

Cleaner

FOR DRAIN AND PIPE CLEANING, INSPECTION AND REHABILITATION PROFESSIONALS

www.ccleaner.com | OCTOBER 2017

MAKING A GOOD BUSINESS BETTER

SEWER SERVICES AND DEPENDABLE EMPLOYEES
PUSH A LOCAL PLUMBING SHOP TO A HIGHER
LEVEL OF SUCCESS **PAGE 18**

TECH PERSPECTIVE

Understanding the basics of cured-in-place pipe

BETTER BUSINESS

The right strategy for setting emergency fees

SAFETY FIRST

Bonding mats protect against high-voltage hazards



***Power-Vee* Tight Space Specialist**

The Power-Vee® with Power Cable Feed

When a drain cleaning job puts you in a tight spot, using the Power-Vee is like having an extra hand to make the job easier. Just squeeze the feed lever and the cable spins into the line. Retracting the cable is just as easy.

This compact tool feeds tough Flexicore® cables at up to 16 feet per minute. Convenient quick-change cartridges make cable switching quick, clean, and easy.

It's time to upgrade from manual feed machines. Have a Power-Vee ready for your next tight spot.

It puts power in the palm of your hand.

Call the Drain Brains® at 800-245-6200 or 412-771-6300, or visit www.drainbrain.com/powervee.



General
PIPE CLEANERS

The toughest tools down the line.™



MADE IN USA

© General Wire Spring 2017

Join the
empowered.



Let the confidence of a VAC-COM
Certification empower you.

Questions answered. That's original with the



Operation of this unit involves
high-pressure water and
that can present potential
precautions are not follow



Safety. Efficiency. Sustainability.

That's why we've created the industry's
most powerful on-line training system.

More power to you in the form of on-line training. Helpful videos, graphics and tests that get you and your team up to speed on maintaining and operating a Vac-Con truck more efficiently and safely.

www.vac-con.com

A subsidiary of Holden Industries, Inc., Vac-Con is a 100% employee-owned company.
©2014 Vac-Con, all rights reserved.



NEW



"I used the Switcher non-stop every day, 8 hours a day, and didn't have one problem. I've been waiting for something like this."

**JASON DEMARTINI
VALLEJO SANITATION**



WGR SWITCHER

For cleaning 8-36" (203-914mm) lines.

WHR SWITCHER

For cleaning 6-18" (103-457mm) lines.

SWITCH FROM CLEANING TO FLUSHING WITHOUT EVER LEAVING THE PIPE



Use full pulling thrust to climb inclines and go upstream to problem area.



Idle the pump down to "switch" jets to cleaning mode.



Bring the pump back to pressure to begin cleaning/cutting mode.



VIEW THE VIDEO HERE:
WWW.STONEAGETOOLS.COM/SWITCHER

WARTHOG
SEWER NOZZLES BY **STONEAGE**

1-866-795-1586 • WWW.SEWERNOZZLES.COM

Proudly Manufactured in the USA





1 System 3 Components Infinite Ability

The crawler system that changed sewer inspection now has even more versatility to grow with your needs. Inspect lines 4" to 108" with up to 1640' of cable, and easily add cutting-edge tech like lateral launch, laser profiling and side scanning. Enter observations, measure defects and create reports with a web-enabled touchscreen pendant. Inspect farther with the crawler platform that pioneered steerable six-wheel drive, low-resistance cable and automatic cable management.



There's plenty to consider when buying a sewer inspection crawler. Don't overlook anything; download our handy checklist at: envirosight.com/crawler-checklist

Envirosight

www.envirosight.com • (866) 643-3191



18



36



26

departments

- 12 **From the Editor: It's About More Than Money**
You are service providers, and the way you serve your customers will make a big impact on your business.
By Luke Laggis
- 14 **@cleaner.com**
Be sure to check out our exclusive online content.
- 26 **Money Machines: Hands-Free Hydroblasting**
Remote-controlled water blaster improves productivity and employee safety while reducing operator fatigue.
By Ken Wysocky
- 32 **Better Business: The Right Fee for Emergencies**
There's more than one pricing strategy for after-hours service calls.
By MaryBeth Matzek
- 46 **Tech Perspective: The ABCs of CIPP**
Understanding the basics of cured-in-place pipe rehabilitation will help you provide better solutions for your customers.
By Gil Longwell
- 52 **Money Manager: Branching Out**
Sometimes the best way to grow your business is by adding new services.
By Erik Gunn
- 62 **Safety First: Protection From High-Voltage Hazards**
Bonding mats can be used to help prevent electric shocks when working near charged utility lines.
By Sherree Geyer
- 72 **Product Focus: CIPP Lining Methods and Projects**
By Craig Mandli
- 84 **Case Studies: CIPP Lining Methods and Projects**
By Craig Mandli
- 88 **Product News**
Product Spotlight: Liner solves tricky bends and lateral diameter transitions.
By Craig Mandli
- 90 **Industry News**

features

- 18 **Profile: Making a Good Business Better**
Sewer services and dependable employees push a local plumbing shop to a higher level of success.
By Marian Bond
- 36 **Profile: Meeting the Market's Needs**
Investments in advanced utility locating and mapping technology steered excavation contractor in a new direction.
By Ken Wysocky
- 56 **Pipeline Repair & Rehabilitation Inspection Directory**
- 66 **ICUEE Product Review:**
Dig These New Products at ICUEE 2017

COMING IN NOVEMBER 2017

ISSUE FOCUS:
Hydroexcavation & Industrial Jet/Vac Services, Sewer Nozzles

TECH PERSPECTIVE: 7 Checks for Healthy Hydroexcavators

MONEY MACHINES: Customized Vac Truck Packs Cleaning Punch

TOUGH JOB: Jet Cutter Saves Development Project



ON THE COVER

John Ridings started Ridings Plumbing in 1996. In the early years, Ridings focused on basic plumbing repair and new construction, but moving into sewer and drain cleaning provided a big boost for the Springfield, Illinois-based company. (Photo by Brad Leeb)

**PERMA-LINER™
INDUSTRIES, LLC.**



**ZERO DIG
TRENCHLESS
TECHNOLOGY**

PERMA-LATERAL™ LINING

SOLUTION



PROBLEM



TRADITIONAL DIG & REPLACE

- ✓ Backhoe and Operator
- ✓ Blacktop and Concrete Disposal
- ✓ Road Detour
- ✓ New PVC Pipe Materials to Install
- ✓ Inconvenience
- ✓ Possible Utility Service Damage
- ✓ Street Reconstruction

DON'T JUST REHABILITATE, SEAL THE ENTIRE SYSTEM:

Perma-Patch: Lateral Spot Repair

Pull-In-Place: Lateral Lining System

InnerSeal™: Lateral to Main Connection System

Sectional Point Repair: Main Line Spot Repair

Perma-Main™: Continuous Lining, Manhole to Manhole

PERMA-LATERAL™ LINING

- ✓ Zero Dig Technology
- ✓ Multiple installs per day
- ✓ Work Year-Round, Increased Productivity
- ✓ Ease of Use
- ✓ #1 Selling Small Diameter Pipe Relining System
- ✓ Proudly Made in the USA



**TURN-KEY TRAILERS
& TURN-KEY BOX
TRUCKS**

LIVE DEMO! COME SEE IT ALL AT CLEARWATER, FL OPEN HOUSE **NOVEMBER 7TH-9TH**
FEATURING **MULTIPLE MANUFACTURERS** WITH **LIVE DEMONSTRATIONS** AND THE **LATEST CIPP TECHNOLOGY**, OR
CONTACT US TO SCHEDULE A **ONE-ON-ONE DEMONSTRATION!**



**ZERO DOWN, NO
PAYMENTS FOR
90-DAYS**

100% AMERICAN MADE

100% TRENCHLESS

100% SUPPORTED



To learn more call **1-866-336-2568** or visit **www.perma-liner.com**



“Is this the “perfect” lateral lining & spot repair system?”

Many installers tell us it is...here's why:

It's proven for lining laterals and spot repairs since 1994:

- It's practically indestructible, cures 5 times stronger than industry standards!
- There's no felt tubes, we use epoxy and woven fiberglass!
- There's no measuring for transitions!
- There's 100% no digging—we use existing cleanout. Always!

Because it's pulled or pushed into place, you can place the epoxy liner *exactly* where you want it. Perfect for sport repairs!

- **Lining T's, Y's and Offset Joints:** Tees, Ys and offset joints, are no problem and it doesn't matter whether you're doing a 4" to 6" transition or have an offset joint...
- **Exceptional Customer Support:** Includes fully training your people on the ground and support from 8:00am to 8:00pm by engineers...
- **Incredible Strength:** The woven fiberglass and steam-cured epoxy is very strong, predicted to last 50 years or more...
- **Quality Product:** The finished product is amazingly uniform!

See for yourself! Get your free info kit and see our videos:



Brought to you by
Formadrain, Inc.
**LATERAL LINING
PERFECTED™**

Download your **FREE Info Kit!**
at www.Laterals.work

email bruce@formadrain.com,
(888) 783-7415

Cleaner

FOR DRAIN AND PIPE CLEANING, INSPECTION AND REHABILITATION PROFESSIONALS

Published monthly by COLE Publishing, Inc.

1720 Maple Lake Dam Rd., PO Box 220, Three Lakes, WI 54562

Call toll-free 800-257-7222 | Outside of U.S. or Canada call 715-546-3346

Mon- Fri., 7:30 a.m.-5 p.m. CST

Website: www.cleaner.com | Email: info@cleaner.com | Fax: 715-546-3786

SUBSCRIPTION INFORMATION: A one year (12 issue) subscription to *Cleaner* in the United States or Canada is free to qualified subscribers. A qualified subscriber is any individual or company in the United States or Canada that is involved in the inspection, cleaning, repair and installation of residential and commercial sewer lines. Non-qualified subscriptions are available at a cost of \$60 per year in the United States and Canada/Mexico. Subscriptions to all other foreign countries cost \$80 per year. To qualify, visit www.cleaner.com/order/subscription or call 800-257-7222.

Our subscriber list is occasionally made available to carefully selected companies whose products or services may be of interest to you. Your privacy is important to us. If you prefer not to be a part of these lists, please contact Nicole at nicole@colepublishing.com.

CLASSIFIED ADVERTISING: Submit classified ads online at www.cleaner.com/classifieds/place_ad. RATE: No Photo Classified \$25 for 20 words, each additional word \$1. All classified advertising must be PAID IN ADVANCE. DEADLINE: Classifieds must be received by the first of the month for insertion in the next month's edition. PHONE-IN ADS ARE NOT ACCEPTED. Ads may be faxed only when charging to MasterCard, VISA, Amex or Discover. Please supply all credit card information with faxed ads. Be sure to include your phone number (with area code) in your ad. Make checks payable to COLE Publishing Inc. and mail with classified ad to the address above. CLASSIFIED ADVERTISING APPEARS NATIONWIDE AND ON THE INTERNET. Not responsible for errors beyond first insertion.

DISPLAY ADVERTISING: Contact one of our sales staff at 800-994-7990. Publisher reserves the right to reject advertising which in its opinion is misleading, unfair or incompatible with the character of the publication.

REPRINTS AND BACK ISSUES: Visit www.cleaner.com for options and pricing. To order reprints, call Jeff Lane at 800-257-7222 (715-546-3346) or email jeff@colepublishing.com. To order back issues, call Nicole at 800-257-7222 (715-546-3346) or email nicole@colepublishing.com.



Kayla Bisnette Jim Koshuta

CIRCULATION: Circulation averages 25,642 copies per month. This figure includes both U.S. and international distribution.

© 2017 COLE Publishing Inc.

No part may be reproduced without permission of the publisher.



www.facebook.com/CleanerMag



www.twitter.com/CleanerMagazine



www.youtube.com/CleanerMagazine



www.linkedin.com/company/cleaner-magazine



**WATER & WASTEWATER EQUIPMENT,
TREATMENT & TRANSPORT SHOW**

FEBRUARY 21-24, 2018

Indiana Convention Center, Indianapolis, Indiana

www.wwettshow.com



GET
**EMAIL NEWS
ALERTS** FOR
Cleaner

Go to cleaner.com/alerts and get started today!

