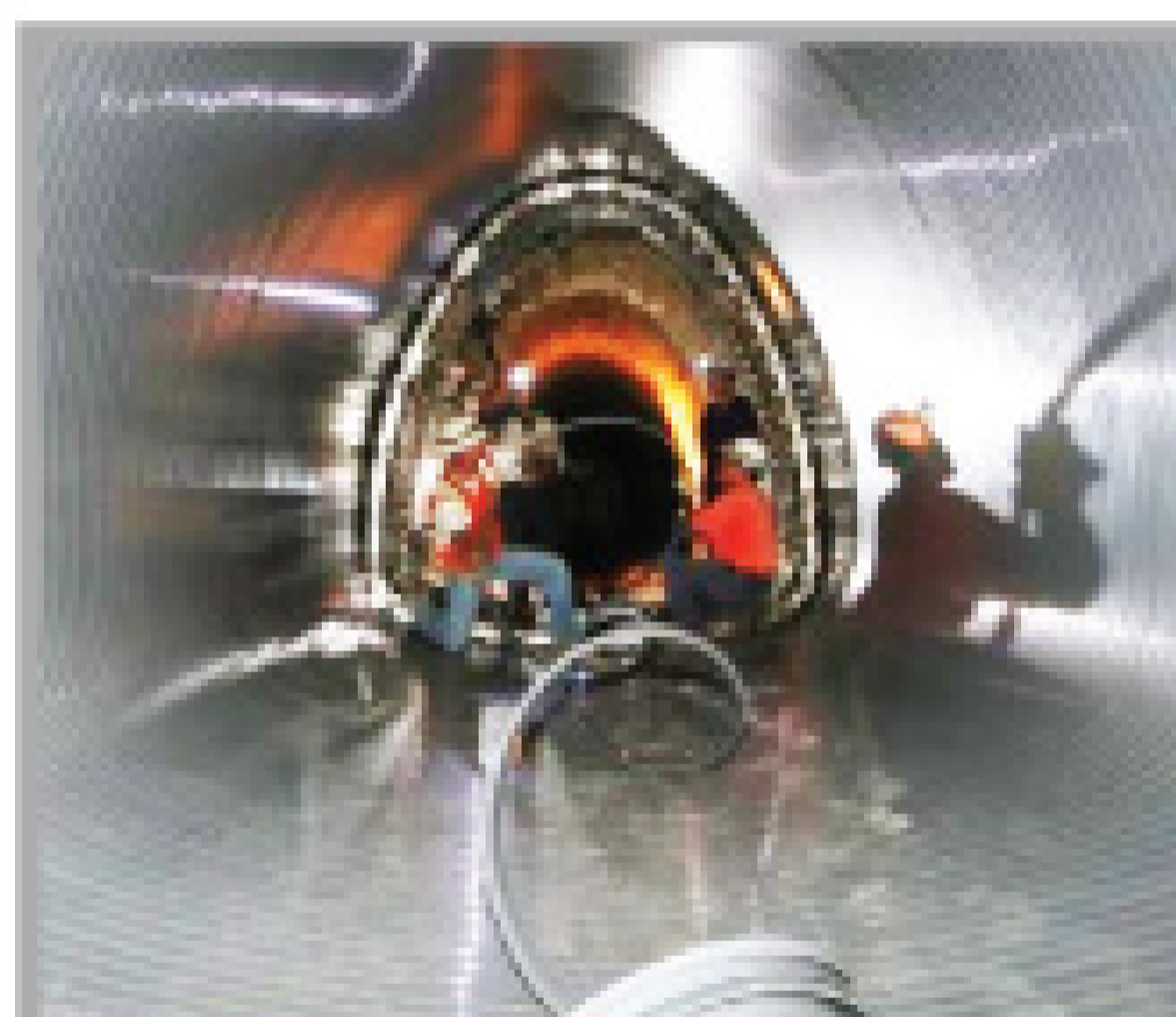


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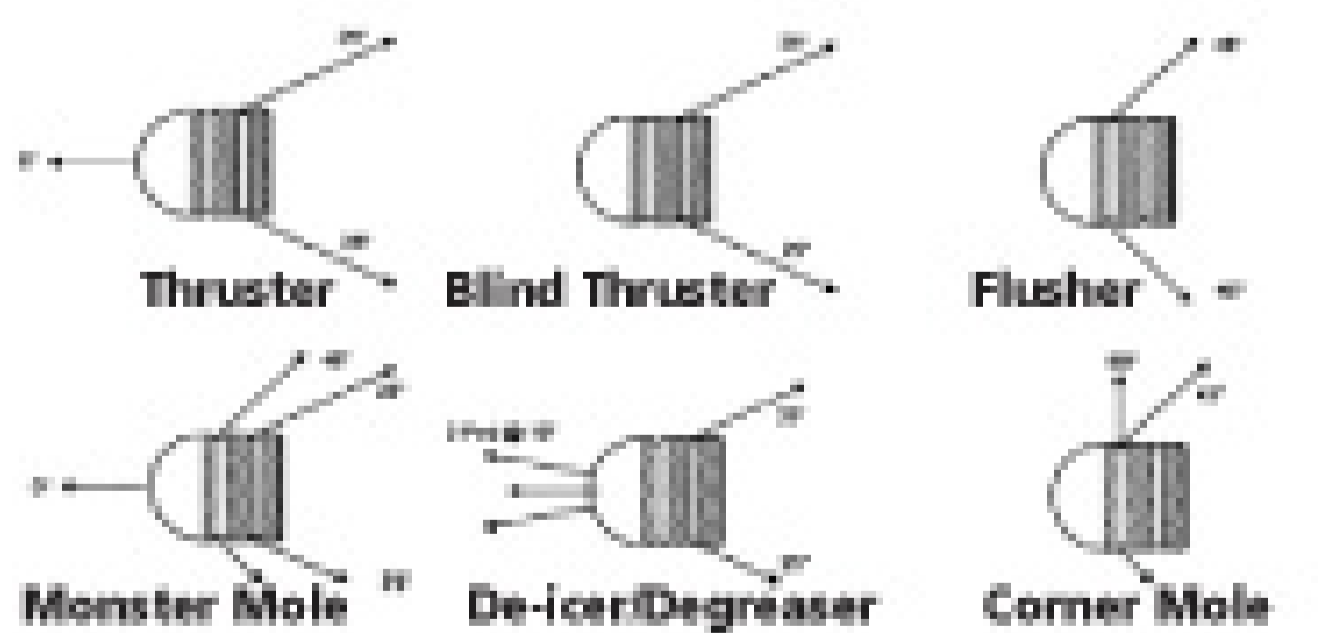
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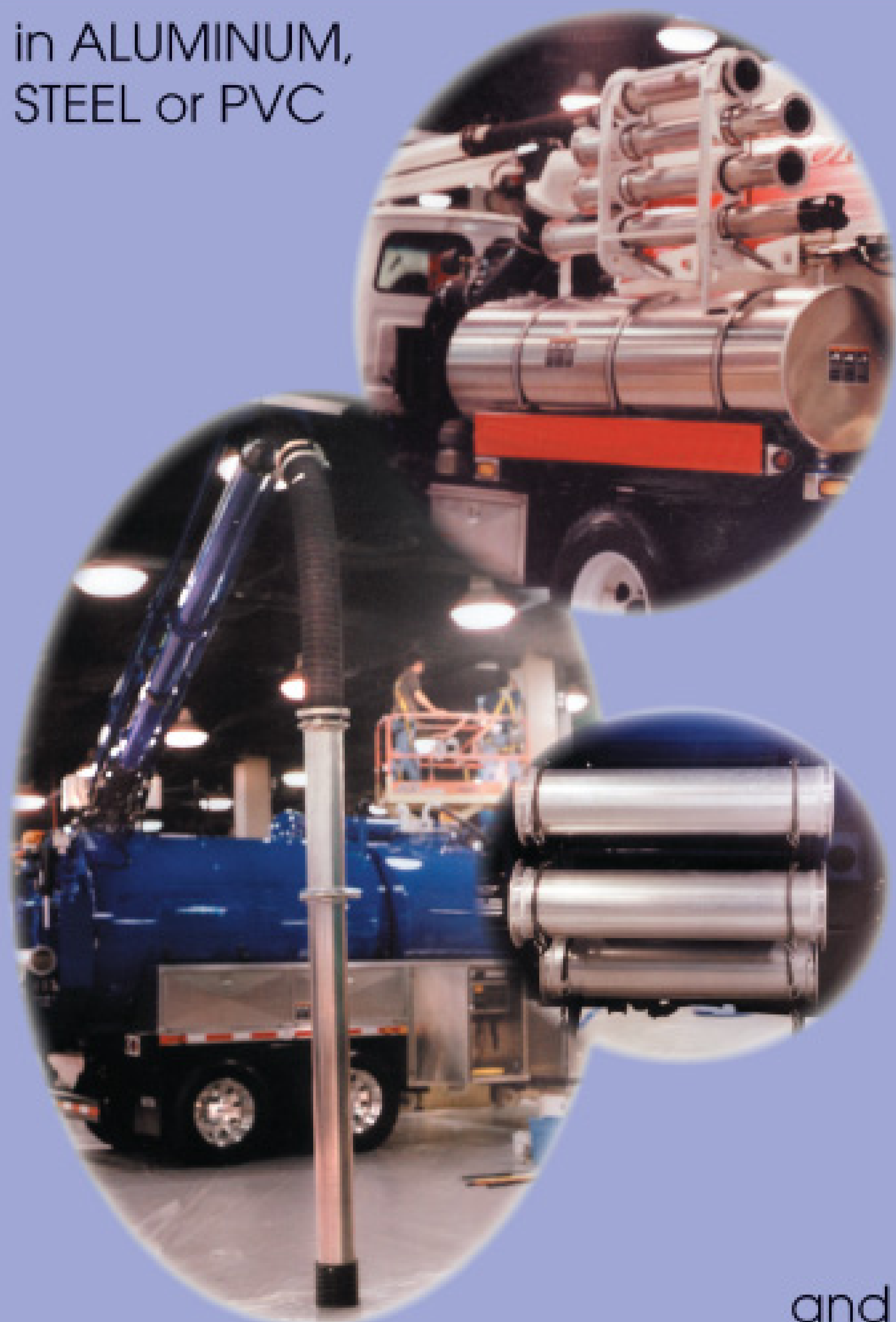
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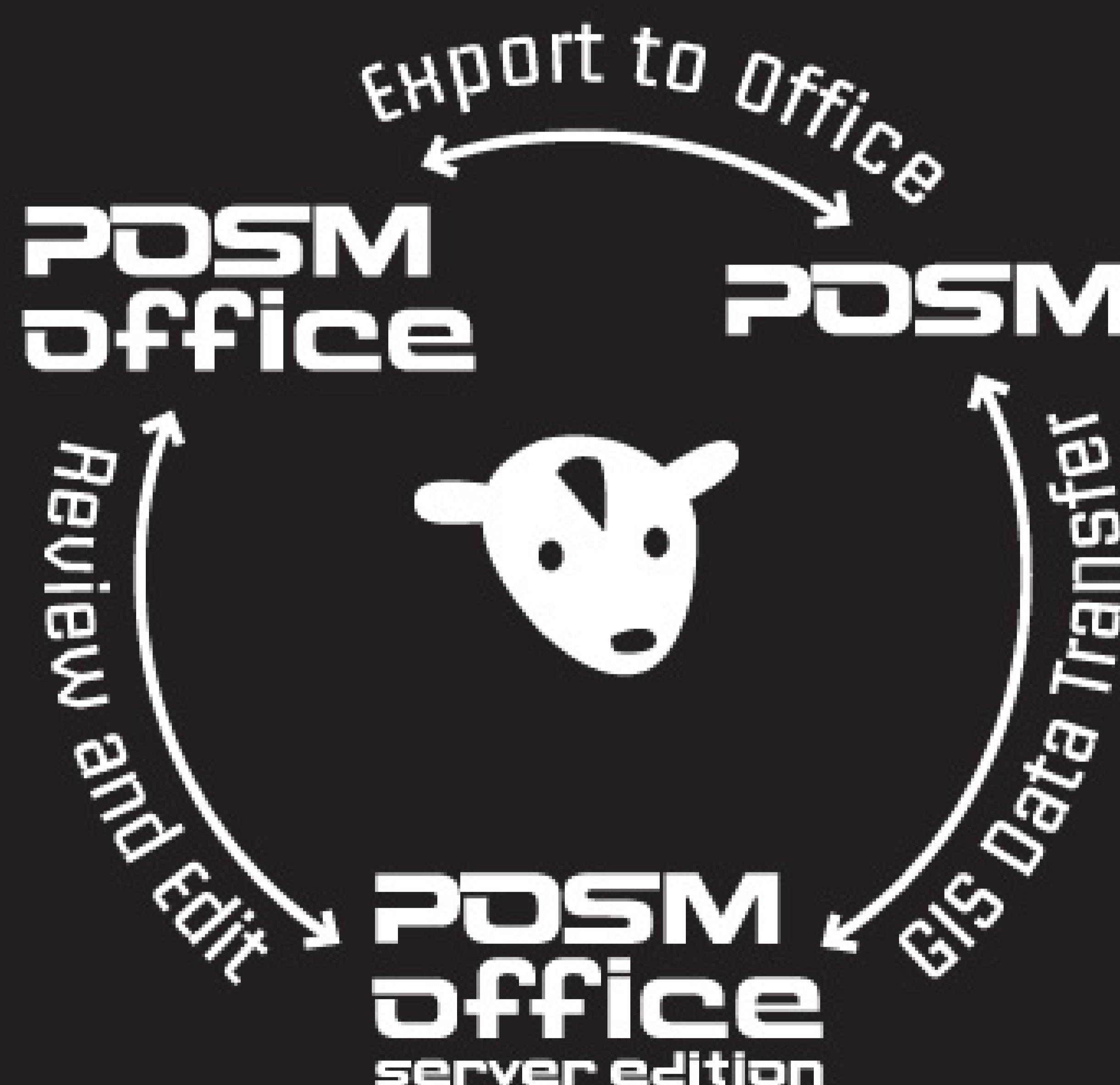
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# Root of the Problem

Manufacturers offer a wide range of cutting systems to remove roots from underground piping and restore normal flow to sewer lines

By Benjamin Wideman

Chemical control is a good remedy for roots in sewer lines, but mechanical removal has its applications, too, especially for advanced problems that cause or threaten to cause severe blockages. Manufacturers offer a wide variety of tools for cutting out problem roots. Here are some of the latest offerings.



## 1. LOW MAINTENANCE

The Smart Cutter from Sewer Equipment Company of America is a low-maintenance, high-torque root cutter. Guaranteed against rust-related lock-up, the unit includes eight self-lubricating Nylatron wheels on adjustable roller skids. 800/323-1604; [www.sewerequisite.com](http://www.sewerequisite.com).

## 2. LOW TORQUE, VARIABLE SPEED

The Lumberjack cutter from Nozzteq Inc. is a low-torque, variable-speed cutting nozzle, powered by sewer jetting or combination trucks. Cutting chains rotate at 10,000 to 50,000 rpm, depending on pressure and flow. Low torque reduces the risk of getting stuck, reduces harm to host pipe, and keeps the cutter from spinning off the hose end. The device is sealed, grease-lubricated and water-cooled to minimize maintenance. The drive shaft and turbine are made of hardened steel, and the supply tube is made of stainless steel. Four models clear pipes from 3 to 48 inches. 866/620-5915; [www.nozzteq.com](http://www.nozzteq.com).

## HIGH PRESSURES

The Wire Rope and Chain Scraper by Enz USA Inc. has a working pressure up to 4,000 psi. It can be adapted to a wide range of pipe diameters by adjusting the skid and selecting the right chain length. For extra-heavy deposits, chains with welded manganese steel plates and roller chain attachments are available for larger chain cutters. 630/692-7880; [www.enzusainc.com](http://www.enzusainc.com).

## 3. CENTERED CUTTER

The Ripper from DML LLC is designed to work with hydraulic motors and root saws to increase their effectiveness and productivity. Cables help suspend the motor and saw assembly, keeping them centered in the pipe and minimizing problems caused by offsets and projecting taps. This also prolongs the life of the saw blade by keeping it off the bottom of the pipe. The scrubbing action of the cables is non-destructive, allowing root cutting in vulnerable clay pipes. 630/293-3653; [www.rootripper.com](http://www.rootripper.com).

## SMALL PIPES

The Hummingbird Micro-Cutter by KEG Technologies Inc. is designed for 2-, 3- and 4-inch pipes. It comes in 1/2-inch NPT hose connections. The device requires at least 8 gpm and 1,200 psi. Four-inch pipes require the use of a centering skid. 866/595-0515; [www.kegtechnologies.net](http://www.kegtechnologies.net).

## 4. CABLES CHAINS

Chempure Products Corp. offers the 1/2-inch Root Rat combo kit, which

includes cable and chain rotors. Flows range from 12 to 30 gpm and pressures from 1,500 to 10,000 psi. The unit, which weighs 1 1/2 pounds, can make a 4-inch, 90-degree turn. The chain pocket accepts bicycle and flail chain. Optional items include an aluminum skid ring, holesaw blade, and SS thruster for long pulls. 800/288-7873; [www.chempure.com](http://www.chempure.com).

## THREE ROTATIONAL JETS

The Spider 80 Chain Cutter by Lindhorst Workhorse Nozzles has three rotational jets for high torque and speed. The unit also has several hardened chain styles, precut to fit each pipe size. Adjustable skids are designed to fit various pipe applications. 702/324-2244; [www.lindhorstnozzles.com](http://www.lindhorstnozzles.com).