HIGHER STANDARDS

DYNA FLEX SEWER CLEANING HOSE

FREE SHIPPING IN THE U.S.!!
Excludes Alaska & Hawaii

FREE WOOD REEL!!

FREE MALE PIPE SWAGE FITTING!!

FREE MENDER!!



	1" 2500 PSI ORANGE W/ MALE PIPE BOTH ENDS	1" 3000 PSI BLUE W/ MALE PIPE BOTH ENDS
500 FT	\$1095.00	\$1195.00
600 FT	\$1295.00	\$1395.00
800 FT	\$1695.00	\$1795.00

PROMO CODE: **CLEANER**
OFFER GOOD THRU DECEMBER 22, 2017

**EXCELLENT QUALITY 2-BRAID CONSTRUCTION
BONDED TUBE & COVER ABRASION & KINK RESISTANT WITH SLICK SURFACE**



DYNA FLEX
INCORPORATED

Phone: 800-525-8463

Website: www.DynaFlexInc.com


Made In The USA


A


ALLAN J. COLEMAN
SINCE 1906
Allan J. Coleman Co. 17, 81


C


Cable Center, The 34, 73

 Cam Spray 86


 Central Oklahoma Winnelson 89


 CIPP Robotics LLC 64

 Coast Manufacturing 86


 CUES 11


D


 Drainables Direct 23


 Duracable Manufacturing Co. 33, 63
Dyna Flex, Inc. 9

E


 Easy Kleen Pressure Systems Ltd. 60

 Electric Eel Mfg. 30

 EnviroSight, LLC 5

 Enz USA, Inc. 54


F


 F. S. Solutions 51


Forbest Products Co. 60


Formadrain, Inc. 8

G


 GapVax, Inc. 99


 GI Industries, Inc. 47

 Gorlitz Sewer & Drain, Inc. 45


 Guzzler Manufacturing 13


H

 HammerHead Trenchless 21


 Hannay Reels 53

I


 I.S.T. Services, Inc. 24

 Isuzu Commercial Truck of America 31


J

 Jetstream of Houston 35

K

 Ken-Way Corporation 86

L

 Lansas Products 40-41


LaPlace Equipment Co. 16


Liner Products 39


LMK Technologies 25


Logiball, Inc. 30

M


 MaxLiner USA 15


 Milwaukee Rubber Products, Inc. 69

 Mongoose Jetters by Sewer Equipment ... 43

 MyTana Mfg. Company, Inc. 91


N

 NLB Corp. 65


 NozzTeq, Inc. 24

Nu Flow Technologies 93


P

 Perma-Liner Industries, LLC 7

Petersen Products Co. 89

 Picote Solutions 34

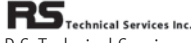
Pipeline Renewal Technologies 27


 PrimeLine Products 16


Q


Quik-Lining Systems, Inc. 83

R

 R.S. Technical Services, Inc. 85


 RapidView IBAK North America 77


 Ratech Electronics, Ltd. 70

 Reelcraft Industries 24


Reline America, Inc. 70

RELINER/Duran, Inc. 54

 Root Rat 83

 RootX 75


S


 Scooter Video 49

Sewer Equipment of Nevada 12


Shamrock Pipe Tools, Inc. 64


Soil Surgeon 86

 Southland Tool Mfg. Inc. 79


 Spartan Tool, LLC 100

Sprayroq, Inc. 42

 StoneAge, Inc. 4

 Superior Drain Cable Mfg. & Supplies 16

T

 T&T Tools, Inc. 44


Trio-Vision

Trio Vision LLC 55


Trojan Worldwide, Inc. 28


TST Sweden AB 59


U


 Ultra Shore 48

V


 Vac-Con, Inc. 3

 Vacall-Gradall Industries 71


 VARCo 59

 Vivax-Metrotech Corp. 50

W

 Water Cannon, Inc. - MWBE 98

Westmoor Ltd. 44

 WinCan, LLC 83

WJTA-IMCA 69

WWETT Show 29, 61, 87, 92


Z

Zip Drain 50

Marketplace 94-95

Classifieds 96-97

Have you seen the **Cleaner E-Zine?**



Go to **cleaner.com** to view the e-zine.

MUNICIPAL SEWER GROUT SCHOOL



Wed. November 8 – 8 AM – 5 PM
Thurs. November 9 – 8 AM – 4 PM



Town of Framingham, MA
Sewer Department
100 Western Ave.
Framingham, MA 01702



Who Should Attend:
- Public Works Professionals
- Municipal Contractors
- City/Consulting Engineers
- Inspectors
- Regulatory Agencies



(10) Professional Development Hours approved by the Center for Innovative Grouting Material and Technology (CIGMAT) at the University of Houston



For registration information contact:
Jessica Williams
Avanti International
281-956-3111
jessica.williams@avantigrout.com

Industry leaders have teamed-up for the Municipal Sewer Grout School in Framingham, MA, with instructors from Avanti, CUES, Inc., and Logiball, who have built this live learning event for one purpose--STOP INFILTRATION!

Stop infiltration with injection grout and you'll start treating 50% less groundwater, reduce SSOs, and extend the life of your existing infrastructure before you're forced into costly structural repair. This common sense approach is not always common practice...but should be.

Benefit from classroom presentations, demonstrations and hands-on workshops on the following:

- Solution Grouts for Municipal Applications
- NASSCO/ICGA Suggested Standards
- CUES Truck and Panel Tours
- Grouting Material Safety Certification
- Packer Operations
- Customizing Your Grout Mix
- Demos on Mainline, Lateral and Annulus Grouting via Packer
- Techniques for Sealing Manholes

Agenda Breakdown

Day 1 – 11/8

- Intro to Municipal Grouting
- Infiltration Control
- Grout Panel – Old School to Easy Grout
- Intro to ICGA/NASSCO Spec
- Breakout Sessions:
 - Grout Truck, Lateral Packer, Grout
 - Station – AV-100 and Urethanes, Easy
 - Grout Panel, EGP Technique, Check
 - Valve Rebuild
- Grout Truck System with Water
- Bucket Test, Packer ASTM Test, Packer
- Pump + Void Calculation, Gel Times +
- Flow Rates
- Annulus Demo in Lined Pipe
- Lateral Packer Operation in Plexiglas

Day – 11/9

- Grouting Material Safety Training + Test
- Grout Tank Mixing
- Packer Maintenance + Troubleshooting
- Hydrometer Test + Temperature Effects
- Manhole Rehab with Injection Grout
- Curtain Grouting Manhole – Acrylics vs Urethane
- Annulus Grouting of Lined Pipe
- Grout Box Injection with Packer + Reveal
- Lateral Connection Sealing Demo
- Open Discussion

For registration information, visit www.avantigrout.com/onsite-training





Luke Laggis
editor@cleaner.com

It's About More Than Money

You are service providers, and the way you serve your customers will make a big impact on your business

By Luke Laggis

It's all about relationships. Whatever the customer wants. The customer is always right.

These are among the tenets of a good service business. They're also clichés, repeated so often they don't always hold a lot of meaning. For many of you, these are guiding principles that underline a desire to do whatever is necessary to satisfy your customers. For the less customer-service oriented, they are empty mantras that sound good but are easily belied by any instance where a lack of patience or concern, careless work, or unreasonably high prices make the situation even more stressful for the customer.

Regardless of how routine a clogged lateral line may be for you, it can be a major disruption and significant source of stress for the average homeowner.

How you approach that situation and comfort the customer — through concern, patience, quality work and reasonable pricing — can go a long way in establishing a legitimate relationship that leads to more business and a stronger reputation for years to come.

This month's Better Business column discusses emergency service fee structures. A slow-draining tub or toilet is one thing, but a lateral line backing up into a customer's basement ups the stakes significantly. Emergencies cause panic, stress and anxiety. When that happens, you have a greater responsibility as well as a bigger opportunity.

The Better Business column deals mostly with the price of emergency services, but there are other — and often bigger — forces at play. There's no question potential customers prefer to avoid premium charges for after-hours emergency work. They're already in a tough spot, so paying extra for the work they need just adds to the difficulty of the situation. Regardless of the cost, customers in this situation have already resigned themselves to paying whatever it costs to get the work done. Once they've made the call to you, it's your opportunity to make it about more than fees.

You're not just a plumber or drain cleaner — you're a first responder. And just like a firefighter or police officer, your job is to restore order. How you handle those situations will go a long way in building — or blocking — long-term relationships. If you respond immediately, provide assurance, maybe offer referrals to cleaning or restoration services, and (of course) solve the immediate problem with a quality fix, customers will be a lot more comfortable with whatever fee you charge because you're offering a lot more than drain service.

If, however, you're slow to respond, are less than comforting, offer no additional help, and charge an exorbitant rate, you're likely making the situation even worse. And while you may have that high-priced job on the books, it could end up costing you for years.

It really is all about relationships and doing whatever the customer needs. Sometimes you need to be aware that what the customer needs today isn't the most profitable option for you, but it could well be the best thing for your business.

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



**GAS ENGINE PORTABLE
JETTERS PRICES
STARTING AT \$2,599**

made in the • **AMERICAN MADE**
 • **Fast Shipping**
 • **Call Us For A Quote**
(702) 527-5100
 LIVE TECH SUPPORT • PARTS & ACCESSORIES
 AVAILABLE FOR ALL EQUIPMENT
WWW.SEWEREQUIPMENTCOMPANYOFNEVADA.NET



**ELECTRIC MINI
JETTERS PRICES
STARTING AT \$1,199**

**WE DIAGNOSE &
SERVICE ALL BRANDS**

Sewer Equipment Company of Nevada



CAMERA & LOCATOR COMBO
 STARTING AT **\$1,899**
3 YEAR WARRANTY



**SEWER CAMERA & LOCATOR
PACKAGES AVAILABLE
3 YEAR WARRANTY**

WWW.SEWEREQUIPMENTCOMPANYOFNEVADA.NET



Join over 9,000 of your colleagues who already get great content delivered right to their inbox with the Cleaner e-newsletter.

www.cleaner.com/newsletter



Industrial Strength

When you clean industrial plants for a living, you need a vacuum truck that's as tough as you are. That keeps going, day after decade. That's backed by people who get that your livelihood depends on your truck staying productive. With Guzzler®, you get more than the toughest industrial vac truck in the business. You also get the strength of a team ready to deliver support, parts, service, training, consulting and industry expertise. A team dedicated to helping you expand your business by exploring new markets and applications for your Guzzler truck. That's industrial strength.

For a demo, or to meet your Guzzler team, call 800-627-3171 or visit www.guzzler.com.



@Cleaner.com

Visit the site daily for new, exclusive content. Read our blogs, find resources and get the most out of *Cleaner* magazine.



DIVERSIFICATION

Hydrovac Truck Expands Company's Service Offerings

Therma Corp. is constantly looking for ways to improve the capabilities of its plumbing and drain cleaning department, and in the summer of 2016 that search led to the purchase of a Vac-Con unit complete with a hydroexcavation package. In the relatively short time the truck has been working for the company, it has delivered big gains in productivity, says Mike Fisher, chief operating officer for the San Jose, California-based company that was featured in the June issue. Read more in this online exclusive.

[» cleaner.com/featured](http://cleaner.com/featured)



TECH TIPS

Upgrading Technology Without Upsetting Your Business

Technology changes at an alarmingly rapid pace and it can be a challenge to keep current with the latest technology all the time. But when it does become absolutely necessary for your business to upgrade to new computers, tablets, smartphones, software or apps, the cash investment is only part of the expense. There's also the cost of the work time that's lost installing new systems and getting staff comfortable using them. Here are some tips on how to handle that tech upgrade as smoothly as possible.

[» cleaner.com/featured](http://cleaner.com/featured)

OVERHEARD ONLINE

“To see how a prospective candidate can think on their feet, I also like to throw out a few quirky questions. I don't believe that the answer is really that important. Asking this type of question is more about the opportunity to see how a candidate thinks, problem-solves, and sells you on a product or idea.”

— Smart Employers Ask These Interview Questions

[» cleaner.com/featured](http://cleaner.com/featured)



CLEANING TRICKS

Chain Knockers Help Prepare Pipe for CIPP Jobs

Lining or coating over heavy tuberculation in a cast iron pipe sets up a contractor for failure. But oftentimes jetting the line beforehand isn't enough. Regular contributor John Heisler provides some advice about how using chain knockers can get the pipe adequately prepped and ready for a successful lining job.