## 5. MOTOR AND SKID

The Contractor Duty by Shamrock Pipe Tools Inc. is a root cutter motor with skid that cleans 6- to 18-inch pipes. It supports a special 18-inch root cutter blade, as well as other color-coded concave, circular, and cable-style cutters. The internally ported, heavy-duty hydraulic power unit has a built-in grease system. Its 2,250 inch-pounds of torque helps prevent stalling. The device weighs 20 pounds. 800/633-7696; [www.shamrockpipetools.com](http://www.shamrockpipetools.com).

## CARBIDE TEETH

The Super Size Root Cutter by Productive Carbides Inc. works in pipes up to 27 inches. Two lobes are driven off the center shaft of standard hydraulic drivers for improved balance. The unit also includes carbide teeth. 800/676-7649; [www.productivecarbides.com](http://www.productivecarbides.com).

## 6. COMPLETE KIT

The OBJ-1467 by O'Brien Manufacturing allows operating pressures from 800 to 4,000 psi and flow rates up to 18 gpm. The standard kit includes toolbox and tools; 4-, 6- and 8-inch skids; and 4-, 6- and 8-inch saws. 800/638-1901; [www.obrienmfg.com](http://www.obrienmfg.com).

## 7. TURBINE DRIVE

The Turbo IV flexible chain cutter by USB Sewer Equipment Corporation is driven by a high-performance turbine and requires no lubrication. The stainless steel unit has continuously adjustable guide skids and threaded ceramic nozzle inserts. It works in pipes from 15 to 36 inches. 770/984-8880; [www.usbsec.com](http://www.usbsec.com). ■

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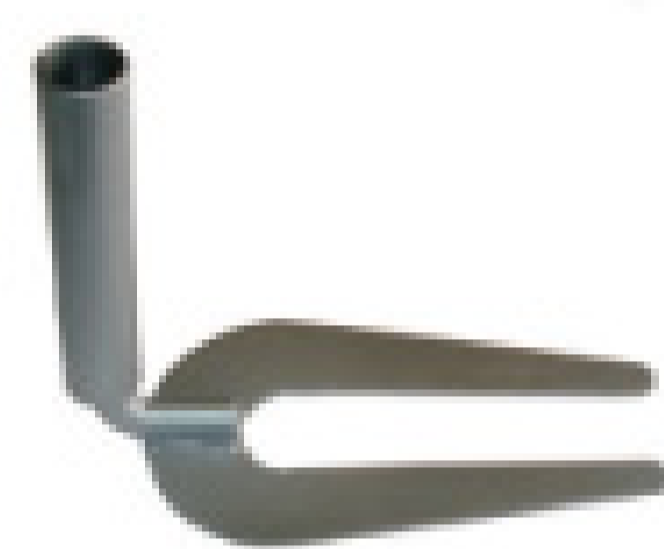


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Use Debris Catchers with Jet instead of Combo. Ideal where small amounts of debris are expected. Standard **MDC-6** model comes with 24' of Poly Rope. Available in sizes from 6" to 24".

## Grit Catchers

**MDC-6CW** are similar but have half moon bottom around sides and back to stop finer grit and black sand from flowing thru. Fills with material faster.



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**MHG-2**  
Horse-Shoe Grabber. Great guiding hose in and out of sewer lines.

**MDS-6**  
Debris Scoopers Heavy duty construction For 6", 8" and 10" Pipe sizes.

**MBC-1**  
Catch Basin Spoon. Nice round 9" paddle for general use. Fiberglass or wood poles.

Debris Catchers and Grit Catchers can be used with any length of Fiberglass Poles instead of with ropes. All the special tools at left can also be used with same poles.

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Debris Catcher

Grit Catcher

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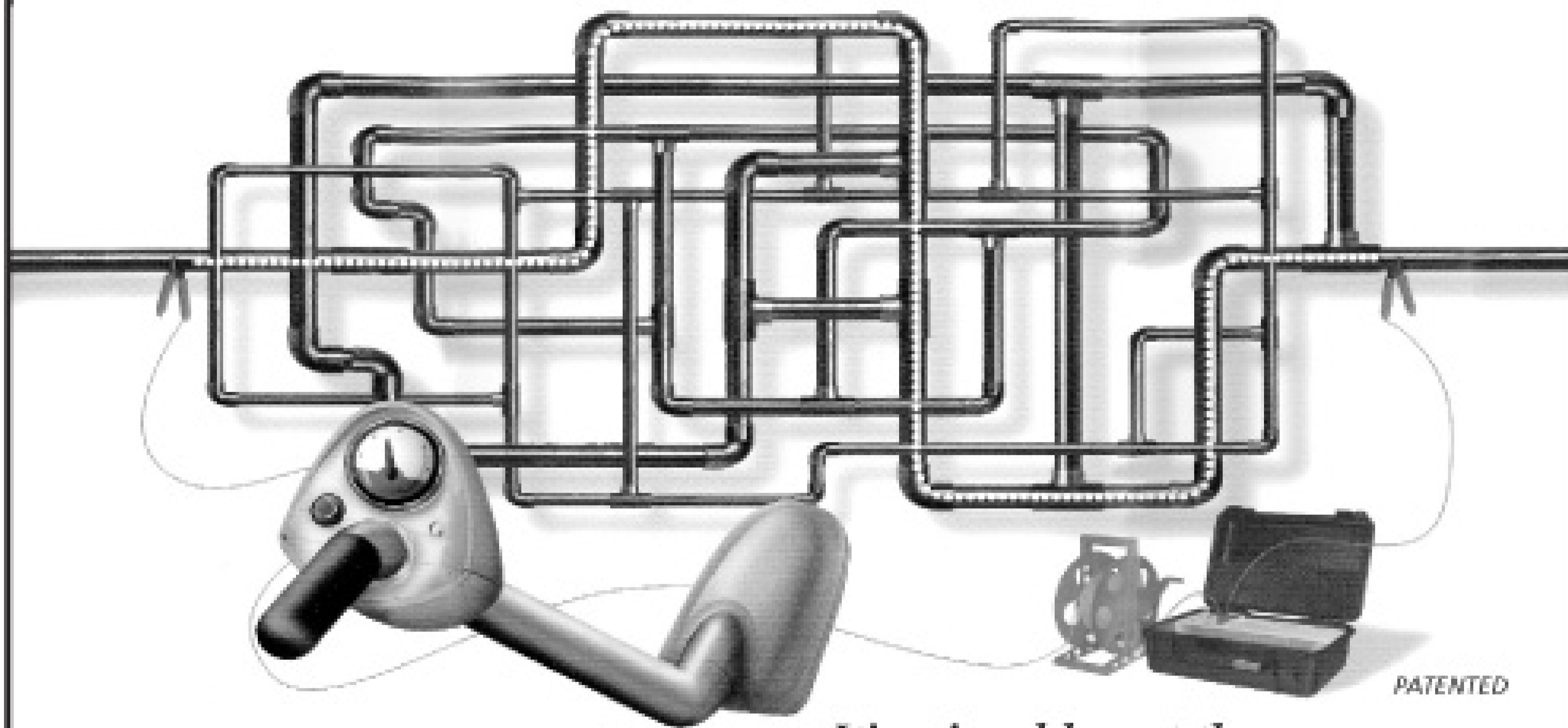
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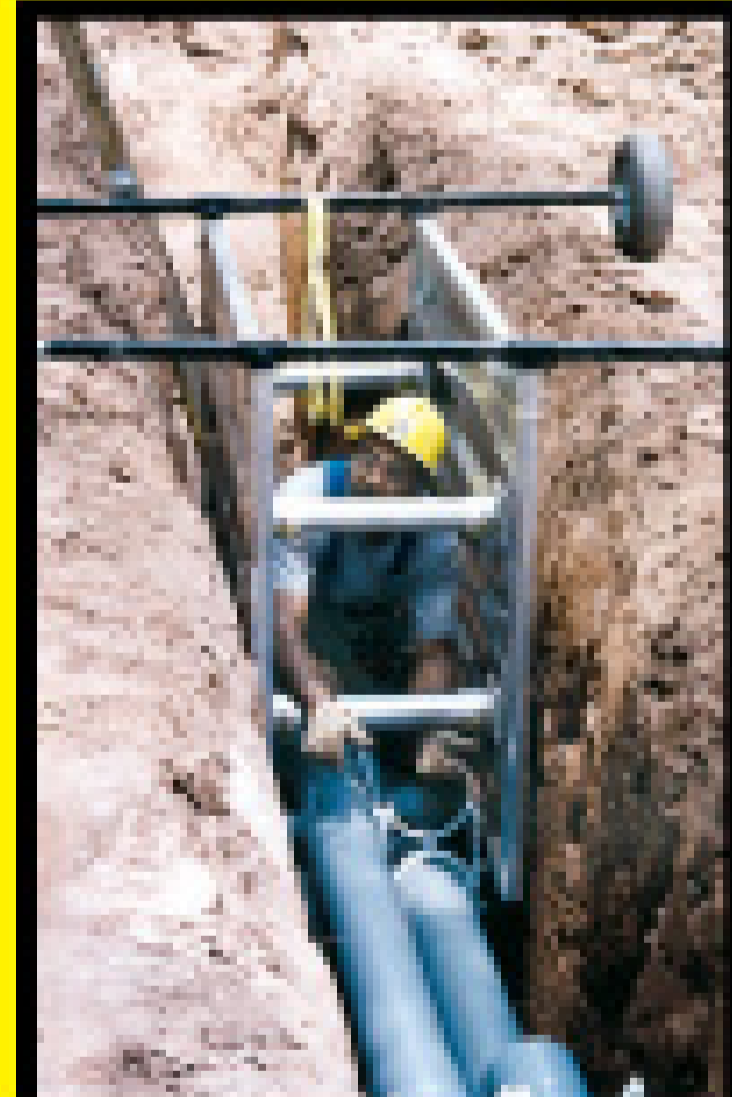
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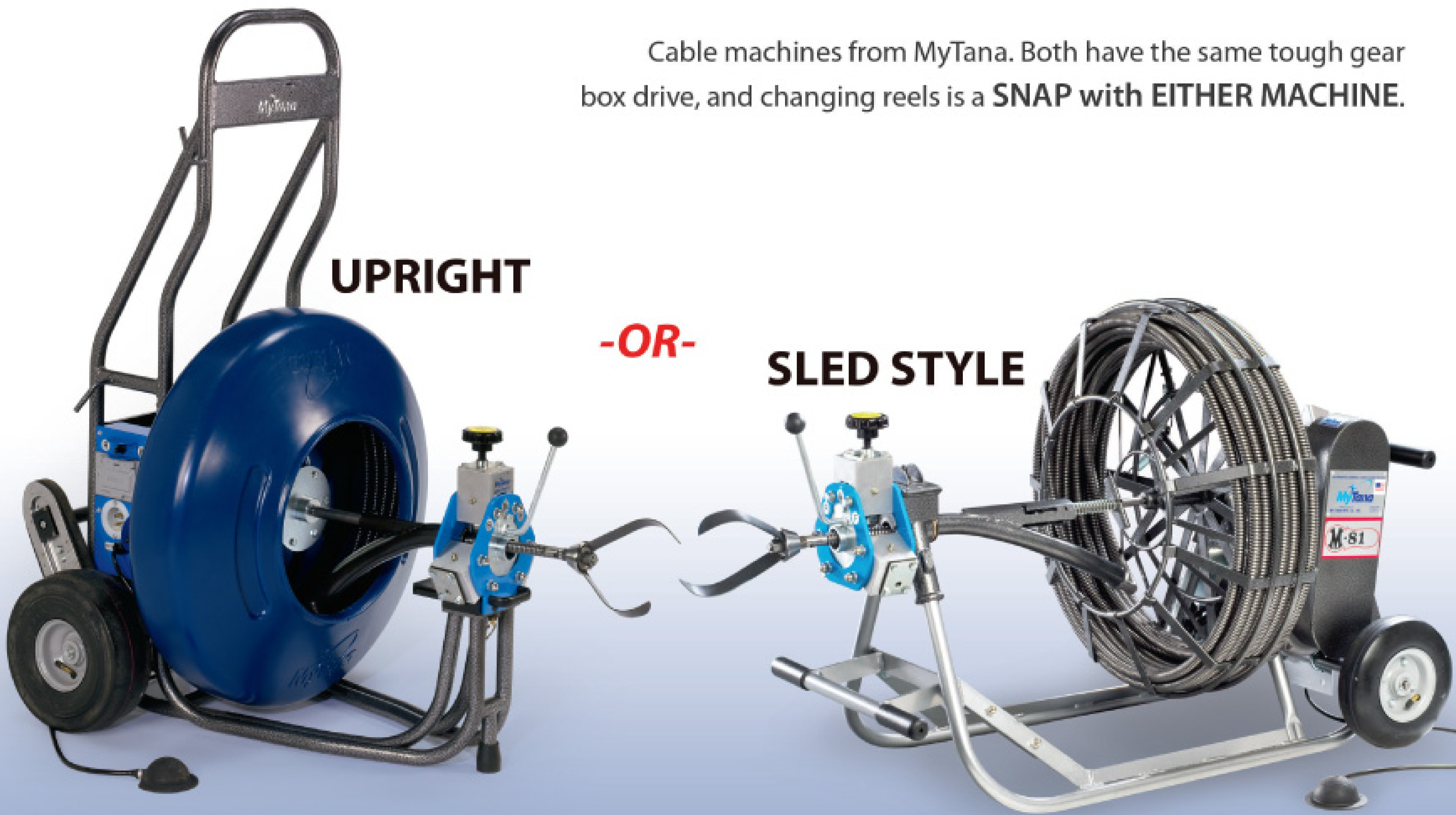
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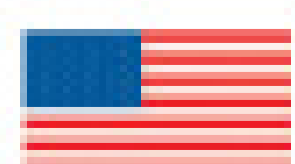
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# Jetting by Numbers

By Ken Wysocky

**H**ow do you get a hydrojetting contractor to let loose his inner Picasso in public? Just ask, according to Brian Gleeson, owner of Midwest Mobile Waterjet LLC, based in suburban St. Paul, Minn.

The firm's waterjetting wizardry is on exhibit at the Walker Art Center in Minneapolis. Midwest

crews used high-pressure water to blast thousands of holes that, from afar, create a random, paisley-like pattern on the exterior of the center's walls, made out of poured concrete mixed with pea gravel.

"It came out of left field," says Gleeson. "It's really cool. I've never seen anything else like it." The architecture firm that designed the center, which opened in 2005, asked Gleeson if he could replicate a dot pattern on the exterior of the center's parking ramp and on its lobby floors. Intrigued, Midwest workers built concrete slabs and pattern mock-ups and "blasted the heck out of them," Gleeson says.

When they figured out how to make it work, the design was downloaded into a computerized waterjet cutting table. Then the machine cut a stencil out of about a dozen, 5-foot by 10-foot sheets of metal 1/8-inch thick.



Midwest Mobile Waterjet used its work tools to create a unique design on the walls of the Walker Art Center in Minneapolis, Minn. (Photos courtesy of Brian Gleeson)

Next, the workers bolted the metal sheets to the center walls and floors and went to work. They used a Jet Edge 36-250 DX waterjetter (made by Jet Edge Waterjet Systems), which generates 40,000 psi/4 gpm, equipped with a Gyrojet multi-jet rotating nozzle, made by Siddharth Enterprises.

"You can't cut concrete unless you hit it with at least 20,000 psi," Gleeson notes. "As long as you hit the wall perpendicular, and not at an angle, you're good." Since that project, Midwest did a similar job at a

high-end condominium development in New York City. But Gleeson says the company has no plans to broaden its reputation for artistry.

"We haven't really marketed it," he says. "It's pretty expensive to do." But getting your work displayed at a major art gallery? Priceless. ■



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# More Profits: Month-by-Month

Here's a one-step-at-a-time approach to improving the management of your money, your business, and your life in the new year ahead

By Erik Gunn

**A** new year will soon be here. What better time than now to map out the next steps your business can take to better manage its revenues, expenses, profits and cash flow?

Of course that can involve many tasks and take you in so many directions that you can be easily overwhelmed. So make it easy for yourself. As the Old Testament scribe said, "To everything there is a season." Here's a month-by-month game plan to help keep your business on a smooth course. It should help you earn more money, keep more of what you earn, and manage what you keep more effectively.

## January

Get your taxes together. Make sure your receipts and expenses are properly organized and sorted. Here's hoping you don't just stuff everything into shoeboxes during the year, but if you do, at least separate them into meaningful categories that can save your accountant hours or days, and save you hundreds of dollars on your tax-preparation bill. If your accounting professional provides a year-end worksheet to fill out, get to that right away.

## February

Just in time for Valentine's Day, love your customers. Take some time to drum up strategies that can woo the people without whom you wouldn't have any business at all. Can you set up a preferred customer discount system? Or offer low-cost services that you can deliver cheaply, impressing your customers with your service quality while keeping you top-of-mind when they need a solution later?

## March

Spring cleaning. Take a good look around your business – physical plant and equipment – and the financial books that tell the story of your business on paper. What can you clean out in the form of unnecessary expenses, underperforming assets, or unprofitable lines of work that have no role in your long-term success?

## April

File your taxes. As you review your final returns, strategize for ways to bring your tax bill down next year. Schedule some time with the professional who prepared your final documents and solicit his or her advice. (You'll probably want to wait until after April 15, so your accountant can catch up on sleep!)

## May

Plant your garden. People who grow their own tomatoes get the seeds in by Memorial Day. This month, borrow a habit from them and think about ways you can grow new, nourishing lines of business. Can you open up an under-served territory? Add on an innovative new service for existing customers? What seeds can you sow that will let you reap profits in the future?

## June

In the traditional month for weddings, think about possible partnerships. Can you team up with someone – an allied business, a supplier, even a competitor – who can help enhance your operations?

## July

It's time for summer reading – not just spy thrillers or scandalous best-sellers, but books about business and financial strategy. Find at least one good one and take the time to read and learn from it. Be selective – there's a lot of nonsense between some hard covers. Rely on your local library as a way to skim some potential selections, so you can decide which books might be worth buying.

## August

You need a vacation. When was the last time you took one? Too many business owners never leave time to relax and recharge, and that can cost them in their business or personal lives. Of course, to vacation successfully means planning for while you're gone, so make sure you have a back-up team you can trust to run things smoothly. Then, go pitch a tent, or head to the beach, or pick up a fishing rod, or just let yourself loaf.

## September

It's back-to-school time. Look around your community for inexpensive resources – like the community college or state university-based small

business development center – where you can build your own and your employees' skills in the financial side of your business. Constant learning is a must in these uncertain economic times – and anytime.

## October

The tradition of Halloween, some say, is one way we learn to face our fears. You can bring that same spirit to your business. What is it about your business that scares you the most? Just as your youngster learns to master the heebie-jeebies by trick-or-treating amid the ghouls and goblins, you can face up to fears holding you or your business back from greater success.

## November

Thank your customers, and your employees, too. Without either of them, your business wouldn't exist. Make sure they know that you appreciate them.

## December

In the season for giving, give back. First, how can your business give back to your community? Perhaps you can offer pro bono services to worthy causes, like providing cost-only or free drain inspections for the local homeless shelter, or establishing a training program in your trade for underprivileged youth. But give back to yourself, as well. Look back on the year just passed, and think about what you can give to your business to enrich the year ahead.

So there it is: a 12-month calendar to help you run your business better. There's no magic to the order outlined here. And you might come up with other equally worthwhile tasks more suitable to your needs. The important thing is to give yourself some structure. Managing your money, business or personal, is a big job. Taking it a season at a time can help make it less overwhelming, and more rewarding, too. ■

Erik Gunn is a magazine writer and editor in Racine, Wis., where he operates Great Lakes Editorial Services, consulting for businesses, non-profits and individuals. Readers may direct inquiries to him by contacting this publication at 800/257-7222 or e-mailing [editor@cleaner.com](mailto:editor@cleaner.com).



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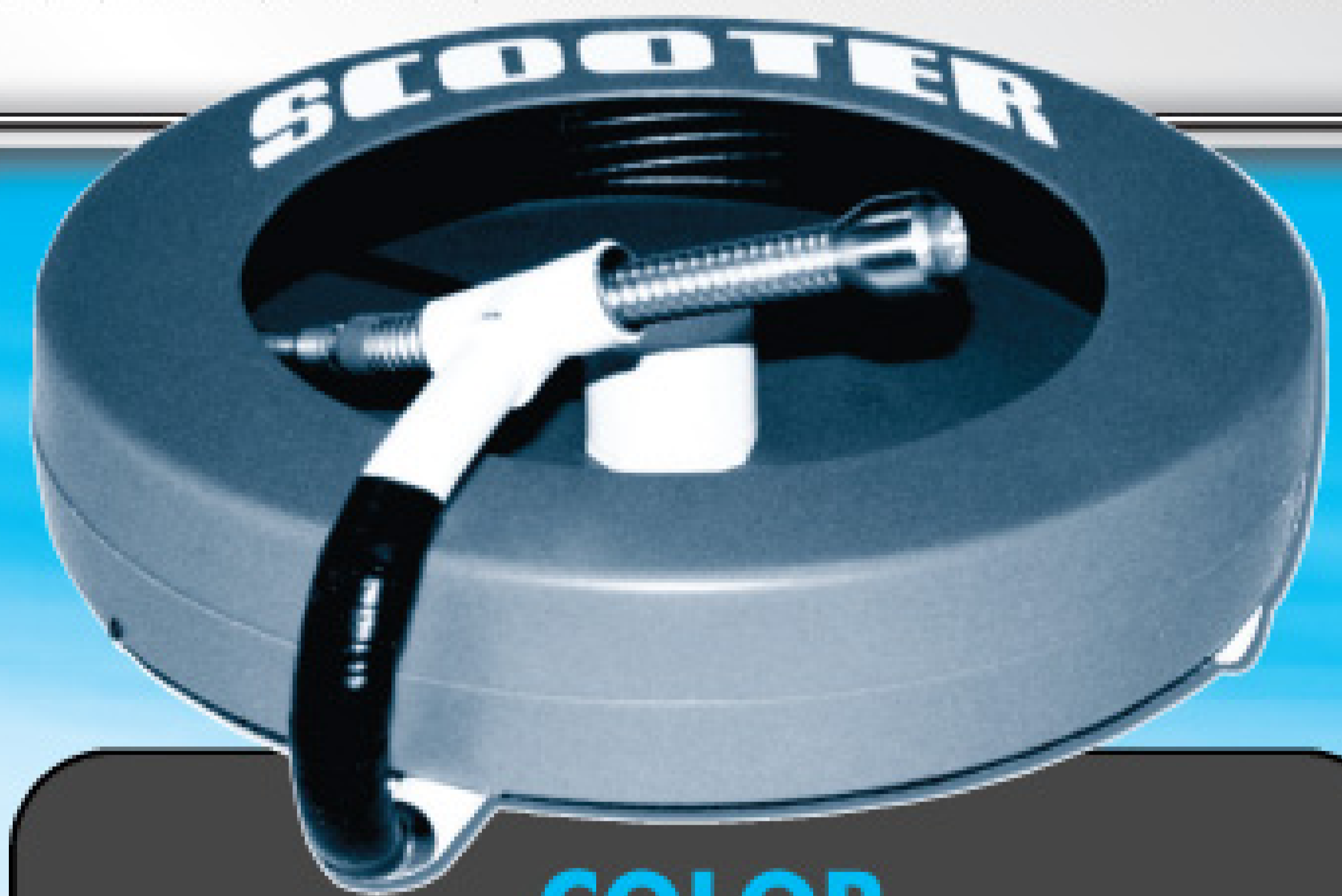
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## Abernethy Was A Vacuum Truck Pioneer

Billy J. "Bill" Abernethy, founder and president of vacuum truck-building company Abernethy Welding, Vail, N.C., died Nov. 4. He was 70.

Abernethy started a welding business in 1958 on the farm where he grew up, then started to build vacuum trucks beginning in 1971, according to his grandson, Billy Joe Abernethy. He was active in the business, selling trucks until he was hospitalized a few weeks before his death, the younger Abernethy said.

Abernethy is survived by his wife, Frances Rhoney Abernethy, and their son, Chris Abernethy. Both are involved in the business, which currently has 16 employees.

Abernethy enjoyed farming all his life, working on his property. He was also active in his church, Providence Baptist Church, Hickory, N.C. Roy Coffee, who worked for Abernethy for many years and was a friend and neighbor, remembered Abernethy as an upstanding businessman and a vacuum truck innovator, producing as many as 200 per year for the liquid waste industry. He concentrated on building trucks with steel tanks, and built rigs with tanks from 100 to 5,000 and 6,000 gallons, Coffee said.

"If Bill told you something, you could take it to the bank," Coffee said. "He was an honest and hardworking man. He loved the business, the industry and his customers. He was very dedicated to the industry."

Abernethy was naturally outgoing and had a great sense of humor, Coffee said, and especially looked forward to visiting industry friends at the Pumper & Cleaner Environmental Expo International every year. He also valued his employees, according to Coffee.

"He considered the people he worked with to be a part of his family. He took very good care of his employees," Coffee said.

The company will continue building trucks, and customers with questions can call either Billy Joe Abernethy or Daniel Weaver at 800/545-0324. The company's Web site is [www.abernethywelding.com](http://www.abernethywelding.com).

A funeral service for Abernethy was held Nov. 7 at Providence Baptist Church. Memorials are being directed to the church. ■

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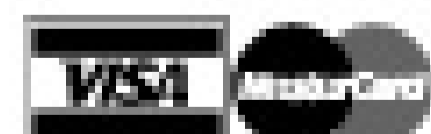


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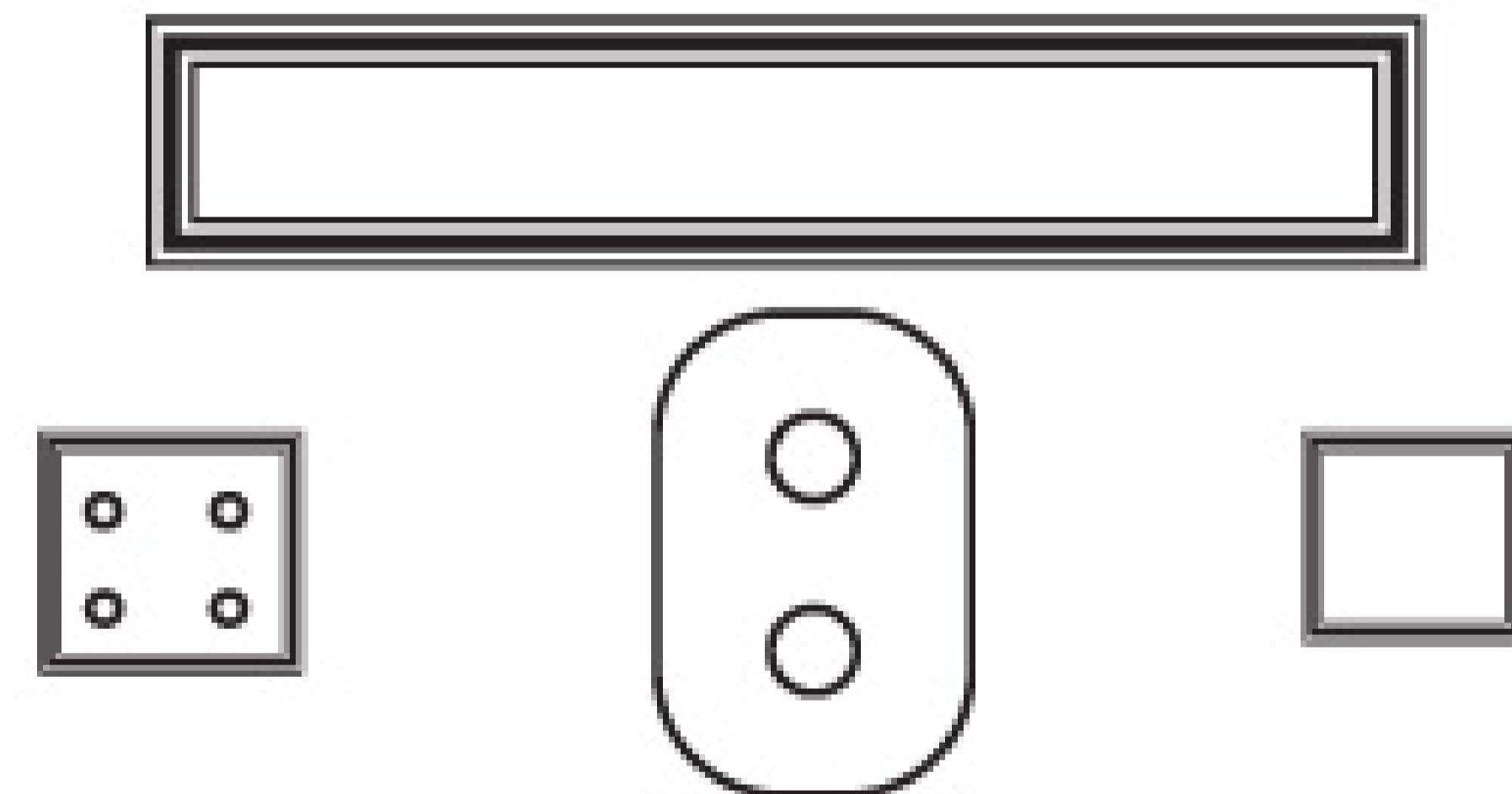
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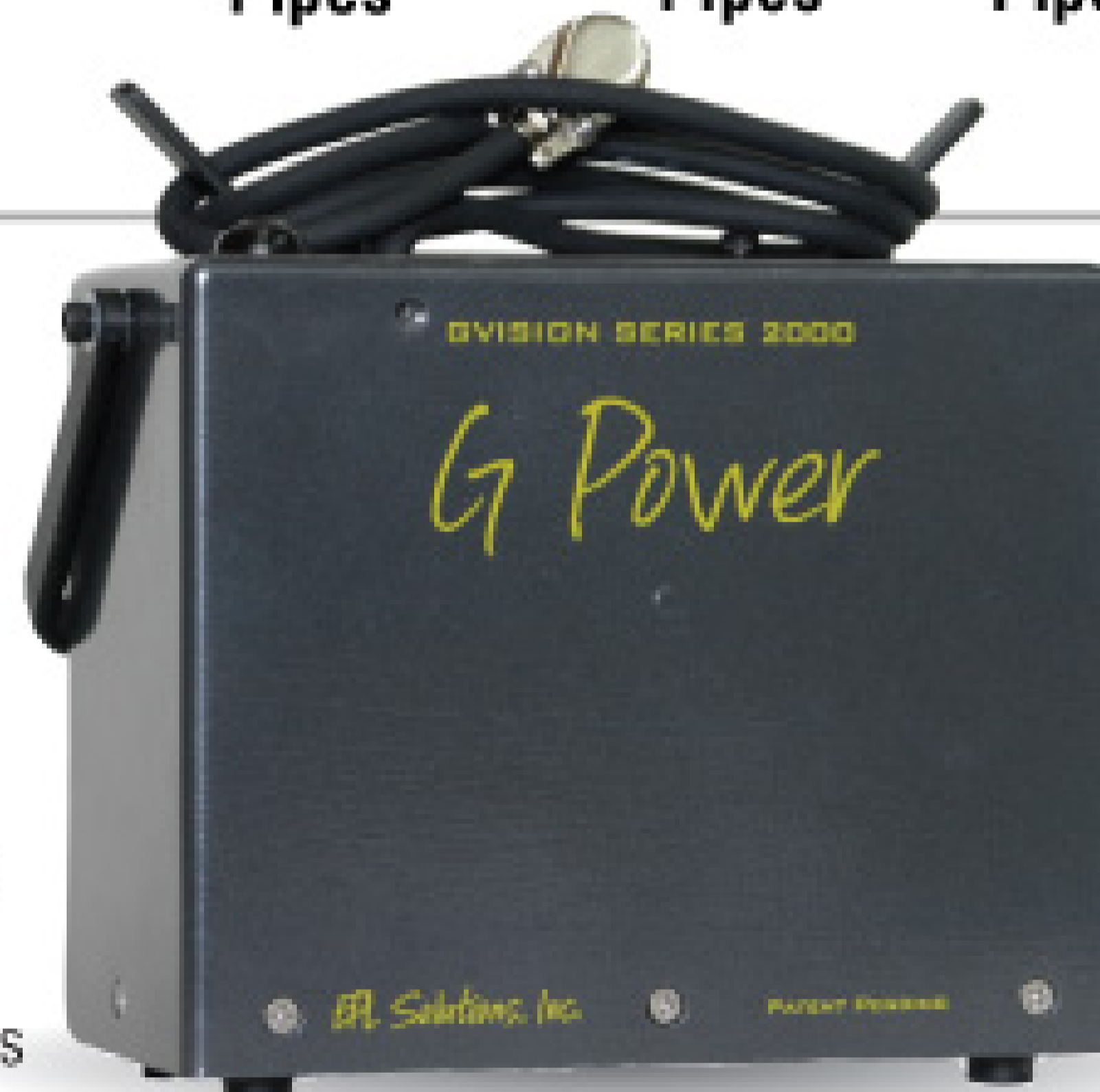
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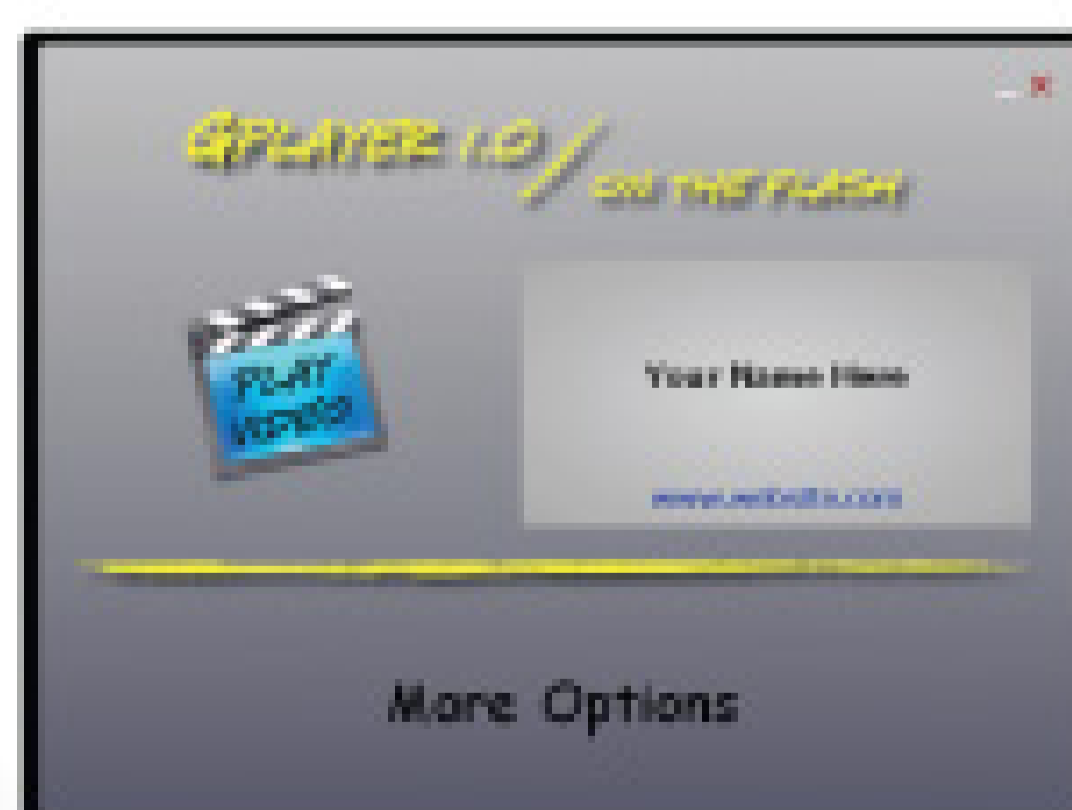
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# The Wanderer

Never underestimate what a talented rover can do to enhance your service, improve your technician team, and generate more revenue for your business

By Peter Morici

*Peter Morici is a business coach and sales trainer based in Shelby Township, Mich., providing resources specifically for the service-contracting community.*



**W**hen I was a plumbing manager, I needed a special type of assistant. He had to be able to estimate jobs of any size and type. He would be responsible for locating pipes that were beyond the capabilities of the line-locating equipment and would assist service technicians on deep excavations.