[» cleaner.com/featured](http://cleaner.com/featured)



Emails and Alerts

Visit Cleaner.com and sign up for newsletters and alerts. Get exclusive content delivered right to your inbox and you'll stay in the loop on topics important to you!

Join the Discussion



Facebook at facebook.com/CleanerMag



Twitter at twitter.com/CleanerMagazine



DON'T SETTLE FOR SECOND PLACE. FINISH STRONG.

No matter where you are in the CIPP installation process, it's never too late to join the race. MaxLiner's precision Cured-in-Place equipment, high performing resins and quality custom liners—designed to accommodate diameter changes, easily negotiate bends and resist unwanted longitudinal stretch—help you finish strong with the best training and customer support in the industry. MaxLinerUSA.com



MAXLINER®



T 877.426.5948





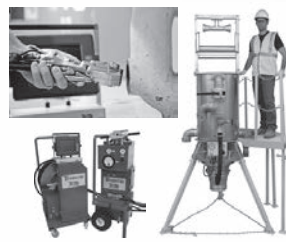
One Stop Shopping for Your Trenchless Needs!

24/7 Support / Free Training



Cured in Place Pipe

- Quik Shot 3"-8"
- Ambient, Hot Water or Lateral Lining
- Steam Cure Available
- Try Tek CWP 6"-18" Mainline Lining
- Epoxy, Silicate, or Polyester Resins



Try Tek Robotic Cutters

- Trydent 80 Cutter 3-6" Lines
- Legacy Cutter 6-15"



Picote Solutions



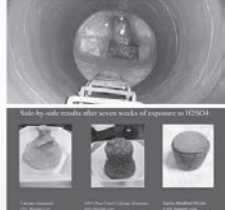
PrimeLiner Sectional Lining Equipment & Supplies

- Materials sold in Bulk
- Pipe Repair Kits available



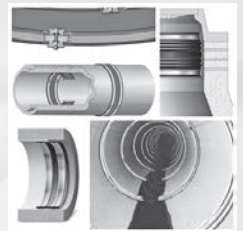
Cherne PipeLine Plugs & Testing Equipment

- Test Balls/Muni-Balls
- Air Testing
- Smoke Testing



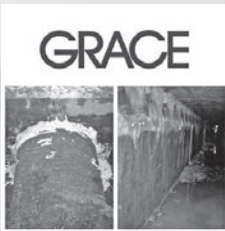
CLADLINER Manhole Rehabilitation

- CLADLINER
- CLADstop
- CLADseal
- CLADrestore



Trelleborg/NPC Pipe Seals

- Internal Joint Seals
- Liner End Seals
- External Joint Seals
- Chimney Seals



DeNeef Chemical Grouting

- Mainline Grouting
- Wellpoint Grouting
- Sealing underground Structures

www.PrimeLineProducts.com
877-409-7888 407-772-8131



SUPERIOR DRAIN CABLE

MFG. & SUPPLIES, INC.



MFG. & SUPPLIES INC.

66 Otis Street, Unit B
West Babylon, NY 11704

GO TO OUR WEBSITE AND GET
10 % off
USE A PROMO CODE SAVING

FREE
AIR FOOT PEDAL
OR
2" ALUMINUM BLADE HOLDER
WITH \$ 100 PURCHASE
1ST TIME BUYER

Toll Free: 855-643-0900
Tel: 631-643-6100

WWW.SUPERIORDRAINCABLE.COM

Electric Eel General RIDGID Spartan

CALL 985.652.5210
FOR YOUR WATERBLAST PROJECT SOLUTIONS
WWW.H2OBLAST.COM



LaPlace Equipment Company

RENTAL, SALES & SERVICE



UNITS FOR SALE:

JETSTREAM 3620

- CUMMINS "B" ENGINE
- THEROTICAL 20K @ 12.9GPM
- TRAILER MOUNTED WITH DAY TANK

JETSTREAM 4220

- 20K @ 20GPM

B/W T-300

- 10K @ 16GPM

ALLAN J. COLEMAN

SINCE 1905

Call us today!
773-728-2400

5725 North Ravenswood Avenue • Chicago, IL 60660 • info@allanjcoleman.com • www.allanjcoleman.com

OLDEST NAME IN THE BUSINESS — Over 100 YEARS OLD

MR-10 Magnetic Locator

- Quickly locate buried iron or steel objects
- Ergonomic rugged design includes carrying case and batteries
- Highly sensitive instrument with audio and visual feedback
- AutoNull feature blocks out nearby metallic interference such as an automobile or chain link fences



SeeSnake® Mini Camera Reel

- 1 1/2" to 6" Lines up to 200'
- New Self-Leveling Camera Head
- Built-In 512 Hz Sonde
- Metal Frame and Rugged Drum



SeeSnake® MAX rM200 Camera System

- Next Generation Push Cable and Improved Reel Mechanics
- Ultra Compact Camera Head
- Transport Enhancements
- Docking System • Self-Leveling Camera Head



CS65x)) Digital Reporting Monitor With Wi-Fi

- Wi-Fi and Bluetooth
- Storage Options: Internal Drive & USB Ports
- Internal GPS
- Water-resistant Keyboard
- Daylight Viewable Display



SR-24 Line Locator with Bluetooth® and GPS

- Omnidirectional antennas
- Large display • Built-In GPS
- Bluetooth® technology
- Smartphone/Tablet App
- Can trace any frequency from 10 Hz to 35,000 Hz



SeekTech® SR-20

SeekTech uses omni-directional antennas, guidance arrows and an easy to read mapping display.



NaviTrack® Scout®

Scout is designed to solve demanding remote transmitter (sonde) locates using multi-directional locating technology.

CS6x)) Digital Recording Monitor With Wi-Fi

- Wi-Fi and Bluetooth
- Direct-to-USB recording for fast, efficient documentation of inspection jobs
- Water-resistant keypad for direct control of essential camera and monitor functions
- Daylight viewable display for a crisp, clear in-pipe image
- SeeSnake HQ Software to edit, archive, and deliver reports via print, DVD, or online
- On-screen keyboard for basic titling and text entry
 - CS6 will dock in the RM-200 Max or operate as a stand alone monitor



RIDGID®

Authorized SeeSnake Repair Center

THE BEST SERVICE AND FAST TURN AROUND!

We Have RIDGID Parts!

If you buy the best, you are only sorry once!

COVER STORY

RIDINGS

PLUMBING



MAKING A GOOD BUSINESS BETTER

SEWER SERVICES AND DEPENDABLE EMPLOYEES PUSH A LOCAL PLUMBING SHOP TO A HIGHER LEVEL OF SUCCESS

BY MARIAN BOND PHOTOGRAPHY BY BRAD LEEB



John Ridings and the staff at Ridings Plumbing provide sewer and drain services across Central Illinois.

John Ridings was looking for the right opportunity to expand his business when a local sewer and drain cleaning company shut its doors. The situation was ideal, and Ridings immediately began preparing to step into the opening.

“It generated some quick revenue for us,” he says. “When you are focused on new construction and remodeling, your payment is typically every 30 days. With sewer cleaning, you get the check when you leave the job. This immediately helped us with cash flow. It also helped us become the No. 1 sewer cleaning company in the city.”

That was in 2001, five years after he started Ridings Plumbing in Springfield, Illinois. In the early years, the company focused on basic plumbing repair, and new residential and light commercial construction. Business was good, but adding sewer cleaning made it better.

“We started out with four sewer machines, and soon bought a small jetter,” Ridings says. “Then we purchased a bigger jetter, and word got around town that we did that work. It continued to grow, and now we have two trailer jettors from Spartan Tool.”

IN THE BEGINNING

Prior to starting his business, Ridings spent two decades working for other companies — eight of those years were in management, so he had accumulated a lot of knowledge to bring to his own enterprise.

Ridings aimed for a highly successful startup, purchasing a 5,000-square-foot building and renting out a portion in order to cover the payments. That allowed him to set his own funds

aside for a healthy investment in trucks, equipment and all the necessary tools. Ridings started with a single employee, but thanks to a surge of new construction at that time, he was up to six employees less than a year into the business.

Today, Ridings has 16 employees, and new construction now makes up only about one-third of the workload. Remodeling projects make up another third of the work and the remaining third comes from residential plumbing repairs and sewer cleaning.

The company’s equipment fleet includes 13 vans — mostly GMC and Chevrolet — three of which are set up for full-time service inspection capabilities with cameras from UEMSI - HTV. The company also has a John Deere backhoe, a JCB mini-excavator, trenchers from Ditch Witch, and two Spartan trailer jettors (4,000 psi/18 gpm and 3,000 psi/15 gpm).



Brody Shoemaker feeds a UEMSI camera into a lateral line to locate a blockage.

profile

RIDINGS PLUMBING

SPRINGFIELD, ILLINOIS

OWNER: John Ridings

SERVICES: Plumbing, sewer cleaning, jetting, CCTV inspection, new construction, remodeling

CUSTOMERS: Residential, contractors

EMPLOYEES: 16



<< Brian Holmes uses a Bosch Breaker Hammer to open up a basement slab and begin reconfiguring the home's drain system. The job is part of a city of Springfield program to minimize basement backups.

BELOW Shawn Berroyer positions an Ultra Shore trench box for a residential sewer repair.



"WHEN YOU ARE FOCUSED ON NEW CONSTRUCTION AND REMODELING, YOUR PAYMENT IS TYPICALLY EVERY 30 DAYS. WITH SEWER CLEANING, YOU GET THE CHECK WHEN YOU LEAVE THE JOB.

THIS IMMEDIATELY HELPED US WITH CASH FLOW."

John Ridings

COMPREHENSIVE APPROACH

Investing in jetting equipment has been a good approach for Ridings Plumbing. There are many older homes in Springfield with concrete tile and clay tile sewers, and root growth is a chronic problem.

"We charge \$400 to bring the jetter out and put it in the line, and then \$200 for the camera," Ridings says. "If the customer has us jet the line and use the camera, we will give a \$100 deduction. That way, we can guarantee the work for a year. We find our customers very receptive to this pricing. While we have competitors who will offer to snake a line for \$100 to \$150, people seem to realize that this will just poke a hole in the stoppage and not

actually clean the line. Once you jet the line and put in the camera, you can show the customer how cleaning the sewer benefits. They are very happy."

Ridings Plumbing also teams up with RootX to provide customers a comprehensive fix to root issues.

"Whenever we apply RootX to the customer's sewer, we register them with RootX. A year later, RootX will notify the customer it is time to have another treatment scheduled," Ridings says. "We have used RootX for about three years. We have a lot of our customers on the RootX program for tree roots."

A GOOD TEAM

Ridings' team of employees has been another key to the company's success. In fact, his staff is so dependable that Ridings and wife, Joyce, a retired school teacher, regularly take trips in their motor home, leaving the

THE RESPONSIBILITY OF OWNERSHIP

John Ridings has experienced the plumbing business both as an employee and an owner. There are some distinct differences between the two perspectives.

"I've been doing this for 41 years — 21 in my own business," he says. "Probably the most stressful thing when you are the owner is doing the work, and dealing with contracts and bills that are coming in that you want to pay on time while still ensuring you take care of your employees. My people have never missed a Friday paycheck."

One thing that has helped is having a good bank behind the business to keep the cash flow going, even during tough times. Ridings says, "In 2009, when the economy tanked, our business dropped 40 percent in one year. Because I had a good bank and lots of equity in the things I owned, I was able to get money out and keep the business going. The most important thing for a small business is to have a good credit line and a banker to work with — most definitely the most important thing."

day-to-day operations entirely on the employees for periods of time.

Ridings says what gives him the most satisfaction is hearing from customers who write a note praising his employees' performance, something that occurs often. "I get a note like this at least once a week," he says. "I've got great people."

That's because Ridings has been particular about his hiring practices. Potential candidates come to him through a process of referrals. He never places job advertisements.