He needed advanced plumbing skills and a familiarity with building codes and OSHA regulations safe trenching. He needed intimate knowledge of inspection cameras and jettors. He had to be able to think in the field, close sales, and write a tight contract. In short, someone with superior skills in all facets of the plumbing and drain-cleaning business and advanced skills in associated technologies.

with an experienced person, committed to getting it right the first time. In addition, the way a rover performs rubs off on the technicians who call him for assistance.

My rover carried a camera, a line locator and a few specialized hand tools. Anything else he needed was already on the job in the technicians' trucks. He traveled fast and light. He was on 24-hour call. He eliminated numerous customer complaints by anticipating them and never allowing those objections to occur. The result was smoother, hassle-free jobs with satisfied customers who gladly paid for a job well done.

In a small company, the rover is usually the owner. My rover was me. For five years, I hopped from one jobsite to the next – the toughest ones where my men needed help. That's how a rover develops a

## To the rescue

How does a rover help? One of our technicians called me out one day. He had been on the jobsite for several hours with a trailer jetter and could not clear a commercial drain stoppage. It was a strip mall with seven restaurants, and they were all flooding from their floor sinks and floor drains. Everyone was panicking because they had to close, and they were losing money. The mall owner was there too, frustrated and anxious.

I jumped in as the rover and went to work. This was a long sewer line with no cleanouts close to the stoppage. The jetter would bind almost 300 feet downstream. Old grease in a restaurant sewer can be as hard as rock.

This grease was too much for our jetter to break through. Every

## Costly repair

This was a \$10,000 repair, just for openers. The backhoe and my crew were digging within two hours. We called a pumper to take the greasy water as soon as we cut the line. After we exposed several feet of the pipe, the backhoe driver scooped out a pothole on both sides, deep inside the trench, directly alongside the spot where we wanted to make our first cut to purge the system.

The narrow partition of dirt between these adjacent holes, (directly below the pipe) had to be knocked down with shovels, creating a larger, singular catch basin below the sewer. We then lined the makeshift basin with plastic drop cloths.

The pumper positioned his hose into the protected basin we created and stood ready. We snapped the

**A rover keeps your team sharp by continually learning, teaching and sharing information.**

**When the rover shows up, he takes complete control. The technician should bring him up-to-date quickly, then take a quiet, secondary position. In the customer's mind, the rover was called to give an expert diagnosis.**

**He's the answer man.**

This person – called a rover – was an estimator, trainer and negotiator, and a service technician's best friend. Not only would he make sales for the technicians, which increased their income, he would teach them how to do it themselves, by example.

## Always learning

When a rover is on the job, the technicians make more money, and so does the company. Customers benefit from the rover's accurate diagnosis. They take comfort in knowing they are in direct contact

high skill level. Every time his wits are challenged on a not-so-obvious diagnosis, or he encounters a new twist on an old problem, he learns something new. His bag of tricks grows daily.

A rover keeps your team sharp by continually learning, teaching and sharing information. When the rover shows up, he takes complete control. The technician should bring him up-to-date quickly, then take a quiet, secondary position. In the customer's mind, the rover was called to give an expert diagnosis. He's the answer man.

time we pulled the hose out of the pipe, it was covered with old, smelly grease. I told the owner we would need to locate the stoppage and cut the pipe. The owner was reluctant, but I took the "expert" posture, and he approved the job.

We strapped our locating transmitter to the jetter hose with several layers of electrical tape, about three feet behind the jetter-head, and allowed the jetter to pull the transmitter to the sticking point. I located the pipe at eight-feet-deep under a heavily traveled, six-lane boulevard, and it was rush hour.

pipe, the water rushed out, and he pumped, all in one choreographed motion. Hundreds of gallons of greasy water were collected safely, leaving us a clean trench.

We replaced 10 feet of 8-inch sewer lateral and covered the trench with steel plates for overnight safety. The owner said, "Thank you, good job." I could have said, "You're welcome" and returned to the office, but I didn't. This is where a well-schooled rover makes a profitable difference.

My response was, "Don't thank me yet. We still have much to do. All we have done so far is to relieve the



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symptom. We need to find the causes and service the drains that are conveying grease."

### Clean them all

I then told the owner that since all the drains below the restaurants had been subjected to a major grease backup, they should be jetted now to remove the sticky residue left clinging to the walls of the pipes. It was less expensive to do it now, as the manpower and equipment were already on the site.

He approved that, too – 42 secondary drains. While jetting these drains, our jetters tunneled out of several pipes under the restaurant kitchens, exposing more needed repairs, which the owner also approved.

All the establishments had grease interceptors that had not been pumped in a long while. Since my pumper was on site, we offered to do it now. He approved that too. The pumper emptied each unit. We powerwashed the interior area with our jetter's spray-gun attachment to break up the caked-on grease. Then we

repumped the interceptors, leaving each one clean and empty.

To make a long story short, my rover sold \$40,000 in immediate jetter work and sewer repairs using his camera, locator and jetter. When the owner presented the check several days later, he asked, "Are we done now, Pete?"

I kindly replied, "Nope. You just spent all this money, and it's time to protect your investment. Let's set up a preventative maintenance program, and I'll warranty the drainage between the scheduled interval cleanings.

"You have an old, fragile plumbing system and several heavy grease contributors for tenants. I think a PM once a month for \$2,250 is appropriate." He didn't like the idea of spending \$27,000 annually to keep his drains flowing. He wasn't very motivated. Besides, the interior drains were the responsibilities of the tenants.

### One more push

I had one more idea. We invited all the restaurant owners to a tenants' meeting and offered them a package deal, with the condition that they all

had to participate. I reminded them that closing their stores for a single day would cost them at least several hundred dollars in lost business.

They agreed – it was obvious. I then offered them a maintenance program for the whole strip mall. Normally, the tenant pays for interior drain cleaning and the owner pays for outside sewer cleaning. The deal was that each tenant would pay \$325 monthly, and we included the sewer service in the price.

They liked the plan. They didn't want to repeat the mess and down-

time they had just experienced. The owner liked it as well – the tenants were absorbing his portion of the maintenance expenses. I wrote a contract, and they all signed it. The maintenance would generate \$27,300 annually, and it was a two-year contract.

That one drain stoppage yielded \$40,000 immediately and \$54,600 over the next two years. That's what a rover with his camera, locator and jetter can do for you. ■

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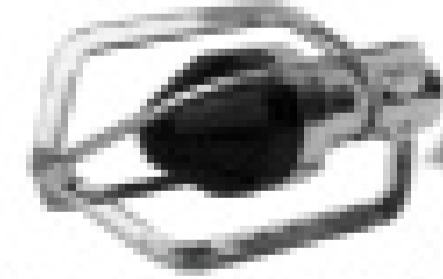
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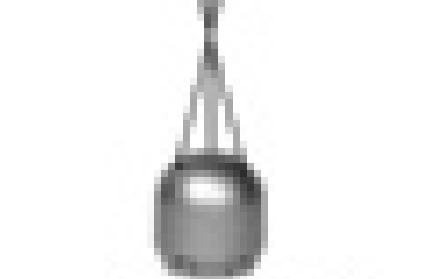
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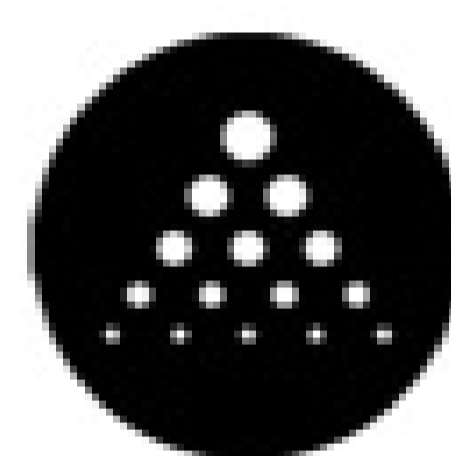
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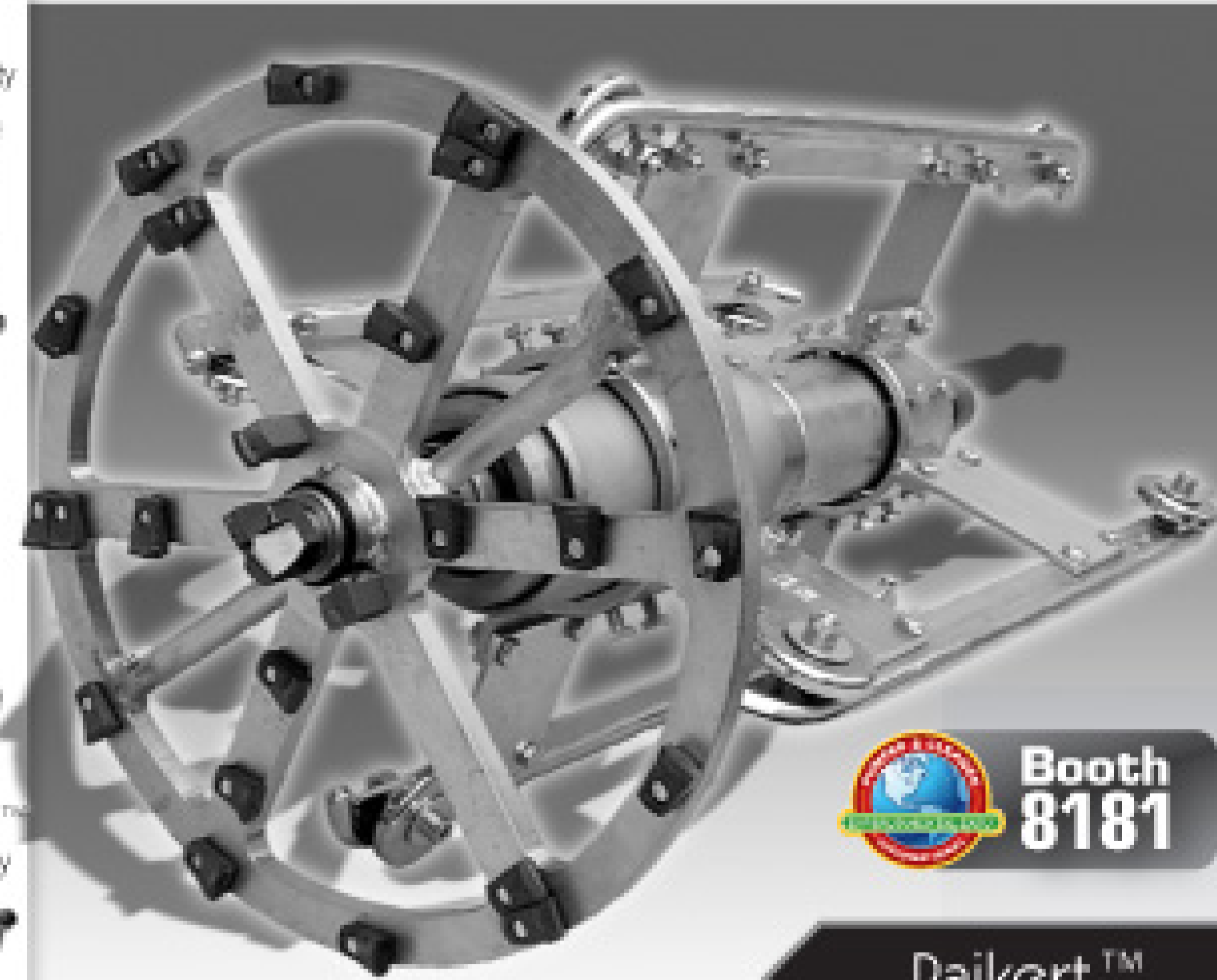


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# Top-Flight Organization

A well-stocked truck keeps All-Pro Plumbing's owner on task and sharp graphics keep those customer calls coming

By Ken Wysocky

**W**hen it comes to organization, Shawn Schwoyer is Hall of Fame material. For proof, look inside the well-stocked, meticulously organized truck he operates as owner of All-Pro Plumbing in Allentown, Pa.

This 2002 Isuzu NPR truck carries a Hackney P2000 plumbing service body, 12.5 feet long, 7 feet wide, 79 inches tall. Its adjustable-shelf storage system holds 75 plastic bins, each labeled with a letter and numbers. The numbers on the right-side bins start with "R," and the

**"Anecdotally, I know that the truck generates new business. Whether you like the design or not, you can't miss the truck. I incorporated the same artwork that appears in my Yellow Pages ad onto my truck. Consistency breeds top-of-mind awareness."**

Shawn Schwoyer

numbers on the left-hand bins start with "L." The numbers correspond to specific parts, and a spreadsheet printout shows what code number goes with what part.

"For example, the spreadsheet tells me that R26 is a 1/2-inch copper fitting, so that puts me right where I need to go," Schwoyer says.

"If I know exactly what I have on the truck and where it is, I can finish jobs faster and get to my next service call quicker. The more billable hours I achieve, the more profitable I am.

"I like to be organized. If I have three service calls in a day, and I'm not organized, I might not make it to all of them. Plus, I use flat-rate pricing, and the customer's not paying me to spend time driving to a supply house, or spend an hour looking for a repair part on the truck."

Being organized yields another benefit: tighter inventory control. Schwoyer religiously keeps track of parts on-hand, so he knows when it's time to replenish stock. "I don't waste money by overstocking with parts and pieces that I'm unaware of

## MONEY Machines

### MONEY MACHINES

<b>OWNER:</b>	All-Pro Plumbing, Allentown, Pa.
<b>FUNCTION:</b>	Residential plumbing and drain cleaning
<b>VEHICLE TYPE:</b>	2002 Isuzu NPR truck with Hackney P2000 plumbing service body
<b>PRIMARY EQUIPMENT:</b>	Gorlitz GO 68 and Gorlitz GO 380 drum drain-cleaning machines
<b>COST:</b>	\$28,000
<b>WEBSITE:</b>	www.allproplumbing4u.com



Artwork on All-Pro Plumbing's trucks matches the ads placed in the Yellow Pages. (Photos courtesy of All-Pro Plumbing)

because they're scattered in different places on the truck," he says. "I don't understock, either."

Moreover, Schwoyer believes a well-organized truck boosts customer confidence: A neat truck translates to neat work. "That's how it flies in this business," he says.

In business for 11 years, Schwoyer used to drive a box truck with a 36-inch-wide side door and a large rear door. The side door took away valuable storage space, and the big, bulky rear door was a hassle to open and close. He loves the Hackney body's back door, which is split into two independent halves. "I only need to open one door to get in and out," he says.

Schwoyer also touts the truck's slide-out rear ramp, which makes it a breeze to move drain-cleaning machines and other items by himself.





The 2002 Isuzu NPR truck carries a Hackney P2000 plumbing service body. Inside, the adjustable-shelf storage system holds 75 plastic bins, each labeled with a letter and numbers to simplify part location.

"It's a lot less strain on my back," he notes. The adjustable shelving lets him carve out enough room to keep a toilet on the truck, or tote a water heater when needed.

The truck carries two machines from Gorlitz Sewer and Drain Inc.: a GO 68 drum machine for up to 6-inch lines, and a GO 380 for up to 3-inch drains.

On the exterior, the Hackney body has few exposed rivets, and that makes advertising look better. Schwoyer takes full advantage with a bold, bright-yellow-and-black vinyl wrap with red accents. The highlight is a humorous and eye-catching image of a woman jumping for joy below his company logo: *Finally, plumbing that's pain free!* The company name, phone number and Web address appear boldly on both sides and on the rear doors.