"If I'm looking to hire, I will put out feelers to the wholesale people to be on the lookout for someone. Or I'll have someone mention a good candidate and go from there," Ridings says. "When I bring in a young person, I will say that if he just wants a job, I'm not hiring. If you want a career, I'll teach you a career. The thing I ask in return, after I get you through a four-year state apprenticeship and your state license, is that you stay with us for another four years to pay back the company for what we have trained you. It is a gentlemen's agreement. We could write a contract, but we don't do that. For the first two years with us we give direct supervision, and then for the last two years, we give partial supervision. So we do ask for that in return for what they have attained."

But Ridings also takes steps to ensure employees don't want to leave once they reach that four-year mark with the company.

"We are a support team here, and we take care of our people by offering medical and dental, paid vacation and paid holidays, plus a retirement program. Once we have people working for us, we don't see much turnover. When they come to Ridings, they come to stay."

"ONCE YOU JET THE LINE AND PUT IN THE CAMERA, YOU CAN SHOW THE CUSTOMER HOW CLEANING THE SEWER BENEFITS.

THEY ARE VERY HAPPY."

John Ridings

PIPE BURSTING PROS DEPEND ON HAMMERHEAD®

"We worked very closely with HammerHead Trenchless Equipment in the development of their new 100XT static pipe bursting system, and we couldn't be happier with the final result. It's fast, reliable, and backed by customer support that has always been quick to respond when we have a question. Municipalities are catching on to the advantages of pipe bursting, and our 100XT positions us to take advantage of pipe bursting's growing popularity."

MARK DIMICHELE,
Owner, D & D Water & Sewer, Canton MI

EQUIPMENT. EXPERTISE. SUPPORT.

HammerHead Equipment products and expertise take the guesswork out of pipe bursting. And legendary factory support puts even the toughest pipe bursting jobs within your reach.



Find your local dealer at
hammerheadtrenchless.com
or call 800-331-6653



MOLING | RAMMING | BURSTING | HDD ASSIST | WINCHES | CIPP

©2017 Earth Tool Company, LLC

A Charles Machine Works Company



<< Louis French traces the path of a sewer lateral with a UEMSI locator.

BELOW Jimmy Walters adjusts a Sioux Chief FinishLine and floor drain that is hooked to a Jackal sewage ejection pit.



“WE ARE A SUPPORT TEAM HERE, AND WE TAKE CARE OF OUR PEOPLE BY OFFERING MEDICAL AND DENTAL, PAID VACATION AND PAID HOLIDAYS, PLUS A RETIREMENT PROGRAM. ONCE WE HAVE PEOPLE WORKING FOR US, WE DON’T SEE MUCH TURNOVER. WHEN THEY COME TO RIDINGS, THEY COME TO STAY.”

John Ridings

He says he is a boss who sticks to the philosophy of treating others as you want to be treated.

“I don’t want to rant and scream at somebody,” he says. “If there is an issue with a couple guys, I’ll take them into a private meeting and give each five minutes to state their case. We will work things out. Sometimes there are personal crises. We want to be a support team here at Ridings.”

GOING FORWARD

Ridings says he wants to continue expanding his company as the right opportunities come along. One such chance presented itself about a year ago.

“A one-man, 60-year-old plumbing shop was going out of business, and the owner offered the firm to me,” Ridings says. “He had about 1,200 customers, and I bought some of his inventory — his truck and tools. We are averaging 20 to 25 calls a month from his customers. As they use us, we find they are telling friends and family, and that is a pretty good way to grow a little. That owner actually approached me and said that he had heard good things about our company and hoped we could help each other out. It worked. It was affordable.”

However, Ridings decided another recent opportunity wasn’t the right move. “There was another opportunity for an acquisition, a turnkey plumbing and HVAC operation, but it was about 100 miles away. That was farther than I wanted to go.”

Expansion opportunities aside, Ridings says that after 41 years working in the industry, he still enjoys going to work every day and is pleased to have such a great staff. His goal is to simply continue running his company, enjoy the fruits of his efforts, and be sure his key people will be able to carry on the Ridings tradition long into the future. **C**

featured equipment

Ditch Witch
800/654-6481
www.ditchwitch.com

RootX
800/844-4974
www.rootx.com
(See ad page 75)

Spartan Tool
800/435-3866
www.spartantool.com
(See ad page 100)

UEMSI - HTV, Inc.
877/389-9999
www.uemsihtv.com

Ultra Shore
800/746-7464
www.shoring.com
(See ad page 48)



WANTED

CABLES THAT DELIVER REAL REWARD

With Draincables Direct cables, don't worry about picking 'em out of a line [UP.] Get products that will stand the test of time, and provide your business with the most reward.



SEE THE FULL LINEUP AT DRAINCABLES.COM
OR CALL OUR SALES TEAM AT 800.421.4580

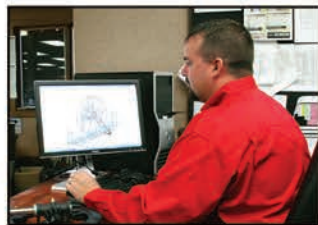
Rely on Reelcraft



Dual pedestal hose reels
Series 80000

**Did you know...
Reelcraft can build to your specs?**

Special paint colors and finishes ▶



Reelcraft's Capabilities

- ✓ Built to your exact needs
- ✓ Very few size and weight constraints
- ✓ Special finishes/paint options
- ✓ Various drive types
- ✓ Wide range of pressures
- ✓ No minimum quantities

To learn more visit us at
www.reelcraft.com/custom



◀ Turn-key systems



▶ Jetter reels



www.reelcraft.com

800-444-3134



Inspection Camera System



- Push cameras
- Water jetting cameras
- RiCubio
- Carriage systems
- Manhole cameras
- Documentation



Contact us for more information:

☐ (858) 997 0004
✉ info@istamerica.com



Lumberjack®

Rentals Available

Lumberjack® 300

3"-48" Sizes Available



Removes: Protruding Laterals, Tuberculation, Grease, Roots and much more!

Equipment Engineered for Long Lasting Performance™

CALL TODAY FOR AN ON-SITE DEMONSTRATION



www.nozzteq.com
Toll Free 1.866.620.5915





T-LINER®

Main-To-Lateral Lining



INSIGNIA™ END SEAL

Gasket Sealing



PERFORMANCE LINER®

Lateral Lining System



VAC-A-TEE™

Outside Cleanout



PERFORMANCE LINER®

Sectional Spot Repair



CURED-IN-PLACE MANHOLE LINER SYSTEMS

Full Depth



DO IT ONCE, DO IT RIGHT LINING SOLUTIONS SINCE 1993

Main-To-Lateral Lining

- ASTM F2561 Compliant
- T-Liner®, Shorty™, and Stubby™ One-Piece Connection Lining Systems
- Insignia™ Compression Gaskets

Gasket Sealing

- Insignia End Seals
- 6 in. - 54 in. Diameters Available

Lateral Lining

- 100% Trenchless
- Performance Liner® CIPP Lining
- Lining Through A Cleanout

Cleanout System

- ASTM F3097 Compliant
- VAC-A-TEE® Saddle Kits
- Minimally Invasive Installation
- Easy to Install

Mainline Repair

- ASTM F2599 Compliant
- Inverted In-Place Sectional CIPP Lining

Manhole Rehabilitation

- ASTM F3033 Compliant
- Cured-in-Place Manhole Full Depth Liner System
- Cured-in-Place Manhole Shorty Liner System
- One Size Fits Most

To learn more, call or visit us at:
LMKTECHNOLOGIES.COM | **815.640.9302**
info@lmktechnologies.com

Hands-Free Hydroblasting

Remote-controlled water blaster improves productivity and employee safety while reducing operator fatigue

By Ken Wysocky

Almost three years ago, Zac Cudney from Texas-based Evergreen Industrial Services started searching for hands-free hydroblasting technology that was compact, mobile, efficient and powerful enough to handle difficult cleaning challenges in oil refineries and petrochemical plants.

After working with engineers at NLB Corp. for eight months, a solution emerged: The Micro-ARM (which stands for automated remote manipulator), a robotic hydro blaster that has dramatically boosted employee safety and productivity at Evergreen. The company now owns three of the highly portable Micro-ARMS and plans to order more. The units are used to clean everything from machines to tube bundles in heat exchangers.

“I’d say that on average, the Micro-ARMS are about 30 percent more efficient compared to how we worked before,” says Cudney, the company’s general manager of hydroblasting and turnaround services. Part of the time savings stem from reduced setup time. For example, the unit’s remote-control capability allows operators to work up to 700 feet away from the items getting washed, which eliminates the need to don cumbersome protective gear.

money machines

OWNER: Evergreen Industrial Services, La Porte, Texas

MACHINE: Automated Micro-ARM mobile hydro blaster from NLB Corp.

FUNCTION: Industrial cleaning in oil refineries and petrochemical plants

FEATURES: Hands-free hydroblasting; onboard air compressor; wireless remote with joystick operation from up to 700 feet away; maximum arm reach of nearly 9 feet; boom swings 45 degrees each way; 29 inches wide; 1,000 pounds; rubber treads; available in configurations of 10,000 psi/14 gpm, 20,000 psi/10 gpm or 40,000 psi/7 gpm

WEBSITE: www.evergreenes.com

COST: About \$45,000

NLB WEBSITE: www.nlbcorp.com/shop/automated-systems/micro-arm



Evergreen Industrial Services owns three Micro-ARM robotic hydro blasters from NLB Corp. for safely and efficiently cleaning everything from industrial machines to tube bundles in heat exchangers.

The machine's maneuverability also increases efficiency. At only 29 inches wide and weighing just 1,000 pounds, it's surprisingly nimble for a hydro blaster. Equipped with rubber treads, it can even climb stairs and navigate narrow catwalks. "You could literally drive one right through the front door of your home," Cudney says. "They're compact enough to easily drive around a wash pad."

Before, crews at Evergreen often relied on other contractors to use a crane to move items on a wash pad into a position where a bulky hydro blaster could work. Now, they just steer the Micro-ARM into position. "As a result, we can get work done faster by not involving other trades," Cudney notes. "If they're contractors that work for the plant, we're not tying up this valuable resource that could be doing something else. Customers appreciate that."

Another bonus: The Micro-ARM includes an onboard air compressor, which eliminates the need to tie into a plant's air system. Without a hose tethered to the unit, operators are free to maneuver around much more freely. "Imagine cutting your lawn with a heavy garden hose attached to your mower. It's pretty inconvenient," he says. "Not having to use one shaves time off setup. And it's one less utility that we have to ask our customers to provide."



The robotic hydro blasters are easily positioned for cleaning jobs. Tracks with rubber treads allow the machine to climb stairs and navigate narrow catwalks.

The hands-free remote operation pays big dividends because it eliminates the risk of exposing operators to the many chemicals produced during various processes inside refineries and petrochemical plants. "It's always something nasty like benzene, naphthalene, butylene or crude oil. ... Everything in the plant can harm you," he notes. "So instead of putting



1,000,000
Installed!

Point Repair
That Solves
Infiltration

Pushed in by your crawler and expanded with air, a Quick-Lock sleeve delivers structural trenchless sewer repair with heavy-gauge stainless steel and stops infiltration with a one-piece rubber gasket. It installs in minutes with two people and minimal equipment.





digging
resin • pot life
wet-out • cure
bypass pumping
wash-outs

Quick-Lock is also offered as an end sleeve to protect installed CIPP liners.





for on-site demo, visit www.pipelinert.com/ql or call (866) 936-8476

infiltration • offsets • roots • abandoned laterals • holes • cracks



Hands-free remote operation of the Micro-ARM eliminates the risk of exposing operators to chemicals produced during various processes inside refineries and petrochemical plants.

“When these plants go into turnaround mode, you have to consider that they’re losing money twice,” Cudney explains. “First of all, they’re losing money because they aren’t making the product they usually make. And second, they’re losing money because they’re paying you to clean things. The faster you can help them get up and running, the more profitable they are. And the more profitable they are, the better the chances are that they’ll bring you back to do the work again.”

Last but not least, the Micro-ARM — powered by a 305 hp NLB 225 Series water pump (20,000 psi at up to 23 gpm) — provides a great return on investment, Cudney reports. “The payback period depends on your workload,” he notes. “For us, it’s just under 40 days. They’ve been a great investment for our company.”

a guy on shotgun cleaning (manually), we can send in the Micro-ARM. And it doesn’t get tired, either.”

Efficiency is critical during planned maintenance shutdowns, where many different contractors work in an intricate sort of dance. No one wants to be the guy that slows things down, and customers notice when contractors consistently finish their work on time and on budget. Moreover, getting more work done in less time allows Evergreen to price bids more competitively.

SHOW US THE MONEY (MACHINE)

Money Machines, a feature in *Cleaner*, reports on innovative work vehicles that help contractors operate more efficiently, satisfy customers and earn more profit. We’d like to know about your Money Machine — be it a service van, camera truck, jetting rig, vacuum unit or any vehicle that really helps drive your business. To nominate your vehicle for a feature in this column, send an email to editor@cleaner.com. Tell us briefly but specifically what features make it a great producer. And send a picture — because appearance counts. We look forward to seeing your Money Machine.

The Trojan
C100-512SL
has it all

Introductory Price
\$1995

- 7" LCD with DVR
- Protective Visor
- Operates Horizontally or Vertically on Collapsible Stand
- Includes 2 Skids
- Built-in 512 Hz Transmitter
- 1" Self-Leveling Waterproof Color Camera Head with Adjustable LED Lights
- Works in 1-1/2" - 4" Lines
- LED Light Adjustment knob
- SD Card Recording with USB Adapter
- Built-in Microphone for Voice Recording
- Built-in Battery (7 hour life)
- Includes A/C Adapter for Charging and Direct Power
- Built-in Foot Counter
- 115' of Durable Push Rod

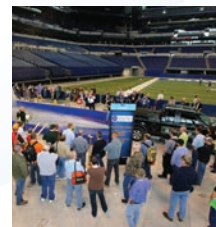
ORDER NOW
800-392-4902

3306-C Ella Blvd, Houston, TX 77018
www.trojanworldwide.com



LIVE DEMOS AT THE WWETT SHOW

Want to see how a piece of equipment works? The WWETT Show is the place to go for live demonstrations. Hammerhead, I.S.T. Services, Picote Solutions and others are having demos in the Marketplace Expo Hall, perfect for getting up-close and hands-on. Or join companies that include Gradall, Nozzteq, and Vector as they show off the heavy equipment at WWETT Live! at Lucas Oil Stadium.



EDUCATION: FEBRUARY 21-23
EXHIBITS: FEBRUARY 22-24
INDIANA CONVENTION CENTER

WHY SHOULD YOU ATTEND?

- ✓ **Explore the Marketplace** for tools and resources you need for your business
- ✓ **Education** taught by some of the best and brightest in the industry
- ✓ **Events** to network with your peers - or just kick back with friends.

REGISTER TODAY AT WWW.WWETTSHOW.COM





CAM ace 2™

- » One-touch USB recording
- » 5.4" LCD monitor
- » 200' of Kevlar braided ½" dia. push cable
- » 1.68" dia. color camera
- » 512 Hz Sonde
- » On-screen footage counter
- » Wheel kit for easy transport and maneuverability
- » Reel brake
- » Centering skid

Electric Eel®

www.electriceel.com
Toll-Free: 1.800.833.1212

Logiball^{inc.}

Quality equipment for the maintenance & trenchless rehabilitation of collection systems since 1983.

Multi-size Pipe Plugs

Pressure Testing, Blocking, Bypass Pumping



Factory replaceable sleeves available

Logiball Test & Seal Packers

Stop infiltration through pipe joints & lateral connections in collection systems & prevent erosion of fines into the sewer.



Lateral Packers

Mainline Packers

Elliptical pipe

Lateral Cleaning Launchers

Clean laterals from the mainline sewer as far as 40 feet in the lateral.



Carriers for Sectional CIPP Lateral Liners

Available for 3", 4," 5" & 6" pipes. Models available for bends & push rod option.



Factory replaceable sleeves available

Multi-size Flow Thru Carriers

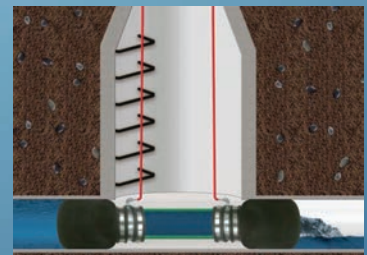
For mainline CIPP sectional liners 6"- 36" pipes in lengths up to 25 feet



Factory replaceable sleeves available

Flow Diversion Plugs

Model D plugs are ideal for manhole rehab



TEL: 1-800-246-5988

TEL: 418-656-9767

FAX: 418-653-5746

WWW.LOGIBALL.COM

THE ALL NEW FTR DELIVERS MORE VALUE IN A LCF TRUCK



- **Increased payload allowance for customer needs**
- **Easy to drive with outstanding driver visibility, superior maneuverability and a tight turning radius**

- **8 wheelbases accommodate a multitude of body choices from 14-30 feet**
- **Delivers a low cost of ownership with a 4HK1-TC diesel engine and Allison RDS 6-speed automatic transmission**



VISIT YOUR LOCAL ISUZU DEALER AND ORDER YOURS NOW

Call 866-441-9638 or visit our website for additional information.

www.isuzucv.com

Vehicle shown with optional equipment; some equipment is dealer installed. F-Series vehicles are assembled from component parts manufactured by Isuzu Motors Limited and by independent suppliers who manufacture such components to Isuzu's exacting standards for quality, performance and safety. Please see your authorized Isuzu dealer for additional details.

© 2017 ISUZU COMMERCIAL TRUCK OF AMERICA, INC.

The Right Fee for Emergencies

There's more than one pricing strategy for after-hours service calls

By MaryBeth Matzek

When there is a plumbing emergency at night or on the weekend and fixing it can't wait, the property owners pick up the phone, knowing they will likely pay more for any work that needs to be done.

Plumbers want to make sure their costs are covered — think overtime pay for the employee (which includes transportation time) and transportation costs.

“We used to do time and a half on the weekends, but it can be challenging since you're trying to price a job over the phone. You don't really know what you are walking into, and then if the final price is higher than the estimate, customers get mad.”

Jeff Berndt

OVERTIME RATES

“Most plumbing companies in this area just charge an overtime rate, which is just time and a half for the time worked with an added one hour travel time,” says Kevin Walker, drains division manager with O'Connor Plumbing & Heating in Germantown, Maryland. Equipment and parts costs are also often added to the final bill.

Walker, however, took a different route. He set his rates after looking at what three competitors charged.

“I used that as a base rate, then added what I thought was a fair number on to it,” he says, adding his final fee is about \$35 more per hour than his competitors.

He went with the higher price — even though O'Connor Plumbing was just starting its drains division — since Walker felt the company's plumbing reputation warranted it. “People don't mind paying that more expensive rate since they know our service is better,” he says.

FLAT RATE

Jeff Berndt, owner of Best Plumbing/Best Bath in Marion, Iowa, decided to charge a flat rate for after-hours calls. For example, he charges \$40.95 during the day when a technician comes out to a residence and then provides an estimate on the service cost. That fee increases to \$110 on nights and weekends.

“We are trying to be fair. People really don't want to call at night or on the weekends,” Berndt says. “Our technician will come out and do an estimate and share that with the customer before doing any work.”

That means the cost to replace a water heater on a Sunday is the same, except for the difference between the service calls. “It's only \$60 more. We used to do time and a half on the weekends, but it can be challenging since you're trying to price a job over the phone,” Berndt says. “You don't really know what you are walking into, and then if the final price is higher than the estimate, customers get mad.”

Berndt rotates the on-call duties among five plumbers, with each one taking a week. “We probably only average one after-hour call a month,” he says. “They are not too common.”

NO EXTRA CHARGE

While most plumbing contractors charge extra for providing off-hour service, others opt to charge the same rate whenever the work needs to be done. For example, bluefrog Plumbing + Drain, which is headquartered in Phoenix, Arizona, but has several franchises across the country, uses one fee scale, no matter when the call comes in.

“We know how overwhelming and stressful it can be to have a plumbing problem occur, especially when it is unexpected and during inconvenient circumstances,” and the company does not want to add to that by charging extra fees, says Jeff Moody, president and chief operating officer for bluefrog Plumbing + Drain.

Each of the contractors knows there isn't one right or wrong way to determine emergency fees, but all say other contractors need to do their research to see which way fits their business the best. **C**

Cleaner
Cleaner
Cleaner
Cleaner
Cleaner

Socially Accepted






facebook.com/CleanerMag
twitter.com/CleanerMagazine
youtube.com/CleanerMagazine
linkedin.com/company/cleaner-magazine

DURACABLE DALE



WORDS OF WISDOM

WHY REMOVE CLOGS TOMORROW

— WHEN YOU COULD —

PREVENT

THE CLOGS TODAY

15% OFF DRAIN CARE

PROCLEAN

A CLEANED DRAIN DOESN'T STAY CLEAR FOR LONG. THAT'S WHY YOU TURN TO PREVENTATIVE DRAIN CARE PRODUCTS TO KEEP CUSTOMERS HAPPY. DRAIN CARE PRODUCTS KEEP WORKING LONG AFTER THE JOB IS DONE.

OFFER VALID OCTOBER 10 - 25, 2017. PROMO CODE 569. DOES NOT APPLY TO PC4, PC5, ROOTX OR PRIVATE LABEL. NOT VALID WITH OTHER OFFERS. NOT VALID ON PREVIOUS ORDERS. SUBJECT TO CREDIT APPROVAL.

DURACABLE.COM



DURACABLE MANUFACTURING CO

877.244.0556

RIGHT IN THERE WITH YOU.



WHY DO LESS WHEN YOU CAN **ACHIEVE** SO MUCH MORE?

Picote Coating System A simple way to renew small diameter drains



Locate your reseller at picotesolutions.com or call 219 440 1404 for further information.

NEW: Picote Worldwide Training Center now open in Anderson, SC.

THE SMART CUTTER™



PRODUCT OF THE YEAR 2012

THE CABLE CENTER 1-800-257-7209

MIDWEST'S LARGEST FACTORY AUTHORIZED
REPAIR CENTER FOR GATORCAM, GEN-EYE & SEESNAKE

24
HOUR
TURNAROUND

**FREE
FREIGHT
ON ALL RIDGID
CAMERA
KITS**

RIDGID's CS10 Digital Recording Monitor

- USB Thumb Drive
- 12.1" Daylight Readable Display
- Multi Mode Recording
take snapshots, record full video & lean video
- Software Integrations
with SeeSnake HQ & RIDGIDConnect™



CALL FOR
SPECIAL
PRICING ON
ALL CAMERA
KITS!

THE CABLE CENTER · 8318 OLIVE BLVD. · ST. LOUIS, MO 63132 · 314-993-3099 · www.thecablecenterinc.com

HIGH PRODUCTIVITY TOOLS

FOR THE TOUGHEST WATERBLASTING JOBS



Tube Cleaning

Surface Preparation

Pipe Cleaning

Need the power of high pressure water harnessed to perfection?

Jetstream®, is your waterblast superstore with units, pumps, parts, accessories and hands-free tools that are productive, easy to use and loaded with operator safety features. Jetstream parts and accessories are conveniently available for rent or purchase at Jetstream as well as 12 FS Solutions locations throughout the U.S. and 8 JJEI locations in Canada.

Call to learn more about Jetstreamlining your business.



Tube Spinners



Orbi-Jet™ X22



RotoMag™ X22



Joe Johnson Equipment
Subsidiary of Federal Signal Corporation

fssolutionsgroup.com • 800-822-8785 | waterblast.com • 800-231-8192 | jjei.com • 800-263-1262

© 2017 Federal Signal. Jetstream® and FS Solutions® are registered trademarks of Federal Signal.

MEETING THE MARKET'S NEEDS

INVESTMENTS IN ADVANCED UTILITY LOCATING AND MAPPING TECHNOLOGY
STEERED EXCAVATION CONTRACTOR IN A NEW DIRECTION

When Pat Aubin founded AEI Subsurface more than four decades ago, the company's primary focus was site preparation for residential construction projects. But today, AEI mostly focuses on technologically advanced utility locating and mapping.