"Anecdotally, I know that the truck generates new business," Schwoyer says. "Whether you like the design or not, you can't miss the truck. I incorporated the same artwork that appears in my Yellow Pages ad onto my truck. Consistency breeds top-of-mind awareness. I also pay for advertising space on two bus shelters in town. I keep all the advertising consistent so that when people see it, they automatically think, 'Oh, there's All-Pro.'" ■

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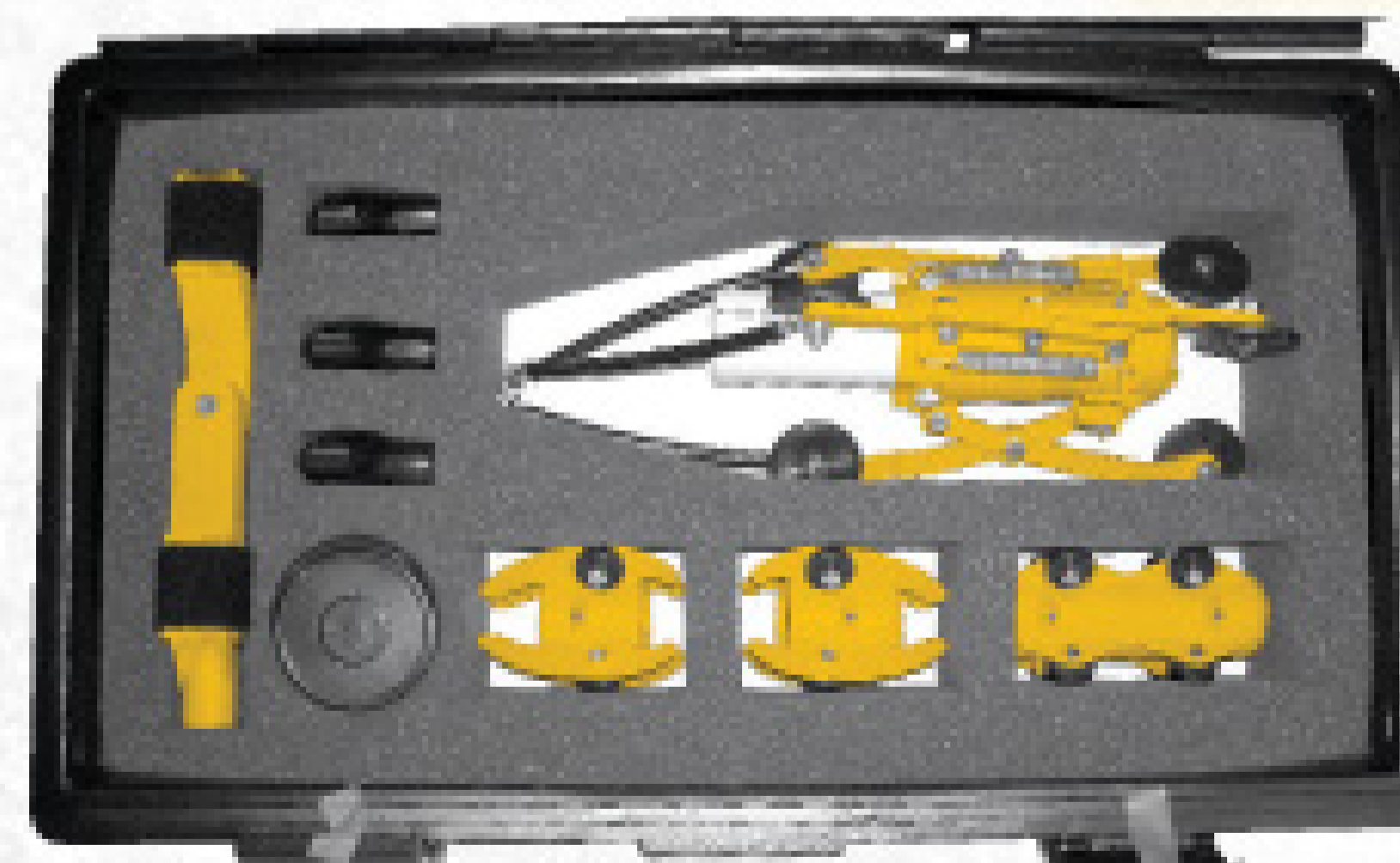
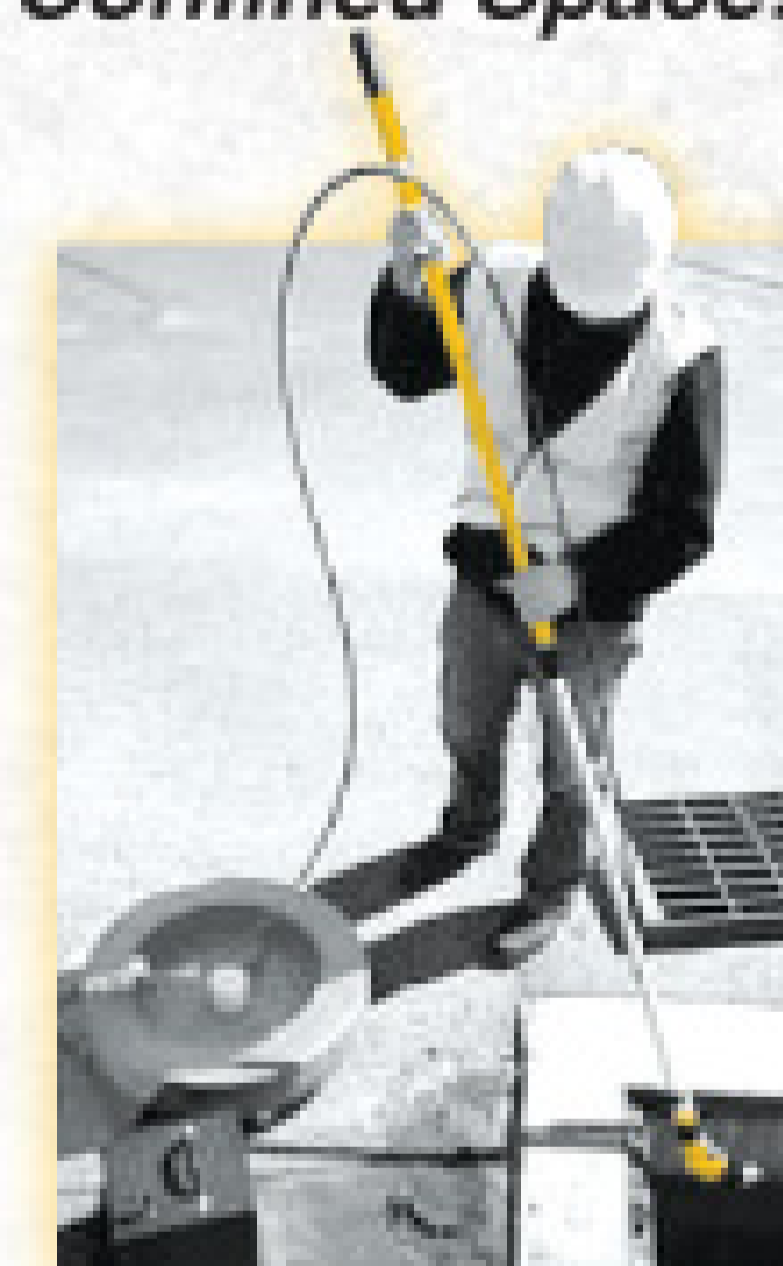
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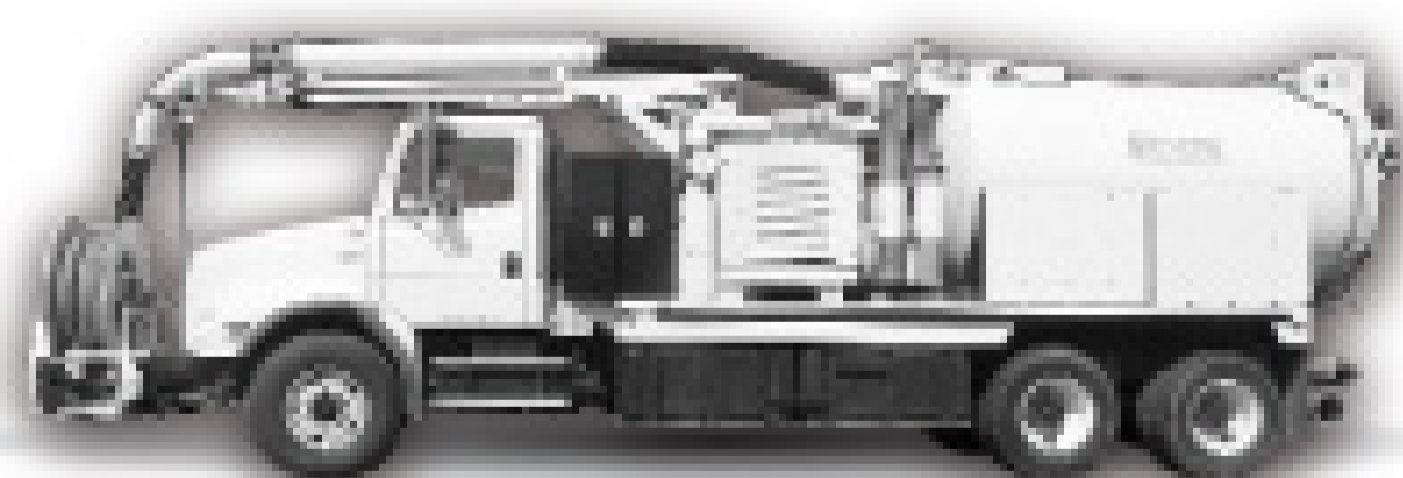
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# Rip, Cut, Saw, Jet

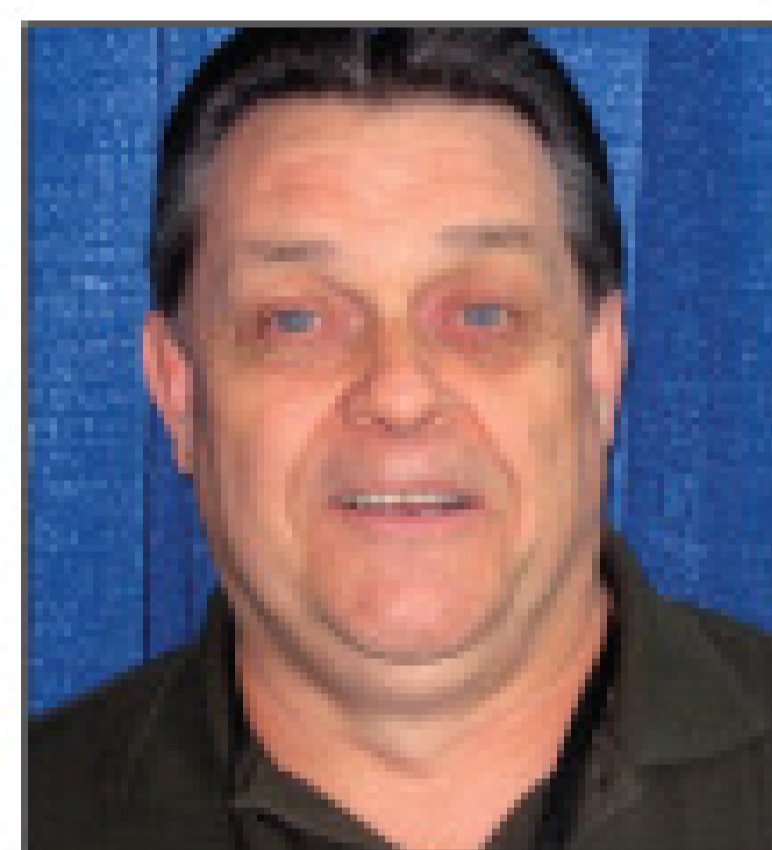
Contractors share their preferences in jets and mechanical equipment for getting stubborn roots out of sewer laterals and mains

By Ken Wysocky

Some drain cleaners prefer to use a drain machine with an assortment of cutter heads to remove roots from blocked lines. Others prefer high-pressure waterjetters. But no matter what equipment they send down the line to attack roots, there's no dispute that inspecting a line upon completion is a must – just to make sure it's clear of debris.

In some situations, contractors must admit defeat and give way to excavating to repair a badly damaged pipe. Here's what a few cleaning contractors say about their preference for getting to the root of the problem inside blocked lines.

"To remove roots, we use either a snake with cutter blades or a high-pressure waterjetter," says



**Dennis Bastarache**

**President**  
D. J. Bass Inc.,  
New Bedford, Mass.  
Employees: 7  
Years in business: 37

Dennis Bastarache of D. J. Bass Inc. in New Bedford, Mass. "Jetters don't cut out roots as well, unless you have a large commercial jetter.

"With a jetter, there's enough room in the pipe that the roots tend to float around, so they're not rigid enough to cut with water. It's not like cutting a rigid board with a saw. Most times, I use a jetter only for removing roots from storm drains – 6-, 8-, 10- or 12-inch lines. But at that size, they're tough to get out.

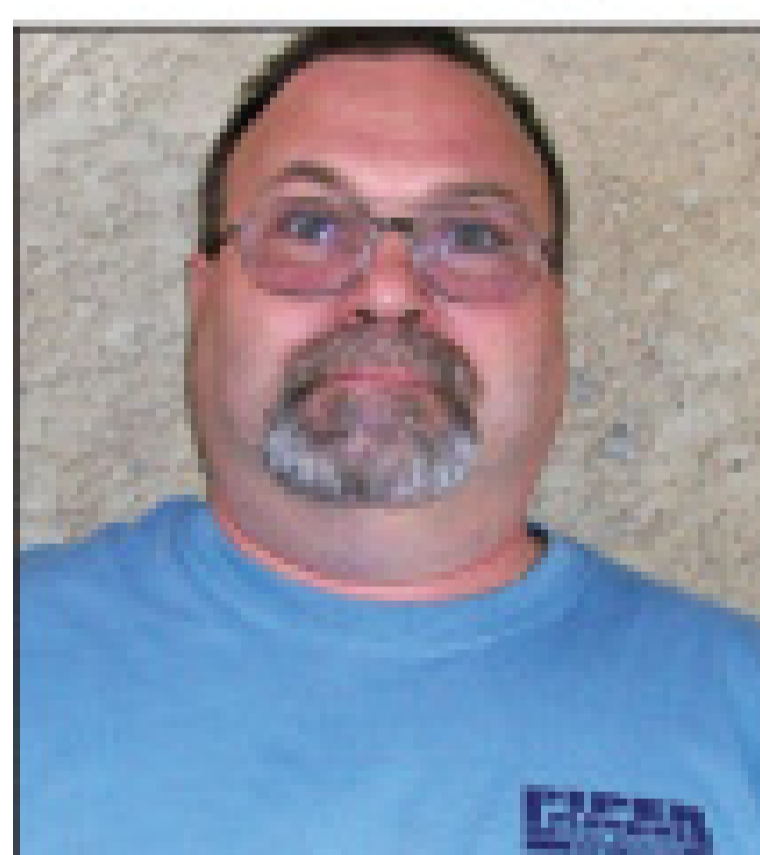
"On residential lines, we first try to get a camera in there and see what we're dealing with. It's

usually either veil roots, which run across the pipe, like a wall, or a tail root, which runs along the pipe, like a ponytail. Then we use a drain-cleaning machine with a spearhead attachment to initiate a puncture. We use a spearhead until we know what we're dealing with. After that, you know what kind of cutter head to put in there or what kind of equipment to use.

"The cutter head wraps around the roots and rips out what it can. It very seldom completely cuts the roots. The heads aren't the same exact size as the pipe, so there's a little space where the roots can get pushed to the side of the pipe, away from the cutter.

"After we rip out roots, we inspect the pipe to check out its integrity. I basically work on a line for no more than two hours. If I can't fix a residential line with a root problem in two hours, and can't get a camera down there, then I tell the homeowner they need to get a contractor to excavate the pipe.

"I'm honest with people and tell them they're better off financially to spend the money on replacing the pipe than having me there for four or five hours trying to remove the roots, or to end up with a recurring problem.



**Mark Piper**

**Owner**  
Piper Plumbing,  
Hilton Head, S.C.  
Employees: 9  
Years in business: 23

After we remove roots, we apply RootX chemical treatment. We like it because you don't need a license to use it and it's approved by the U.S. EPA."

"We still use snaking equipment with cutter blades," notes Mark Piper, owner of Piper Plumbing, based in Hilton Head, S.C. "But more and more, as we get into larger applications for 6- and 8-inch lines, sometimes even with 4-inch lines for homeowners, we try to use our jetter. With

Comments may be directed to Ken Wysocky in care of Cleaner. You may also e-mail pipelines@cleaner.com.