How AEI (which stands for Aubin Excavating Inc.) evolved from force to finesse and from heavy machinery to sophisticated high-tech equipment underscores the importance of spotting and capitalizing on changing business conditions and underserved markets. It also shows how the older generation in family-run businesses can benefit from embracing ideas proposed by the next generation — in this case, Aubin's son, Nick, now a co-owner of the Warren, Rhode Island-based company.

"I knew we had to do something different, but Nick had the knowledge to figure out exactly what that was," says Pat, age 65. "The takeaway is you need to listen to your kids. You spend such a large part of your life teaching your children, but at some point, the student becomes the teacher."

For AEI, that point came in 2003 after Nick graduated from the New England Institute of Technology with a degree in electrical engineering. He had worked as a laborer and equipment operator for his father as a teenager, but he never planned on working in the family business. However, he was intrigued by a dilemma confronting his father: Excavating had become such a high-cost and high-liability industry that he wanted to drive the company in a new direction.

Utility locating seemed like a good direction to go. Pat had frequently encountered instances of inaccurate utility locating, so an underserved market niche existed. Moreover, Pat had compiled years of utility line installation experience, so he knew how underground utilities are laid out — an important market differentiator and competitive advantage.

<< Kevin Conlon of Rhode Island-based AEI conducts a utility investigation at the Rhode Island Police Barracks Headquarters in North Scituate.

>> **Opposite Page** Pat Aubin (left) and Kevin Conlon locate utilities at Faneuil Hall in Boston using RIDGID locators.



AEI SUBSURFACE

WARREN, RHODE ISLAND

OWNERS: Pat and Nick Aubin

FOUNDED: 1973

EMPLOYEES: Three

SPECIALTIES: Utility locating and mapping, utility exposing

SERVICE AREA: Rhode Island, Massachusetts and eastern Connecticut

WEBSITE: www.aeisubsurface.com





“I KNEW WE HAD TO DO SOMETHING DIFFERENT, BUT NICK HAD THE KNOWLEDGE TO FIGURE OUT EXACTLY WHAT THAT WAS.

THE TAKEAWAY IS YOU NEED TO LISTEN TO YOUR KIDS. YOU SPEND SUCH A LARGE PART OF YOUR LIFE TEACHING YOUR CHILDREN, BUT AT SOME POINT, THE STUDENT BECOMES THE TEACHER.”

Pat Aubin

After Nick did some research, the company invested in an electromagnetic (EM) utility locating system made by Vivax-Metrotech and a ground-penetrating radar (GPR) system manufactured by Geophysical Survey Systems.

HIGH-TECH DETECTION

EM technology relies on a transmitter, which emits a frequency selected by the operator, and a receiver, which is set to detect those frequencies. The transmitter sends an EM current in the form of a specific radio frequency through pipes or cables, typically via a connection to an above-ground access point. As such, a receiver tuned to the same frequency enables the operator to follow the pipe. An operator should theoretically be able to trace its paths as long as the line being traced is metallic and continuous.

GPR is an entirely different animal. It operates like a fish-finder device, except that it transmits EM energy into the ground. These signals reflect back to the receiver, where a processor and software interpret what it’s “seeing.” Different materials possess contrasting electrical properties. The greater the contrast between two materials, the stronger the reflections show up on the GPR’s monitor.

It takes intensive training and field experience to learn how to interpret the images. “It’s a great tool for determining possible anomalies and other



The AEI team air-excavates to expose previously marked utilities.

<< AEI Subsurface owners Pat Aubin (left) and his son, Nick, stand in front of the company's utility locating van at their shop in Warren, Rhode Island.

>> Kevin Conlon locates and maps underground utilities along a street in New London, Connecticut.



conductive and nonconductive utilities that may not exist on facility plans,” Nick explains. “But it’s not infallible technology. For example, GPR signals transmit well in resistive materials, such as sand and gravel, but soils containing clay-, ash- or cinder-laden fill — or fill saturated with brackish or otherwise electrically conductive groundwater — can cause GPR signal attenuation and loss of target resolution. Overall, it’s another tool in our toolbox. It’s useful for finding (nonmetallic) water pipes that aren’t conductive.”

AEI typically uses these two main technologies to develop a complete underground “picture.” GPR complements EM locating because it can detect nonmetallic lines — think plastic, clay or reinforced concrete, for instance — that the EM technology can’t detect.

In addition, researching utility records prior to locating and mapping is a must. “You have to know what utilities you’re dealing with in order to apply each technology,” Nick points out. “We first use the EM system and mark the utilities and then use GPR to survey the area and find unknown objects and anomalies.”

There’s also a physical aspect to utility locating. AEI also does legwork, performing visual inspections that may include examining manholes and catch basins. Because the technology isn’t completely foolproof, physical inspections are essential. “Sometimes we open a manhole and find 10 different lines running through it, all different heights and (diameter) sizes,” Nick says. “Some of them might be abandoned, and some still in use. All this research goes into the mapping. It’s another piece of the puzzle.”

BUILDING A BASE

To establish a customer base, AEI concentrated primarily on locating utilities on private property, usually military and industrial complexes as well as state- and federal-owned facilities. Because many state and federal jobs specify GPR technology, the investment in a GPR system “opened a lot of doors for us,” Nick says.

As the company built a reputation for accurate locating and mapping, business slowly grew, largely through word-of-mouth referrals. “As it grew, it just kind of took over our business,” Nick notes. “The more we did that kind of work, the more clients realized a need for it.”

Liner Products

WE BRING IT.

When It's All On Your Shoulders. **You Can Count On Us.**

Liner Products is there when you need us: with precision-engineered custom CIPP tubes designed for a wide variety of installation methods and challenging design conditions, and the logistics support to respond fast in emergencies. Contact Liner Products today, and let us help you shoulder the load on your next CIPP project.

Clearly Superior

Liner Products 812.723.0244 | LinerProducts.com
©2017, Liner Products

Now offering saturated and UV tubes in addition to our traditional dry non-woven felt products.



Kevin Conlon (far left) uses a Geophysical Survey Systems GPS locator to pinpoint utilities at a parking garage project site in Providence, Rhode Island. Conlon is working with two employees from project contractor National Grid.

Pat's knowledge of underground utility installation provided a competitive advantage because he understood nuances of utility lines that contractors without installation backgrounds might overlook. For example, when contractors install 18- or 20-foot-long sections of water pipe, they're supposed to include bronze wedges — small metal devices that bridge the nonmetallic connection joints between pipe sections and, in effect, provide a continuous metal connection from pipe section to pipe section.

Wherever the conductive wedges weren't installed, the EM receiver loses the pipe's signal, which often results in the receiver tracing a nearby pipe instead — an occurrence known as signal bleed. "If the receiver doesn't have a conductive line to follow, it'll jump to something else," Pat

"YOU HAVE TO KNOW WHAT UTILITIES YOU'RE DEALING WITH IN ORDER TO APPLY EACH TECHNOLOGY. **WE FIRST USE THE EM SYSTEM AND MARK THE UTILITIES, AND THEN USE GPR TO SURVEY THE AREA AND FIND UNKNOWN OBJECTS AND ANOMALIES.**"

Nick Aubin

Lansas[®] PRODUCTS

Manufactured by Vanderlans & Sons, Inc.



MANHOLE VACCUUM TESTING

Lansas has a full line of vacuum testing components and kits available.

21" - 27" Multi-Size Vacuum Test Head and Super Vac™.



"SMART BOX™" LINE ACCEPTANCE TEST KIT

From plugs to panels we manufacture all components needed for line acceptance and leak locating.



JOINT TESTER

We have joint testers available in single and double bladder designs for pipe sizes 24" - 144".

These units are available in high and low pressure models for use in pipe lines which allow up to 5% deflection.

SST PLUGS

Single Size Test Plug (SST) with smart air test triple hose.



says. "So if someone doesn't know how water pipes are installed, they can't locate it as accurately."

Correctly analyzing the data from EM and GPR technology is as much art as it is science, and Kevin Conlon, the company's only employee aside from the owners, is an expert operator. Pat says, "He's very essential to our operation."

Experienced operators like Conlon are just as important as the technology itself. "You're looking at a blank slate and then using research and the technology to develop a full picture of what's down there," Nick explains. "It's more involved than just throwing equipment at it and getting the job done. On the other hand, we couldn't do as much without the technology. Using witching sticks (divining rods) is not a viable method of utility locating."

FOLLOW THE MONEY

When Pat started his business in 1973, he hardly could've imagined doing anything except operating heavy equipment. Upon graduating from high school, the heavy-equipment-crazy teen bought an International 500 bulldozer and started doing site prep work for new house construction. Prompted

UTILITY-LINE LOCATION SYSTEMS STEERED FIRM INTO NEW MARKET

When AEI Subsurface decided to ease away from excavation services in favor of utility line locating and mapping, co-owner Nick Aubin knew the company had to invest in reliable and precise systems in order to gain a foothold in this new market.

After doing in-depth research, Aubin concluded that two different kinds of technology would position the company for success: a ground-penetrating radar (GPR) system made by Geophysical Survey Systems and an electromagnetic (EM) detection system developed by Vivax-Metrotech.

Aubin says that the GPR system is not only reliable and accurate, but also offers different antenna configurations that make it more versatile. "You can use it for different target applications," he explains. "We can combine traditional structural scanning with higher-frequency antennas to produce targets inside concrete, such as cables, rebar and conduits. We can even find voids in bridge decks. The versatility is exceptional."

Another antenna does geophysical investigations, which can provide contractors with critical information such as how deep a bedrock ledge might lie underground. Without that knowledge, a contractor usually has to excavate, find the ledge, and then remove it with dynamite before digging farther. "Knowing the location of bedrock prior to excavation is critical," Aubin says. "It can cut the cost of an excavation project in half because of all the time that's saved."

The EM system from Vivax-Metrotech provides a wide range of EM frequencies that makes it very versatile. "Its antennas and displays, which include current direction and bleed-over detection, are very well put together," he says. "You can use it on any kind of conductive utility."

Aubin also likes the unit's ergonomic design, which makes it easier to use for long periods of time. "It's not crazy heavy, and it's very comfortable to use," he explains. "That's important because when you're waving a receiver around all day, fatigue definitely can be a factor." He says the unit is also very reliable, noting that it's 10 years old and still provides accurate results.



CUSTOM JOINT TESTER

This joint tester was designed and built for a water project near Phoenix, Arizona.

Each joint of this 21' diameter pipeline was tested at 32 PSI.

*Custom Designs
Are Always™ Available*

VANDERLANS AND SONS, INC.

California 1-800-452-4902

Atlanta 1-770-509-9309

Chicago 1-800-452-4902

Houston 1-832-831-4458

www.lansas.com



Build Your Business On A "Roq-Solid" Foundation.

Install the Gold Standard of spray-applied linings for trenchless rehabilitation and protective coating

Become a Certified Sprayroq Partner to work with the leader in spray-applied polyurethanes for the rehabilitation and protection of municipal and industrial infrastructure.

Why Join Us?

Visit the link to watch our new video "A Day In the Life" to see why our partners head the industry in **Confidence, Preparedness, Knowledge and Performance.**



<https://sprayroq.com/installers/>

Call us about becoming a **Sprayroq Certified Partner**



205.957.0020
sprayroq.com

Beyond buckets and blades.

digDIFFERENT

FIND OUT HOW.

FREE subscription at digdifferent.com

by a road-construction and utility-installation boom, he transitioned into road construction in the 1980s.

"We'd be working on residential construction, and contractors would ask me what I'd charge to build roads," Pat says. "That, in turn, led to installing water and gas lines and other underground utilities. What I did was follow the market, follow the money."

AEI even did vacuum excavating for a while, but Pat says it eventually became more economical to subcontract the air excavation work, so the company sold the machines. "By subcontracting this service, we get professionals (operators) and we only get them when we need them," he says, noting that subcontracting significantly reduces the company's labor, equipment and insurance costs.

The company still does some heavy-equipment excavation. To support that service, AEI owns two excavators, one backhoe and one bulldozer, all manufactured by John Deere. The company also owns an acoustic leak-detection system made by Hermann Sewerin GmbH.

SAFETY DRIVES GROWTH

The company's growth is driven by a high demand for accurate utility locating and mapping as well as the need to replace aging infrastructure safely, without hitting a cluster of adjacent lines. "There's so much stuff in the ground now. Things I never gave any thought about in the 1970s," Pat explains. "Back then, when you saw a fire hydrant, you knew there was a waterline there. Now, there's so much other stuff underground that there's a high level of concern you'll hit something that could kill someone."

Just how complicated is it underground? To get an idea, Nick suggests envisioning a layered circuit board: "That's what this is like, in a sense. And it's not only existing utility lines for water, sewer, natural gas, fiber-optic communications and electric service — it's abandoned lines, too. It's one big maze."

It would make sense that old utility records would show the locations of utility lines, but that's usually not the case. Most records show utility lines only as they were designed, not as they were actually installed, and there's usually big differences between the two because contractors deviate from the design when necessary. "The differences between the two can be shocking," Nick says.

Military bases are particularly complicated. In addition to the typical utility lines, bases might also have steam, oil, communications and compressed-air lines. "It's usually everything you can imagine, times two," Nick says. The stakes are high at such facilities because they also include things like secure communication lines. Pat explains, "If you hit a fiber-optic cable on a naval base, you've got a problem," he says. "There's a huge cost involved if something goes wrong." Moreover, at least three days ahead of a job, AEI has to submit the radio frequencies it plans to use so that military officials can ensure none of the frequencies will detonate ordinance on the bases.

Looking ahead, the Aubins expect to see continued growth as demand intensifies for replacing aging underground infrastructure. Excavation safety will also continue to play a role in driving growth. "If contractors know they can dig safely, there's value there," Pat says. "There's a lot of liability if they don't do their due diligence."

"I see nothing but growth for the next three to five years," he continues. "But we need to keep controlling the quality of our work. I have no intention of running a three-ring circus just to make money. We like to do things right." **c**

featured equipment

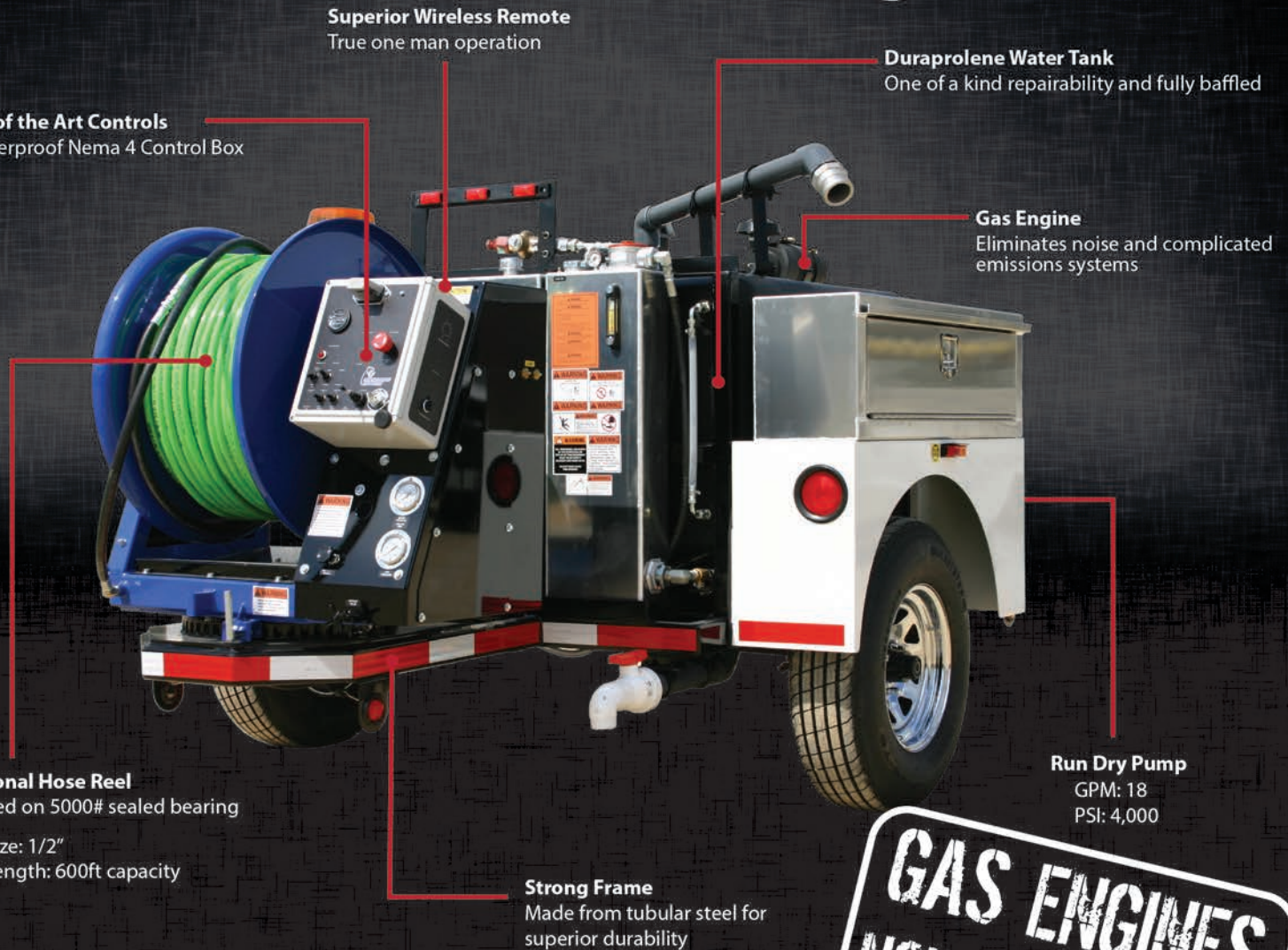
Geophysical Survey Systems, Inc.
800/524-3011
www.geophysical.com

Hermann Sewerin GmbH
888/592-9916
www.sewerin.com

Vivax-Metrotech Corp.
800/446-3392
www.vivax-metrotech.com
(See ad page 50)



Quality, Reliability and Affordability in a single machine.



State of the Art Controls
Weatherproof Nema 4 Control Box

Superior Wireless Remote
True one man operation

Duraprolene Water Tank
One of a kind repairability and fully baffled

Gas Engine
Eliminates noise and complicated emissions systems

Rotational Hose Reel
Mounted on 5000# sealed bearing
Hose Size: 1/2"
Hose Length: 600ft capacity

Strong Frame
Made from tubular steel for superior durability

Run Dry Pump
GPM: 18
PSI: 4,000

**GAS ENGINES
NOW STANDARD
NO NEED FOR TIER IV**

MONGOOSE MODEL 184

Other units and configurations can be found on mongoosejetters.com

Mongoose Jetters delivers industry leading high pressure jetting equipment that is purposefully built for the plumbing contractor market. Quality, service and a wide variety of equipment and options keep our customers operational and profitable. Mongoose Jetters stands behind its promise to provide customers with...

“SERIOUS MACHINES FOR A SERIOUS BUSINESS”

Contact Us for Updated Pricing Details

877.735.4640

RUGGED & RELIABLE

Performance by Design

Made in USA

Ideal For Grease Trap Service



Simply the BEST!!



ELECTRIC POWERED

ProVac

Industrial Pumpout Unit



ProChock - Transport Hold Down



GASOLINE POWERED

Designed, Machined & Assembled in the USA

www.westmoorltd.com

Westmoor Ltd., 906 West Hamilton Ave, Sherrill, NY 13461
Manufacturers of Vacuum Technology

TEL (800) 367-0972

T&T TOOLS

T&T Tools, Inc.

Fax: 800.521.3260

Email: sales@mightyprobe.com

800.521.6893
www.MightyProbe.com

Call for a FREE Catalog



Call for a FREE Catalog

HOOKS...

- > Several different styles of heat-treated hooks are available
- > Top Poppers are great to open manhole covers
- > The Handy Hooks allow two handed use

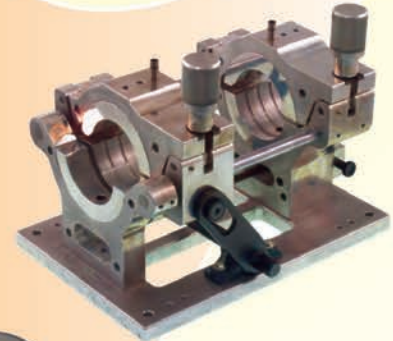
PROBES...

- > Insulated, standard, and specialty soil probes
- > Metal shaft sizes: 3/8" round, 3/8" hex, or 7/16" hex
- > Replaceable tips are threaded on and hardened
- > A "slide" allows the handle to pound the shaft into the ground

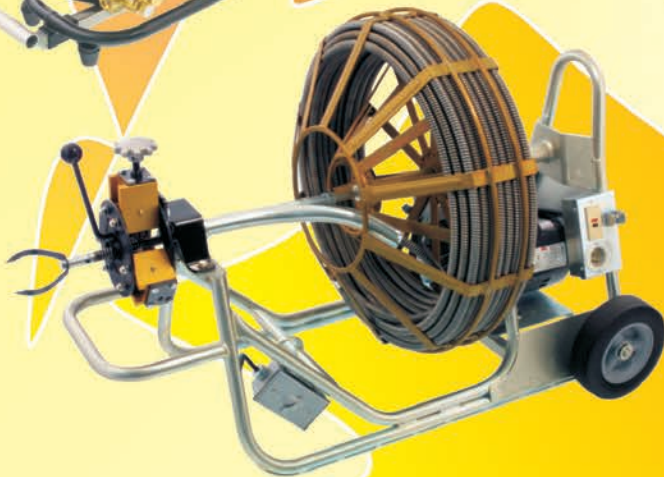


GORLITZ SEWER & DRAIN INC.

Norwalk Blvd. Santa Fe Springs, Ca. 90670



- MACHINES**
- FEEDERS**
- CABLES**
- RAMPS**
- CONNECTORS**
- LEADERS**
- CHUCKS**
- ENDS**
- RETRIEVERS**
- SPLICES**
- AUGERS**
-
- JETTERS**
- NOZZLES**
- HOSES**
-
- TRENCHLESS**
- PIPE SYSTEMS**
-
- SOCKET**
- FUSION KITS**



Engineering, Dedication, Quality, Sales and Service All In One Stop!

www.gorlitz.com
Email: sales@gorlitz.com
f GORLITZ on Facebook



Tel: (562) 944-3060
Fax: (562) 944-7630

The ABCs of CIPP

Understanding the basics of cured-in-place pipe rehabilitation will help you provide better solutions for your customers

By Gil Longwell

Buried pipes are, by their nature, generally inaccessible. Their earthen cover provides shielding from most accidental damage and weather and temperature extremes. But, sooner or later, buried pipes will require maintenance or replacement, and then their shield becomes their Achilles' heel.

The previous, traditional approach to both spot repairs and restoration of lengthy deteriorated segments was to dig up the pipe and fix the problem. Excavation was messy, disruptive to nearby and competing activities, and could take a lot of time. Each of these added to project costs, which in turn reduced the total length of pipe that could be restored in this manner — in a season or for a single project.

In the late 1960s, the idea of repairing or restoring a pipe from the inside began to take hold. About that time, the first patents for pipe lining equipment were issued. The repair strategy started in Europe and made its way to the U.S. in the mid-1970s, but its use wasn't widespread until the 1990s.

PLANNING AND RECONNAISSANCE

Before a liner can be inserted, the existing pipe must be cleaned and inspected. CCTV is used to determine the type of preparations needed. "Preparation can range from simple flushing to a hard and aggressive cleaning," explains Mike Burkhard, executive director of business and technology development at Reline America. "In some cases, root and obstruction removal



may be necessary. Severely deteriorated or partially collapsed areas must be evaluated for their ability to withstand and/or accommodate the introduction of a new pipe, but even partially collapsed pipes can sometimes be relined."

The new pipe material must be flexible enough to be inserted into an existing pipe, but strong enough to provide structural strength and good flow characteristics once cured. It also must be impervious and resistant to the nature of the materials it will carry.

Manholes are the logical beginning and end points for liner installation. Pipe joints at the manholes and any midrun lateral connections, once restored, must be properly sealed. External groundwater must be kept from infiltrating wherever the new liner is joined to an existing lateral. Likewise, the surrounding environment must be protected from leaks.