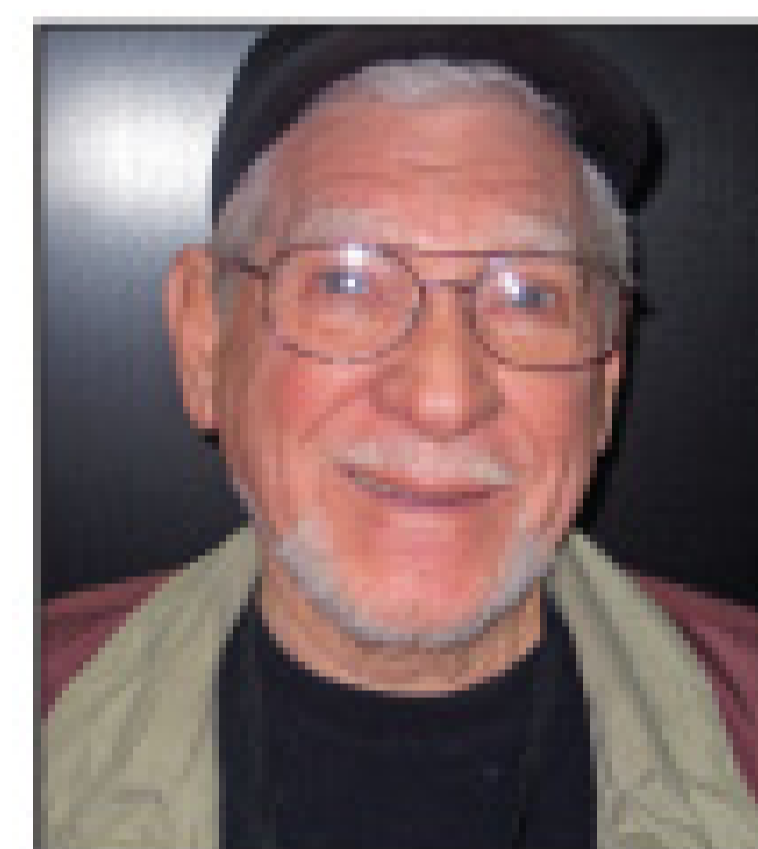


1,000 to 3,800 psi, our jetter will remove all debris out of the line so we can do a camera shot. It's a three-stage call: cleaning, camera and correction. That's the way I work the company right now.

"Jetting equipment will pull the grease, pull the food, and if you know where the problem is with the roots, you run it back and forth a couple times until it cuts them, then clear the debris from the line. It gives you a nice clean line for the camera. With a jetter, that pipe will be as clean as the day it was put in.

"There are applications where the roots are too big for a jetter. But the jetter makes for a lot easier, simpler and cleaner job. And of course, it's better money with the jetter. It saves more time. You start it on up, let it warm up and then send that jetter down there with 3,000 psi.

"If you want to pull the line out, you move it back and forth. Sometimes



**Charles Bruder**

**Owner**  
Bruder Sewer and Drain,  
Nekoosa, Wis.  
Employees: 2  
Years in business: 24

it gets stuck, but then it's just a matter of pulling on a hose, versus manually using a cable and getting on down there and ramming it and fighting it. A jetter requires a lot less effort."

"I prefer to use a cable machine with cutter blades," says Charles Bruder, owner of Bruder Sewer and Drain in Nekoosa, Wis., which cleans residential and public lines. "You can do a lot more kinds of jobs with a jetter, but mine is too small to use effectively for root removal.

"I've got all kinds of attachments, including one my brother invented that really does a better job than all the other ones I've seen. Mostly, I use a saw-tooth cutter. In rare instances, I use a retriever, which you sometimes need to get the roots out.

"The attachment my brother invented has a whip on the front of the cutter, bent into kind of a J-shape. It's set off to the side so as the knives go around, the end whips around and really cleans the pipe. I've been using it for years. It's really a good knife.

"When I'm done, I use a root retardant to help avoid on-going problems." ■

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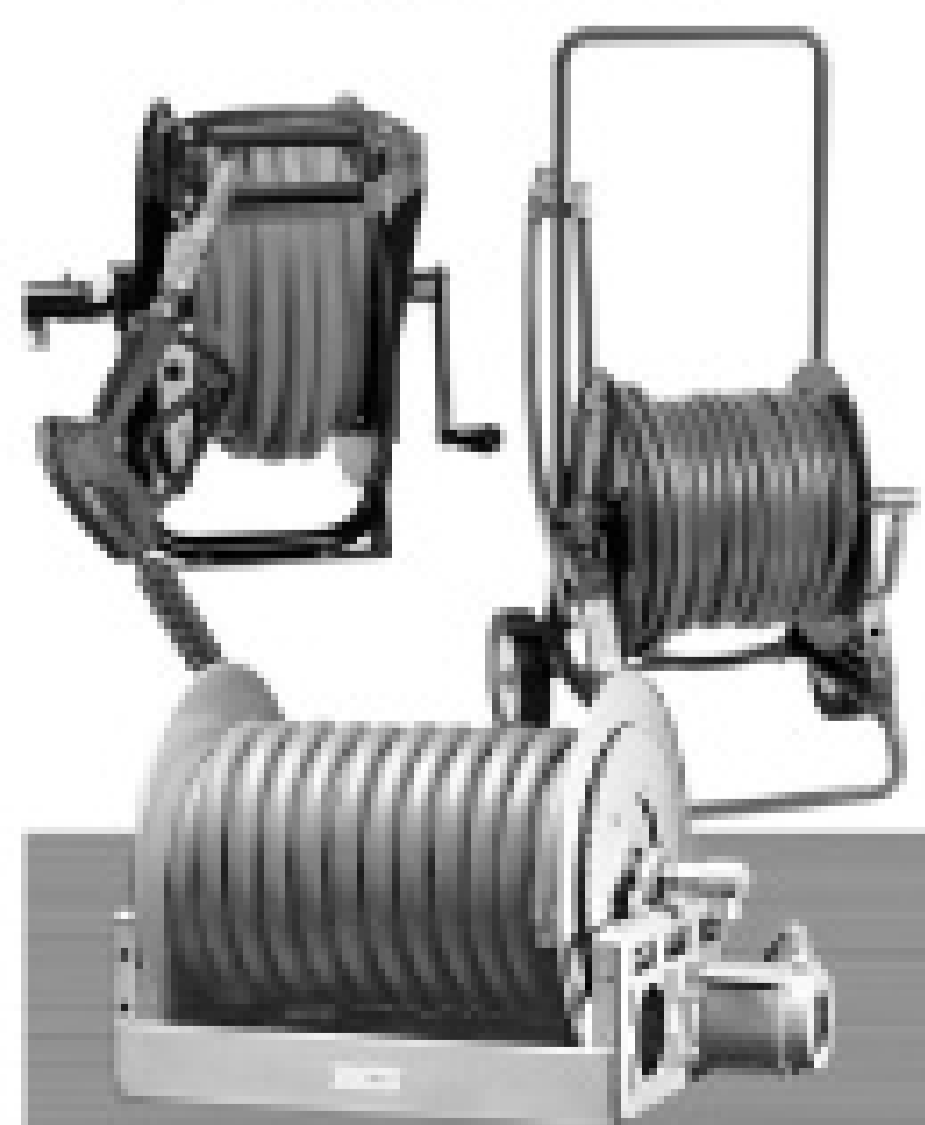
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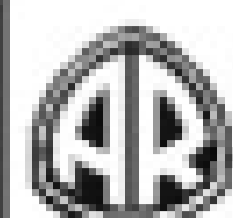
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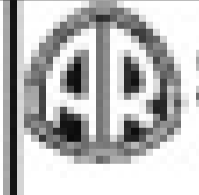
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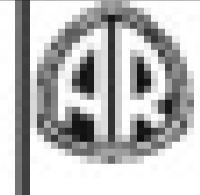
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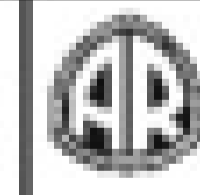
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# Ripples and Ridges

**A new bursting head coupled with pneumatic assist enables a California contractor to upsize a corrugated culvert and keep a boulevard open**

By **Scottie Dayton**

**C**omplaints from motorists of water ponding on the two-lane John Muir Boulevard in Daly City, Calif., brought a public works crew to investigate.

They found the 8-inch corrugated steel culvert that collects runoff from a golf course and the road badly corroded. Portions of the invert were missing, and several sections were collapsed.

With the golf course on one side of the road and the lake on the other, open cutting was not an option, as it would close the highway. Having worked with TRIC Tools Inc. in Alameda, Calif., Tom Piccolotti, the city's water and wastewater field director, asked TRIC technical field director John Rafferty if he could burst the 85-foot-long

corrugated culvert and upsize it by two inches.

TRIC had never done such work before. "We were concerned that the pipe around the collapsed areas could shred, and the bursting head would compact the shards into an impenetrable glob," says Rafferty. "Our other concern was the accordion factor, where the head folds the pipe against itself. Either way, the pull is over, and it's an open cut to retrieve the equipment and replace the pipe."

The company had tried a combination of mostly pull with some pneumatic hammer assist on a recent job, and believed that was the best formula for corrugated pipe. Using a new 8-inch fluted Unified Force head with a dorsal blade, a standard 4-inch piercing tool from



While assistant Ian Hom grasps the treaded stud on the cable with a pipe wrench to prevent it from turning, colleague John Rafferty attaches the cable adapter to the Unified Force head using a channel lock wrench.



Crew foreman Bob Donati (left) and TRIC Tools assistant Ian Hom watch as a backhoe extracts the fluted head, expansion skirt, and piercing tool from the pulling pit. (Photos courtesy of TRIC Tools Inc.)

Footage Tools Inc., and TRIC's HFHD-100 ram, Rafferty upsize the culvert without affecting traffic.

## Working partners

City workers jettied the culvert, then inserted a temporary 6-inch PVC pipe to drain the water into Lake Merced. They also strung a line through the pipe so Rafferty could tie it to the pulling cable and drag it to the entry pit. In addition, the men excavated three feet down for the entry pit, on the golf course side, and made a dirt ramp for the 10-inch SDR-17 HDPE pipe, which they provided and fused.

The 85-foot-long culvert discharged 10 feet below the road. Workers cut the exit pit into the side of the hill, then set up a trench box rated for 30 tons of shield capacity (side pressure). Before the job began, the city brought an air compressor to power the pneumatic

## TOUGH JOB

### PROJECT:

**Upsize a corrugated culvert on a busy two-lane boulevard**

### CUSTOMER:

Daly City, Calif.

### CONTRACTOR:

TRIC Tools Inc., Alameda, Calif.

### EQUIPMENT:

HFHD-100 pipe-bursting system with Unified Force head, TRIC Tools

### RESULTS:

**Culvert upsize without affecting traffic**

hammer and fed the air hose into the HDPE pipe. Workers also closed the bike-pedestrian path on the lake side and routed people around the vehicles and equipment. The traffic on John Muir Boulevard continued uninterrupted.

When Rafferty and assistant Ian Hom arrived, they attached the 1 1/8-inch threaded stud cable rated at 93 tons to the 5-foot-long, 4-inch piercing tool.

"The piercing tool is the pulling core and simultaneous hammer assist for our Unified Force head," says Rafferty. The tool fits inside the fluted head, which also has a 4-inch-tall dorsal blade 12 inches long. A 10-inch skirt expander fits into the back of the head and screws to the HDPE pipe. The expander creates the annular space for the larger pipe. A cable adapter connects the head to the cable.

"For this job, the primary force is a hard static pull," says Rafferty. "However, we expected the hammer to make a cleaner opening and keep the pull on track. We knew we had

crossbeams. "Our goal was to be as close to the edge of the box as possible to use the compressive strength of the sidewalls," says Rafferty. The city's

**"The HFHD-100 ram is rated at 60 to 100 tons and has two 5-inch cylinders. That certainly is overkill, but we wanted the extra power to save us should the pipe fold up."**

**John Rafferty**

backhoe lowered the 3-by-3-foot by 1-inch-thick steel resistance plate with 15-inch-diameter aluminum pulling wheel.

"The HFHD-100 (high-flow heavy-duty) ram is rated at 60 to 100 tons and has two 5-inch cylinders," says Rafferty. "That certainly

because we're going through corrugated steel and upsizing it by two inches."

Moving at 6 to 8 feet per minute, the pull was done in less than 15 minutes. The head caught the temporary PVC pipe and dragged it into the exit pit. "It never interfered with the expansion and jacket zipping of the corrugated pipe," says Rafferty. "Provided the trench box could support the pulling load, anything else in that pipe was gone." ■



Crew foreman Bob Donati (right) and Tom Piccolotti (left), Daly City wastewater director of operations, attach the ram to the backhoe bucket. TRIC technical field director John Rafferty (foreground) and assistant Ian Hom (background) act as spotters.

enough force to do damage, but didn't know what effect the hammer would have."

**Beefed up**

To prevent the trench box from collapsing against the force of the pull, Rafferty set railroad ties vertically across the enclosure's steel

As the plate dangled, Rafferty stacked horizontal railroad ties from the ground up to elevate the plate to the level of the culvert. "The bottom of the wheel is the center of the pipe, so it must line up with the center of the hole," he says. After the backhoe lowered the ram, Rafferty threaded the cable through the wheel.

is overkill, but we wanted the extra power to save us should the pipe fold up." The pull required 40 tons of force. A 20-gpm/4,000-psi pump powered the hydraulics.

The only pause in the pull was when Rafferty grabbed a retainer O-ring that flew off the ram and stretched it back over the grippers. "We stopped pulling for 30 seconds, and when we started again, I realized that the head had moved forward 12 inches," he says. "I never expected the hammer to take up any more tension than what was already on the cable. That was impressive,

**MORE INFO:**

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## EC-5 Camera Serves as Entry-Level Inspection System

By Ken Wysocky

**T**he EC-5 Economy Cam from Electric Eel Manufacturing is designed as an entry-level inspection system for budget-conscious contractors.

"The EC-5 is a variation on our other systems," says Mark Speranza, vice president of sales. "It's a basic, introductory-type unit. Or it can function as a less expensive backup camera. If you don't need a lot of bells and whistles, then the EC-5 is the way to go."

Designed to inspect 3- to 10-inch drain lines, the system offers a compact design. Available in color and black-and-white, the shock- and water-resistant 1.2-inch camera head is protected by a

stainless steel housing. It delivers 512-line resolution and has a scratch-resistant sapphire lens.

A high-intensity, adjustable LED light with a polycarbonate cover provides plentiful lighting, improving picture quality and helping users detect problems. "There's a transmitter built into the camera head that works with any 5-Hz locator," Speranza says.



The lightweight unit does not include a built-in video or DVD recording device. "But it does come with video input and output jacks, so you can attach your own recording device," Speranza says. Other features include a 5-inch color or black-and-white monitor and 100 feet of 0.33-inch push cable in a low-friction polypropylene jacket. A self-leveling camera head is optional. **For information: 800/833-1212; www.electriceel.com.**



## McLaughlin Launches Xtreme Line of Vacuum Loaders

The Xtreme line of combination air/water vacuum excavators from McLaughlin offers a 1,200-cfm positive displacement blower and 99-hp Kubota diesel engine that produces up to 15-inches Hg and 3,000 psi of water pressure. Units are available with 500-, 800- or 1,200-gallon spoil tanks and can be set up in either a trailer or skid-mounted configuration.

A three-stage filtration system provides for both wet and dry excavation. **800/435-9340; www.mightymole.com.**

## RIDGID Introduces Close Quarters Cutter

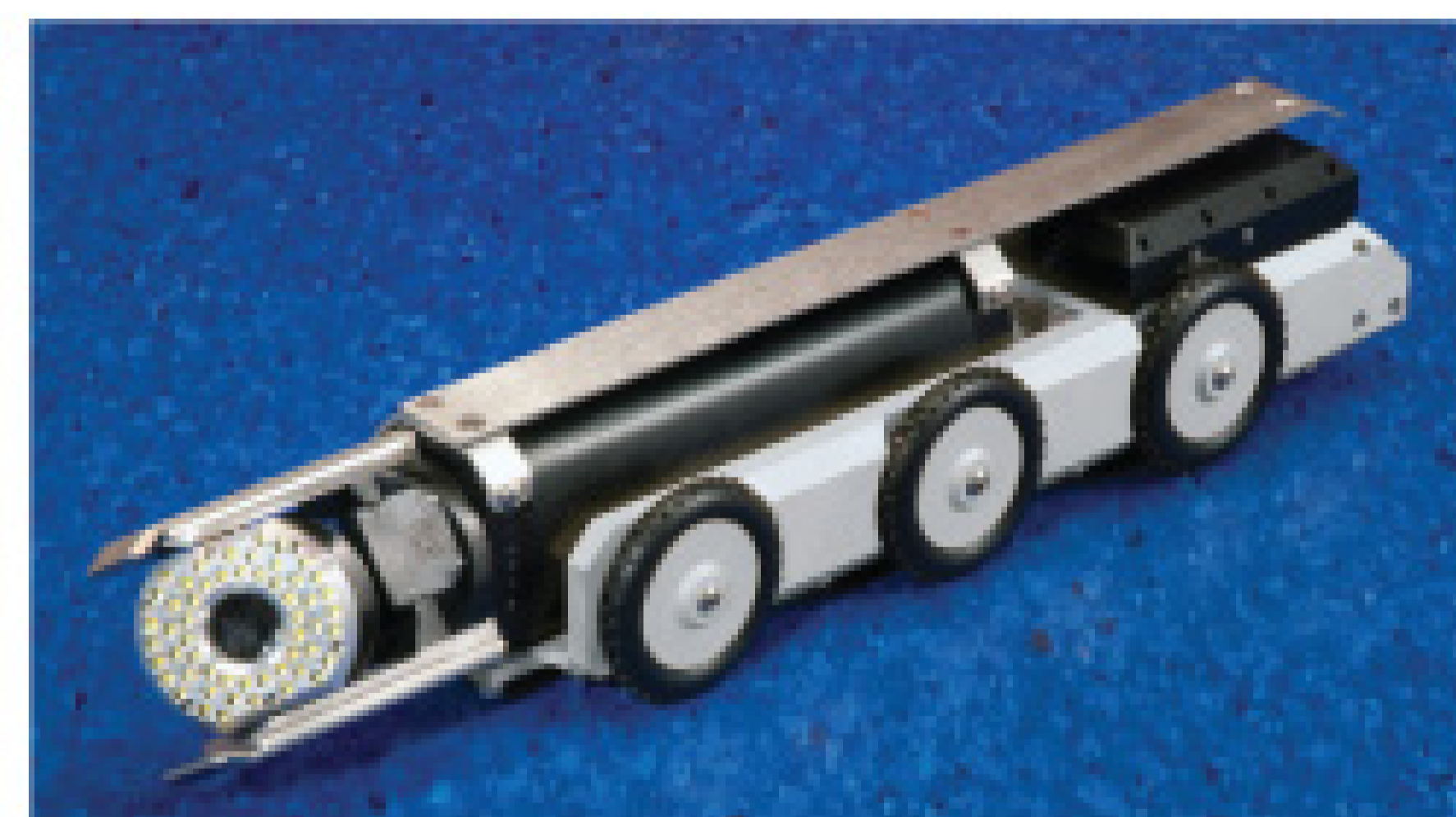
The Model 118 2-in-1 close quarters Autofeed cutter from RIDGID features a ratchet handle for easier cutting in restricted spaces. The cutter can be used with or without the handle, which can be operated in ratchet steps as small as 10 degrees. The cutter is adjustable from 1/4 inch to 1 1/8 inches O.D. and is designed for hard and soft copper, aluminum, brass and plastic tubing. **800/769-7743; www.ridgid.com.**



## PSI Introduces Boa-Tape Infiltration Sealing System

Boa-Tape infiltration heat-shrink sealing system from Pipeline Seal & Insulator Inc. requires no torch or primer. The pressure-sensitive woven polypropylene tape

seals concrete, steel and polyethylene structures. Designed to seal joints against groundwater infiltration, the tape is made for new construction as well as for rehab where grout has failed. **800/423-2410; www.boatape.com.**



## RS Technical Offers TranSTAR Steerable Tractor

The TranSTAR steerable tractor for video pipeline inspection from RS Technical Services Inc. is designed to work with Omni III, NovaSTAR and

TrakSTAR cameras. Equipped with two 90-watt rare earth permanent motors, the tractor can inspect sanitary or storm lines from 6 to 30 inches in diameter and up to 3,000 feet long. It can turn on its own axis and travel up to 60 feet per minute with three forward speeds, reverse and freewheel. Options include rearview camera, manual elevator system and multiple tire options. **800/767-1974; www.rstechserv.com.**



**CORRECTION**  
**SPIR STAR adds to**  
**Maximus Hose Line**

An incorrect item for SPIR STAR appeared in the waterblasting products listing in the November issue of Cleaner. Here is the correct item:



SPIR STAR has introduced the first 1/2-inch ID ultra-high-pressure hose rated for 40,000 psi. It is designed with a polyoxymethylene inner core and a polyamide outer cover and reinforced with eight layers of high-tensile steel wire.

The 13-mm UHP hose, the latest addition to the Maximus line of ultra-high-pressure hoses, handles flow rates up to 40 gpm with minimal pressure loss while increasing cleaning efficiency and production. For information: 800/890-7827; www.spirstar.com. ■

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**Mr. Manhole Chosen to Replace 1,033 Chimneys**

The City of Ironton, Ohio, has chosen the Mr. Manhole Standardized Chimney Replacement System for a one-year, \$12-million project to replace 1,033 manhole chimneys. ■

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**1998 Freightliner FL-80 VACTOR**: 2110-06 S/N:  
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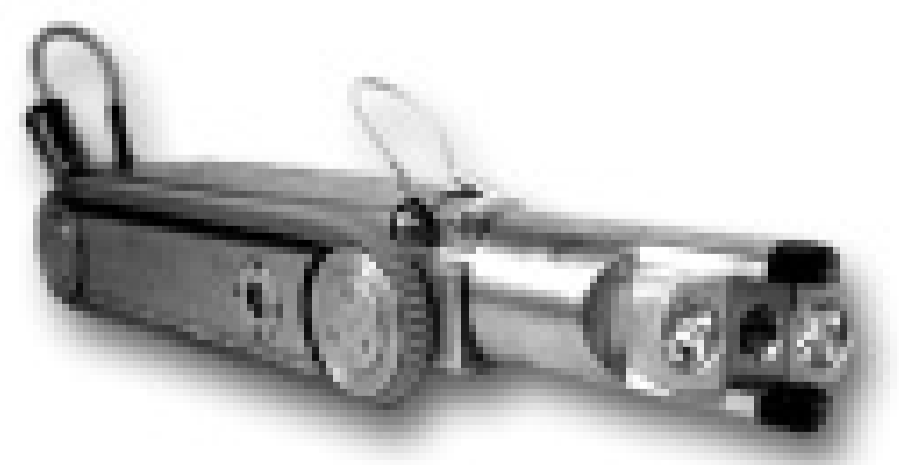
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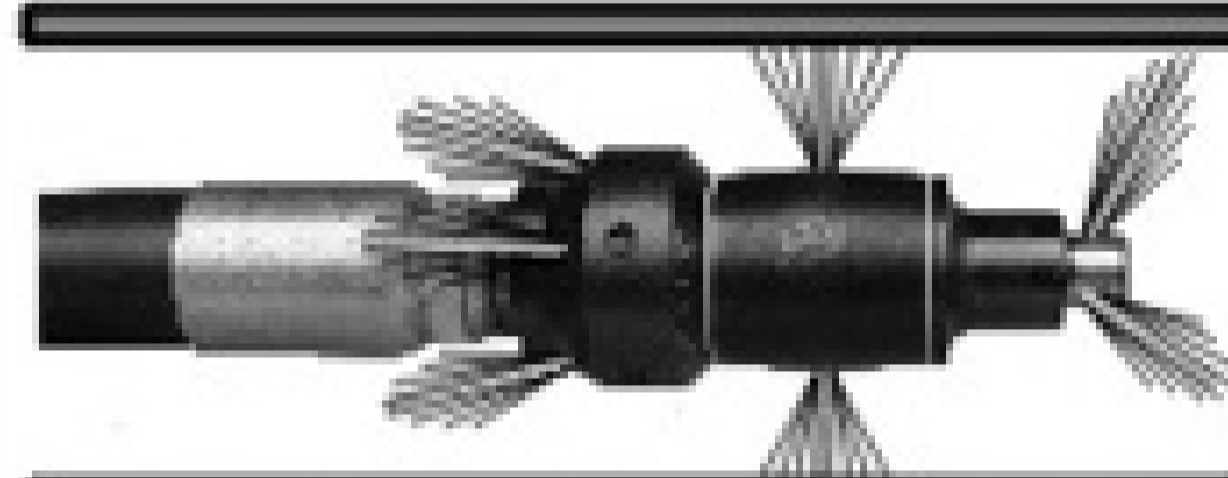
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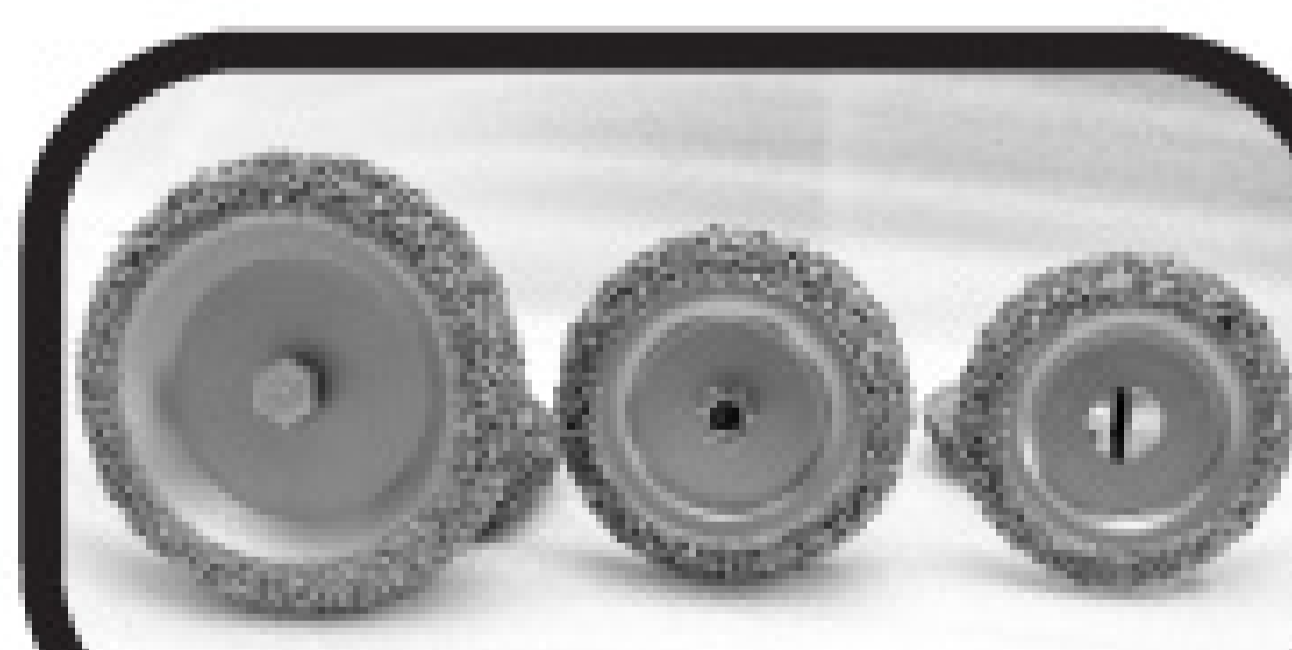
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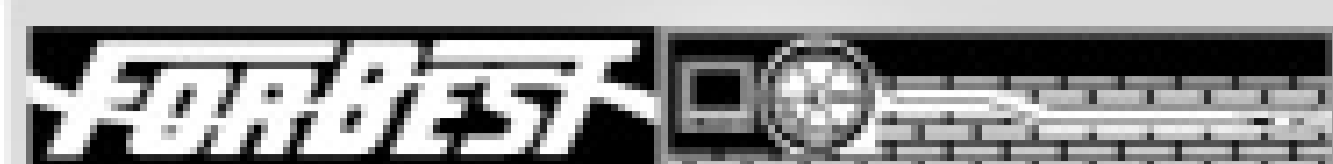
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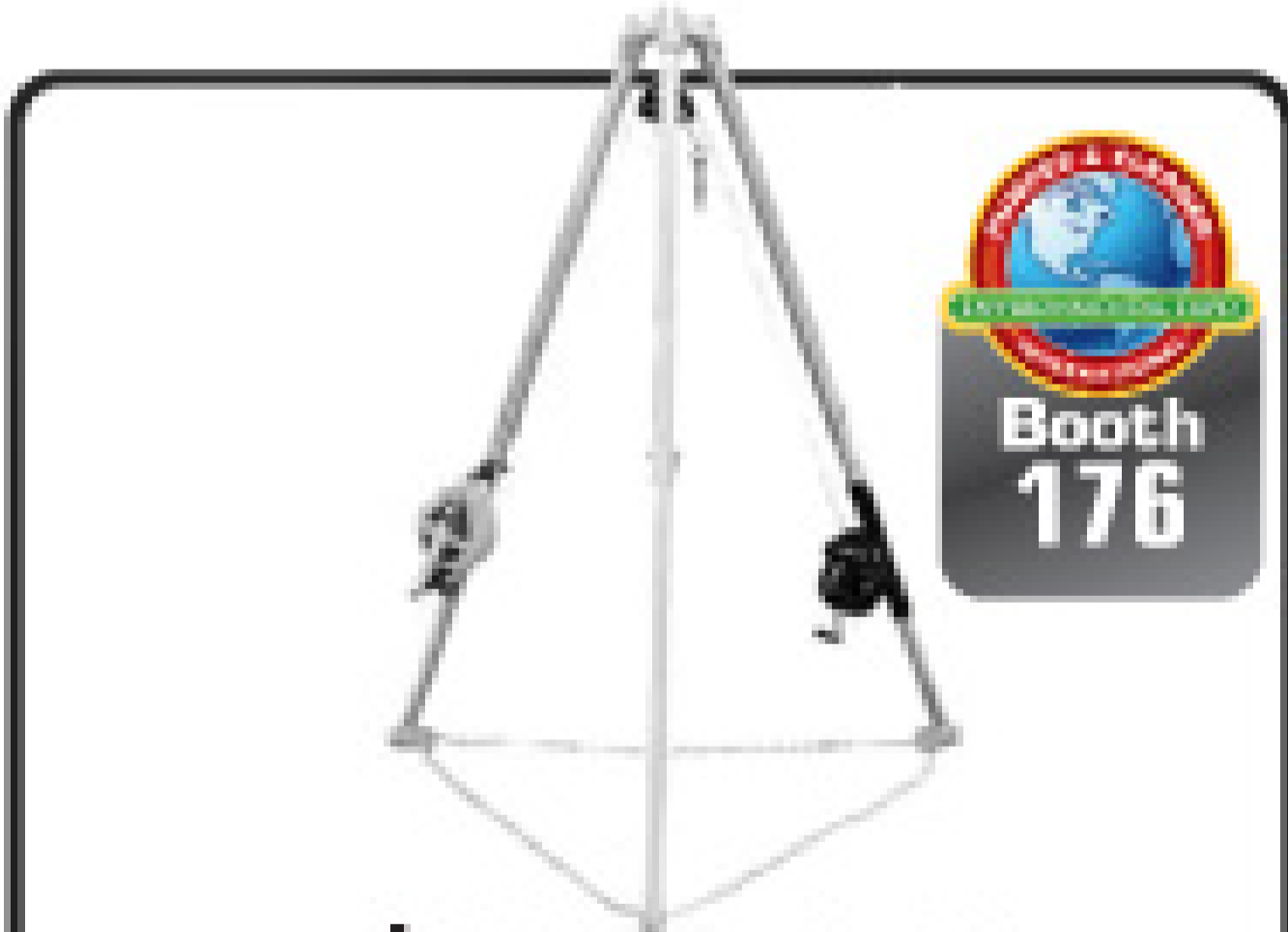
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ENVIROSIGHT COMPLETE SYSTEM: automatic cable reel, 3 different steerable crawlers (900, 600, 125). Outpost watertight box, two pan and tilt lenses (one with optical zoom valued at \$25K), dual joystick, original owner downsizing, VCR/DVD recording unit. 18 months of use. Valued at over \$125K. Turn-key ready. Offered at \$69,000. 877-809-3308. (CM12)

**New Cyclops Standard Sewer Inspection System** mounted in good running 2001 1/2 ton E-150 Ford van. P&T color camera, HD transporter, 600' TV cable, LCD monitors front and rear, powered rewind cable reel, all-in-one controller, 1000 watt inverter, on-screen footage w/keyboard data entry, DVD rec/player, with one year full factory warranty. Only \$51,200. Call Bill @ 830-249-9756. (C12)

BUY IT - SELL IT - PLACE IT - [www.cleaner.com](http://www.cleaner.com) - AVAILABLE ANYTIME, ANYWHERE, ANY DAY

## TV INSPECTION

1995 Chevy Van with **8100 original miles**, RST video system, Omni Eye II color camera, transporter, RST data display plus system with VCR and 19" monitor. Was municipal owned and in like new condition. 714-639-8352. www.empireequip.com. (CPBM)

**New Cyclops Valu-Pac III** with on-screen footage and data, 13" monitor w/VCR, DVD recorder/player, heavy duty transporter, 617' of TV cable, all-in-one controller, straight-view color camera, only \$20,500. One year full factory warranty and loaner program for the life of the system. Same system with endless rotation P&T color camera priced at just \$30,500. Call Bill @ 830-249-9756. (C12)

**Pads and Chain Assemblies:** Silicon carbide filled for maximum traction and long life. Single and double hole pads for all makes of tractors. Money back guarantee. Contact **Pipe Tool Specialties** (503) 1-888-390-6794 or fax 1-888-390-6670. Samples sent upon request. Same day shipping. We are a 6/12 company. (CMBM)

**BEST BUY:** Must see this 1997 RST video system that includes a P & T, tractor, and an additional main-line camera. Converted ambulance with odometer of 48,000, perfect studio, storage space and safety lights. The software includes printed reports, hard disc, and Sony Photomate. Photos of interior and exterior are available via e-mail. Special Price \$10,000. Call Don at 503-969-9557. (C12)

**NEED A SEWER CAMERA?** But don't think you can afford one? Call Cyclops Electronics. We have some trade-ins, prototypes, new old stock and one of a kind units that may be just what you're looking for at an affordable price. New systems have a one year factory warranty; refurbished systems are warranted for 90 days. Contact us to discuss your specific needs. Call Bill at 830-249-9756 and talk to one of the guys that build 'em. (C12)

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## TV INSPECTION

**Seacon** connectors and pigtails, increased inventory; **Falmat** 12 conductor flexible cable and push cables 504-343-7833 or 504-738-7833, **oceanquipllc.com**. (CBM)

## VACUUM LOADERS

1999 International with a Guzzler Ace 16" HG wet/dry industrial vacuum tank loader. **In stock. Available for purchase or rental.** (Stock #7390) **www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648).** (C12)

2009 Sterling LT9500 triaxle with a new Presvac, Powervac 3800, 3,250 gallon (US), DOT, wet/dry industrial, vacuum tank loader. **In stock!!!** (Stock #13336) **www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648).** (C12)

## VACUUM LOADERS

2005 Sterling 9513, Cat C13, 380 hp, 36,000 miles, model 6227 Supersucker industrial vacuum loader, 5500 CFM & 28" HG. 785-826-8265. (CP12)

1986 IME trailer-mounted sewer vac, 20 hp Onan engine model NHC-M# 3888D, only 500 hrs. Very good condition. 515-864-1036. (C11)

## WANTED

**Wanted:** Used tractors, crawlers, straight-pan/tilt cameras, lighthoods, power controls, cables, reels, monitors, software, etc. Working or not. 902-435-8200, fax 902-435-8222. (CBM)

Wanted to Buy: Vactor 2100's and late model Guzzlers. Cash. 800-336-4369. (CPBM)

## WATERBLASTING

FOR SALE: 2007 NLB 225 series waterblaster. 10-24k, 119 hrs., 24k never installed, extra hose, 24k wand, foot pedals, model 10275, diesel, on trailer, many accessories, can email pictures. Call for more info. 231-362-3737. (P12C01)

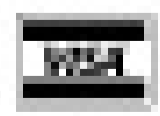



Jetstreams, 2 each, 10K psi @ 28 gpm, 175 hp Cummins. Tritan, 10K @ 10 gpm 90 hp Detroit, Partek 10K @ 4.8 gpm 35 hp Duetz. All fully refurbished, all low hours. Large variety of 10-40K psi accessories available. Se habla Espanol. World wide shipping. 562-436-5000. tom@gearshopsupply.com; www.gearshopsupply.com. (C01)

Water jetting equipment. We rent, sell and repair water blasters. Visit us at: www.waterjettingequipment.com or phone 714-259-7700. (CPBM)

## WATERBLASTING

**Wheatley** 125 Detroit 10K @ 20GPM. **Wheatley** 165 10K @ 30GPM. **Gardner Denver** 450 Cummins 10K @ 42 GPM. **NLB** 10-600 Cummins 10K @ 104GPM. Hydroblast water recycle system. Reliable **John Deere** 10K @ 10GPM. T300 with Jetstream fluid end 10K @ 14 GPM. T450 with 8.2L GM 20K @ 14GPM. **Frontier** Pump 10K PSI @ 10GPM Detroit 3-53. **Bareshaft** pumps available. **Boatman Ind. 713-641-6006.** View @ www.boatmanind.com. (CPBM)

Sapphire nozzles for all major 40,000 psi waterblasters at wholesale prices! Same-day shipping. UHP replacement parts, hoses. waterjet@bell south.net, 772-286-1218. (CBM)

MUNICIPAL SEWER WATER		Cleaner	Pumper	CLASSIFIED AD FORM		PRO	ON-SITE Installer
Please print ad legibly below with correct punctuation and phone number. Circle each word to be bolded, if any. (\$1.00 extra per word)							
<b>CHOOSE THE CATEGORY:</b>							
<input type="checkbox"/> Aerators	<input type="checkbox"/> Blowers	<input type="checkbox"/> Bucket Machines	<input type="checkbox"/> Businesses	<input type="checkbox"/> Business Opportunities	<input type="checkbox"/> Cable Machines	<input type="checkbox"/> Computer Software	<input type="checkbox"/> Dewatering
<input type="checkbox"/> Drainfield Restoration	<input type="checkbox"/> Drain/Sewer Cleaning Equip.	<input type="checkbox"/> Dredges	<input type="checkbox"/> Excavating Attachments	<input type="checkbox"/> Excavating Equipment	<input type="checkbox"/> Hand Tools	<input type="checkbox"/> Hazardous Waste Units	<input type="checkbox"/> Hydroexcavation
<input type="checkbox"/> Jetters-Trailer	<input type="checkbox"/> Jetters-Truck	<input type="checkbox"/> Jet Vats	<input type="checkbox"/> Lease Financing	<input type="checkbox"/> Levels & Transits	<input type="checkbox"/> Locators	<input type="checkbox"/> Miscellaneous	<input type="checkbox"/> Parts & Components
<input type="checkbox"/> Pipeline Rehabilitation	<input type="checkbox"/> Portable Toilets	<input type="checkbox"/> Portable Toilet Tanks	<input type="checkbox"/> Portable Toilet Trailers	<input type="checkbox"/> Portable Toilet Trucks	<input type="checkbox"/> Positions Available	<input type="checkbox"/> Positions Wanted	<input type="checkbox"/> Pressure Washers
<input type="checkbox"/> Pumps-Dredge	<input type="checkbox"/> Pumps-High Pressure	<input type="checkbox"/> Pumps-Submersible	<input type="checkbox"/> Pumps-Vacuum	<input type="checkbox"/> Pumps - Washdown	<input type="checkbox"/> Pumps-Water	<input type="checkbox"/> Rodding Machines	<input type="checkbox"/> Roll-Off Containers
<input type="checkbox"/> Root Control	<input type="checkbox"/> Safety Equipment	<input type="checkbox"/> Septic System Components	<input type="checkbox"/> Septic Tanks	<input type="checkbox"/> Septic Trucks	<input type="checkbox"/> Service/Repair	<input type="checkbox"/> Slide-In Units	<input type="checkbox"/> Sludge Applicators
<input type="checkbox"/> Tanks	<input type="checkbox"/> Tools	<input type="checkbox"/> Trailers-Vacuum/Tanker	<input type="checkbox"/> Trucks (dump/septic/misc.)	<input type="checkbox"/> TV Inspection	<input type="checkbox"/> Vacuum Loaders	<input type="checkbox"/> Vans	<input type="checkbox"/> Vehicle Tracking
<input type="checkbox"/> Wanted	<input type="checkbox"/> Wastewater Transfer	<input type="checkbox"/> Waterblasting					
<b>CHOOSE THE PUBLICATION(S):</b> (Deadlines are for the month preceding issue)				<b>CLASSIFIED AD RATE:</b>			
<input type="checkbox"/> <b>CLEANER</b> Deadline: 1st of the Month	<input type="checkbox"/> <b>PUMPER</b> Deadline: 10th of the Month	<input type="checkbox"/> <b>PRO</b> Deadline: 17th of the Month	<input type="checkbox"/> <b>MUNICIPAL SEWER &amp; WATER</b> Deadline: 1st of the Month	<input type="checkbox"/> <b>ONSITE INSTALLER</b> Deadline: 17th of the Month	\$1.00 per word, per month, with a 20-word minimum or \$20. [\$1.00 extra per bold word (key words only)]		
					<b>ADVANCE PAYMENT REQUIRED:</b> No billing for classified ads. Payment must be received in advance before publishing.		
<b>CALCULATE THE AMOUNT DUE:</b>							
words X \$1.00 =	X	Publications	X	Months	= \$	(Example: 25-wd. ad x \$1.00 per word = \$25.00; \$25.00 x 2 publications [Pumper & Pro] = \$50.00; \$50.00 x 2 months to run the ad = \$100.00 Total)	
((\$20 minimum)		# of publications checked above		# of months to run the ad	Total Amount Due		
<b>FILL IN COMPANY AND PAYMENT INFO:</b>							
COMPANY NAME: _____				MAIL this completed form with payment to: COLE Publishing Inc., PO Box 220, Three Lakes, WI 54562			
ADDRESS: _____				PHONE: _____			
CITY: _____				STATE: _____ ZIP: _____			
				FAX this completed form to: <b>715-546-3786</b>			
				ONLINE forms at: <a href="http://www.cleaner.com">www.cleaner.com</a> <a href="http://www.pumper.com">www.pumper.com</a> <a href="http://www.promonthly.com">www.promonthly.com</a> <a href="http://www.onsiteinstaller.com">www.onsiteinstaller.com</a> <a href="http://www.mswmag.com">www.mswmag.com</a>			
				QUESTIONS: CALL 1-800-257-7222			
PLEASE FILL OUT CREDIT CARD INFORMATION COMPLETELY INCLUDING V-CODE (3-DIGIT NUMBER FOUND BY YOUR SIGNATURE)							
CREDIT CARD NO.: _____		V-CODE: _____		EXP. DATE: _____		<b>WE ACCEPT:</b>	
CARDHOLDER NAME: _____		PHONE: _____				   	

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# Cleaner TRUCK STOP

see photos in COLOR at [www.cleaner.com](http://www.cleaner.com)



December 



**1999 Vactor 2115 on a 1999 Sterling:** Excellent, well-maintained municipal truck. Low miles and hours.

**Auto Wholesalers, Hollidaysburg, PA**  
814-696-4343

C12



**1997 GMC Vac-N-Dig Model S3:** Turbo 4 cyl. JD 4045T rear motor, Roots blower, water or air to cut with, vacuum: 15" HG @ 100 CFM, Lance: 180 PSI @ 165 CFM, 25,990 lbs. GVW (no CDL required).

.....\$39,500  
**503-969-9545 or 503-682-2723**

CP12



**2001 Acterra:** 12/23 axles, Cat 250 hp, automatic, air brakes, 300 gal. fresh, 1500 gal. waste, code tank, Masport 400XL vac pump.

.....Asking \$49,500  
**Call Bruce @ 506-672-9143**

C12



**1993 Vactor 2100C:** 10-yd. body, 80 gpm @ 2500 psi, accumulator, 2-stage vacuum, 8' hyd/teleboom, tele/rotating hose reel, recirculator, body wash-out, hyd. rear door locks, diesel engine, manual trans. (Stk. 1605)

**Call Joe 312-208-6373**

C12



**US Jetting Trailer Jet Model 4018300TRL:** Hatz diesel engine, US Jetting rodder pump, 500 gal. water, telescopic hose reel, 300' new sewer hose, 18 gpm @ 4000 psi, (2) tool boxes, only 342 hours on unit. (Stk. 1617)

**Call Joe 312-208-6373**

C12



**Pipe Bursting - Rod Pusher:** 20-ton rod pusher, power pack, 100' of rod, trailer, tool box for rods & bursting heads. Great shape.

.....\$9,500  
**609-332-4149**

C12



**Vactor Line Cleaner:** 1986 Ford 8000, Cat diesel, Allison auto trans., fan drive with Ford gas pony motor. Runs and operates well. Located on West Coast. Can deliver.

**209-339-1601;**  
**209-810-8049 Mike**

C12



**2003 Vac-Con V390SHA on Sterling:** 9-yd. body, 3-stage vac compressor w/hydrostatic drive, hydrostatic blower, articulating hose reel, Tri-plex 50 gpm @ 3000 psi, hydro-excavation pkg., rear arrowboard, 10,950 mi., 828 hrs. (Stk. 1596)

**Call Joe 312-208-6373**

C12



**1993 International Camel:** Diesel, push plate, large blower, 1000 gallon water tank, low miles, excellent condition, ex-municipality.

.....\$39,500  
**503-969-9557 or 503-682-2723**

C12



**1997 FL70:** Cat 3126, 250 hp, 6-spd. jetter 12 gpm @ 3000 psi, 400' jetter line, 1000 gal. code vac tank, Moro AC4 vac pump.

.....Asking \$35,000  
**Call Bruce @ 506-672-9143**

C12



**1996 Safe Jet Vac Combo Unit:** 5-yd. body, Tri-plex 60 gpm, 500 gal. water, 4' teleboom, 600' rotating hose reel, hydraulic locking rear door, auto. trans., diesel, low miles/hours. (Stk. 1599)

**Call Joe 312-208-6373**

C12



**1995 Vac-Con Model MV-311 THA:** Municipally owned & maint., Ford auto trans. chassis, tires 95%, new hyd. driven 3-stage blower, recent rebuild on water pump, spring loaded washdown gun & hose reel, arrow brd., strobes, behind cab toolbox, 94,407 miles, 4,541 hrs. ....Best Offer

**Pat's Pump & Blower - 800-359-7867**

CP12



**2005 KW 900L w/GapVax VTX820:** 27' Hibon blower, new 2009 Presvac vacuum tanker trailer, hyd lift/dump, full open tailgate, wireless remote extendable boom, pressure offload, vibrator. Extremely mint. Only 29,000 miles. ....\$240,000 OBO

**612-328-2158**

CP12



**Shower and Restroom Trailers:** Platinum and Gold Series, new and used available. Each with separate men and women sides.

**CCI/Brian Touey 805-896-3777**

CBM



**1995 Kenworth T800B:** Stainless steel 3000 gal. Thompson 6 cyl. vac tank, N14-ESP3 engine, Eaton Fuller 8LL, rear door opens and dumps, 704,174 miles, 923 hrs. ....\$145,000

**503-969-9557 or 503-682-2723**

C12



**2001 Vac-Con:** 80 gpm/ 2000 psi water pump, 3-stage fan, hydrostatic blower drive, 11 yard debris body. Unit mtd. on IH 2554 chassis, MD3060, auto. trans., 27K miles. Ex-city unit. Well maintained.

**Mike 800-294-0149**

C12



# Cleaner. TRUCK STOP

see photos in COLOR at [www.cleaner.com](http://www.cleaner.com)



**2007 Vac-Con:** IH 7400, AC, Allison 3000 RDS, Vac-Con PD suction, 80 gpm/ 3000 psi, Giant, 1" x 500' Piranha hose, 12-yd. Hi dump tank, 1500 gal. water, 23.5K mi, 691 hr. Duetz aux eng., 25' suction tube, remote control, loaded, excellent condition. 16 other vehicles available. \$205,000  
**631-242-4999** C12

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**\$125 PER PUBLICATION!**



**2006 Safevacs - Five (5) To Choose From:** Sterling LT9511 chassis, MBE 460 engines, 27" Wispair blowers, OMSI transfer cases. ....Special Price \$149,950 Each  
**Call 1-888-739-0838** C12

JUST FILL OUT THE FORM BELOW OR **GO TO** [WWW.CLEANER.COM](http://WWW.CLEANER.COM),

[WWW.MSWMAG.COM](http://WWW.MSWMAG.COM) **or** [WWW.PUMPER.COM](http://WWW.PUMPER.COM)

**AND FILL IN THE ONLINE TRUCK STOP FORM!**

**BE ONLINE & IN PUMPER, CLEANER OR MSW FOR ONLY \$125!** Please print ad legibly with correct punctuation and PHONE NUMBER. Don't forget to send photo!

**RATE** \$125 PER AD, PER MONTH, PER PUBLICATION WITH A 30-WORD MAXIMUM – **PLEASE NOTE:** You can only advertise **ONE TRUCK** for sale per ad.

**DEADLINES** **PUMPER: 10TH OF THE MONTH • CLEANER & MSW: 1ST OF THE MONTH** – For example: Jan. 1st would be the deadline for Feb. Cleaner.

**ADVANCE PAYMENT** **NO BILLING FOR TRUCK STOP ADS.** Payment must be received in **ADVANCE** before publishing.

Enclosed is \$ \_\_\_\_\_ for \_\_\_\_\_ ad(s) to run \_\_\_\_\_ month(s) in  
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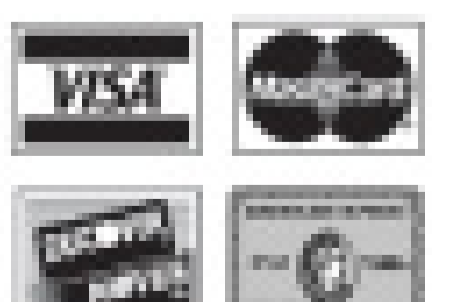
• **ONLINE** ad form at: [www.pumper.com](http://www.pumper.com); [www.pumpertrader.com](http://www.pumpertrader.com),  
[www.cleaner.com](http://www.cleaner.com), [www.mswmag.com](http://www.mswmag.com)

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*GapVax® & PartsExpress want to wish you a Merry Christmas & a safe and Happy New Year!*

# NEW Model CT Drain Cleaner

# **MAXIMUM**

## Cable Control

**UNIQUE Variable Speed Motor Feature gives the operator maximum cable control and exceptional cleaning power from 75 to 350 RPM with constant torque.**

- The New Model CT Drain Cleaner is professionally engineered to clean 3/4" to 2-1/2" diameter drain lines up to 50 Ft.
- **Standard unit features a hand tighten Jacobs Chuck. The CT is also available with a 2-way auto cable feed that keeps hands off rotating cable as it advances and retrieves cable with the push of a lever, and helps keep work area clean.**
- Heavy-duty housing protects motor and internal wiring.
- Rugged stainless steel cable drum will not rust and resists denting.
- Well balanced, heavy-duty steel tubular frame allows for versatile two position operation.
- Built-in GFCI on 20 Ft. line cord protects operator from electrical shock.
- Air operated foot switch and cord assembly for ease of operation.
- Runs 1/4", 5/16" and 3/8" cable.



Patent Pending



Auto cable feed unit



Upright Position

**The Counter-Top Drain Cleaner You Can Count On For Top Performance!**

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**Roger Short, California**  
SPARTAN REP SINCE 1974

**“JIM HAD HIS 81 CABLE MACHINE AND A  
CLASSIC BACK-TO-BACK TOILET SITUATION.”**



**SPARTAN**  
FOR TOUGH CUSTOMERS.  
SINCE 1943

Well, I got a call from a job site the other day. Jim had his 81 cable machine and was facing a classic back-to-back toilet situation, where a neighboring apartment had a bathroom up against the one he was working on. He wanted to make sure that he didn't run his cable too far into the line and end up causing a whole other mess. I told him we make a drop head for that sorta thing, which I knew he had. So he was able to make money on the job, instead of flushing it down the tube.

**Tough Customer Preferred Product: Model 81 Cable Machine**

This compact, lightweight machine operates vertically or horizontally to clear bathtubs, showers, toilets and sinks.

- Pipe sizes: 1/4" – 3" diameter
- Weight: 35 lbs.
- Cable lengths: up to 50'