A fresh liner is lubricated and fed into an inversion unit for installation in a 4-inch-diameter sewer lateral.

Because every pipe segment is unique, there are few hard and fast rules in the relining industry. The door to a successful job is opened by a comprehensive understanding of the conditions that must be overcome and the use of proper materials.

<< Cured-in-place pipe provides an effective, trenchless sewer line rehabilitation option, especially when installed from an existing manhole.

>> Before installation, liners must be impregnated or “wetted” with a catalyzed resin. In some cases, pre-wetted liners are sent to the job site in a sealed container, but the wetting process can also take place on the job site in a purpose-built truck or trailer.

INSTALLATION METHODS

Once selected, the new liner material must be cut to length to reach from one manhole to the next, then wetted, and pushed or pulled into the host pipe. Two different and equally effective processes have been developed to accomplish this task.

The pull method uses a stout rope or cable that is inserted at a manhole and advanced downstream until it reaches the next manhole, where it is secured to the end of the liner. The rope pulls the attached liner upstream, first entering through the introduction manhole, then the pipe segment, and onward to the manhole through which the pull cable was inserted. Secured at each end, the liner is then inflated against the receiving pipe.

The inversion method uses compressed air or water to push the liner into the receiving pipe. One end of the liner is attached to a collar-like device at the insertion manhole. As air or water are introduced, the fluid “pushes” the liner to the next manhole. As it advances, the liner is turned inside out; this action is the genesis of the process’ name. When the liner protrudes into both manholes, it is trimmed, secured at each end, and inflated against the receiving pipe.

Once the liner is in place, it is cured, transforming the flexible liner into a rigid new pipe within the original pipe. Hot water, hot air, steam, pressurized ambient air or exposure to ultraviolet light are the primary curing methods. The process is selected based on the liner material, the resin and its chemical properties, and pipe diameter.

MATERIALS

The liner itself may be made using a woven or “felting” process. The most common liner base materials are polyester and fiberglass. Lynn Osborn, P.E., a technical director for NASSCO, explains “Felting is a textile production process that uses repeated partial insertion and removal of barbed felting needles into several layers of unwoven base fiber. As the needle is withdrawn, it pulls the fibers of one layer into the next.” Felt, unlike woven textiles, will not rip along a grain line, typically known as the weft line.

During fabrication, a liner starts out as a long rectangle. The two long sides of that rectangle must be joined together to create a high-strength, fully sealed seam. With the two sides overlapped, multiple lines of stitching may be used to retain consistent mechanical performance around the liner’s circumference. Another process is to butt stitch the



HEAVY-DUTY PIPE and SEWER CLEANING

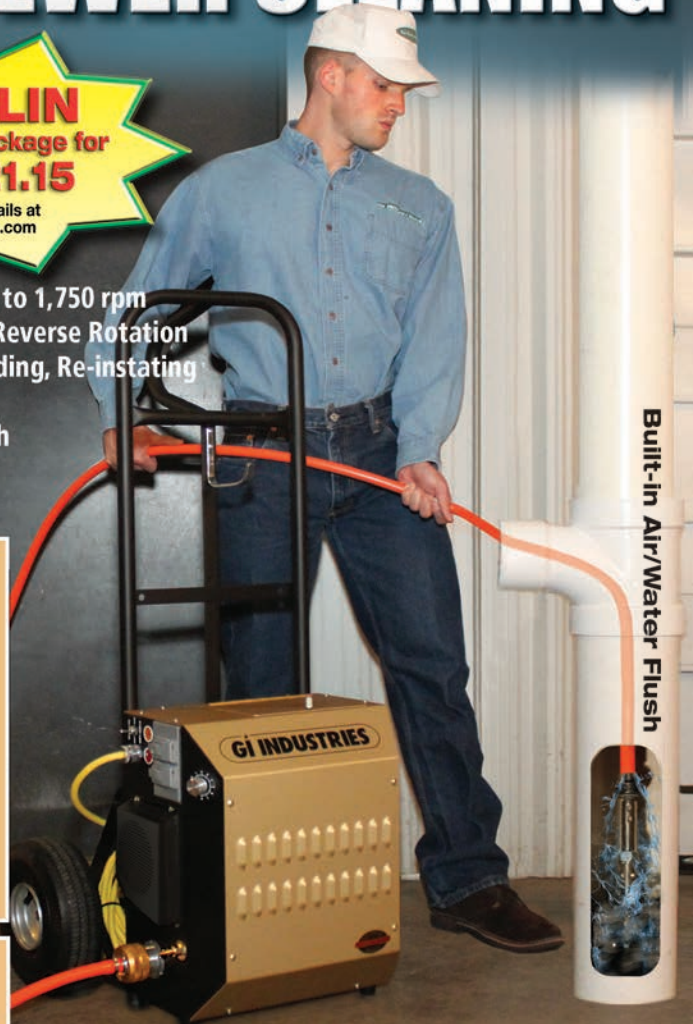
NEW
MERLIN
 Complete Package for
\$6,821.15
 See the details at
www.giind.com

- Variable speed from 0 to 1,750 rpm
- Forward/Neutral and Reverse Rotation
- Cutting/Cleaning Grinding, Re-instating
- Cleans up to 150 ft.
- Built-in Air/Water Flush
- ID from 1/2" to 2 ft.
- Runs on 110/220 volt

Contractor's Package Part Number - TCM-5001

- 1 TCM-5000 Drilling/Reaming Machine w/cart
- 1 Flexible Shaft 100' (FS501)
- 1 Flexible Shaft 50'
- 1 4" Pipe Cutter
- 1 4" Flex Hone 40 grit abrasive
- 1 Expandable Flex Hone 2'-3"
- 1 Shaft Lubricator
- 4 Lubricating Fluid 8oz.
- 1 Repair Crimping Block
- 4 Tool Repair Coupling
- 4 Drive Repair Coupling

Package \$6,821.15



GI Industries Inc. • 800-724-1944 • www.giind.com • sales@giind.com
 Owned/Operated and Made in the U.S.A.



A crew shoots a liner into a residential sewer lateral from a cleanout in the driveway.

two sides together without overlap. Some liner tubes are fabricated by gluing the two sides together. Regardless of the joining process, when inflated, the flat rectangle becomes a cylinder.

Additional woven or felted layers or a jacket of plastic film may be used to address specific conditions in the host pipe. Some manufacturers apply a thermoplastic coating for certain applications. These techniques are aimed at making the wetted liner easier to insert into the receiving pipe or to achieve smoother bends. Transition liners are available for pipes that change diameters midrun.

Before installation, the liner tube must be impregnated with a catalyzed resin. This process is called wetting or wetting out. Wetting can be accomplished in the liner fabrication plant or similar processing facility. These “pre-wetted” liners are sent to the job site in a sealed container to preserve the materials. Wetting can also be accomplished in a purpose-built truck on the job site. In that situation, the wetted pipe leaves the prep area and is immediately inserted into the receiving pipe.

“The dimensions and weight of the folded or coiled ready-to-install liner combine to influence the selection of the wetting facility and its location,” Osborn says.

Vinyl ester, epoxy and polyester resins are cured with steam, or hot or ambient temperature air or water, adds Burkhard. Styrene-based wetting agents have found favor for use with liners intended for sewer line restoration. Regardless of the resin selected, the curing process makes the resin material rigid and preserves the inflated liner’s shape.

LATERAL CONNECTIONS

Laterals that were sealed shut during relining must be “reintroduced.” First, these connection points must be located and the newly cured lining must be drilled, ground, routed or otherwise removed. Sealing these reconnected laterals presents a different set of challenges.

Working from within the larger pipe, a short, T-shaped liner (sometimes called a top hat or stove pipe) can be inserted into the lateral. This liner must sufficiently overlap the main liner and extend into the lateral to bridge any gaps and create a good seal against infiltration and exfiltration. In problematic situations, the surrounding soil can be grouted to supplement the internal-connection approach. Grouting can also be done from within the pipe.

PROS AND CONS

Compared to the traditional dig-and-replace approach, most CIPP jobs are planned to enable one or more relined segments to be completed in a single day. A single day disruption is more palatable to customers.

When relining is between manholes or similarly accessible points, it may be possible to avoid all excavation. Plugging an upstream sewer main can create some customer concerns, but a well-planned notification process will go a long way to minimize complaints. Manhole-to-manhole work significantly minimizes traffic disruptions as well.

Both pressurized and gravity-flow segments must be impervious at both ends and where laterals connect to the new liner. Groundwater must be protected from exfiltration of the conveyed fluids, and the system must be sealed against infiltration.

The largest-diameter pipe that can be successfully lined with current processes is about 10 feet while the smallest is about 2 inches. With few hard rules, these limits are related more to liner fabrication and insertion limitations than they are to liner performance. Preserving flow capacity to convey fluids appears to be the greatest small pipe challenge. When lining extra-large-diameter pipes, the challenge is the enormous weight of the liner itself and its coiled or folded size, both of which affect transportation options. “In the end, the liner itself may limit the situations in which it is a viable solution,” Osborn says. **c**

ultra ultra ultra
LIGHT – VERSATILE – SAFE

ultraSHORE
P R O D U C T S



Quick to Install.
As light as 130lbs.



Roll Your Own.
Optional wheel kit.



Stacks easily with
2' & 4' high panels.

This is What Aluminum Shoring Was Meant to be!



SCA
SAFETY CORPORATION OF AMERICA

1-800-683-8837

1-800-SH-ORING

CALL TOLL-FREE NATIONWIDE • 1-800-746-7464

www.shoring.com

SCOOTER

VIDEO INSPECTION SYSTEMS

20843 Santa Lucia
Tehachapi, CA 93561
Fax: 661.822.8917

**INDUSTRIAL
QUALITY,
MADE IN AMERICA**

"MOSTLY"

**Tired Of Squinting
At A Tiny Monitor?**

Get An Attaché With A **15" LED Hi-Def Monitor**

The new Scooter Attaché 1+ now includes a giant 15" LED hi-definition color monitor as well as a high quality SD/DVR recorder, and has the capacity to operate other camera systems too!



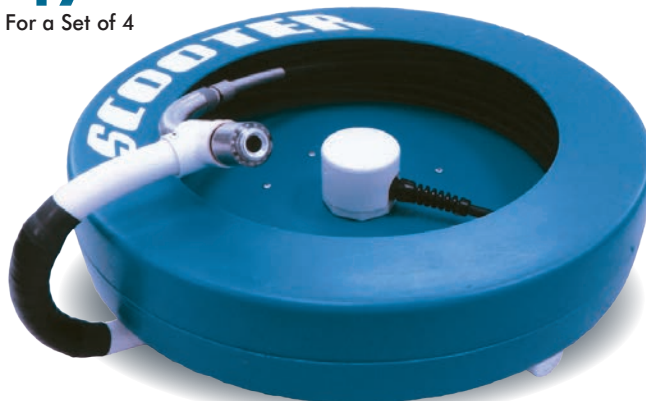
NEW

Anti-Skid Legs

They simply clip on. No glue or screws.

\$49.95

For a Set of 4



**"Simplify
Your Life!"**

SCOOTERS ARE EASY TO USE,
TOUGH AND DEPENDABLE.

**DON'T LEAVE THE SHOP
WITHOUT ONE.**



800.772.6165

www.tvinspection.com



THIS IS THE END OF THE
OVERHEAD MESS

VISIT OUR WEBSITE
FOR AVAILABLE ZIP DRAIN
KIT CONFIGURATIONS

888-594-7372
WWW.ZIPDRAIN.COM

HOW IT WORKS

Clear and unclog overhead drains with no mess

1



CLAMP TO CLEAN OUT DRAIN

2



ATTACH DRAIN HOSE

3



CUT HOLE IN DRAIN CAP

4



OPEN VALVE AND DRAIN CONTENTS

See what you've been missing

(800) 446-3392 ~ info@vxmt.com

vCam-5 Inspection System



512Hz Sonde
Locatable Pushrod
High Resolution Cameras
500GB Hard-drive

vCamMX Mini Inspection System



512Hz Sonde
Locatable Pushrod
High Resolution Cameras
Direct to USB recording

vScan Sonde Locator/Utility Avoidance Tool



512Hz & 33kHz Locator
Avoid energized cables

Call us for your no obligation on-site demonstration!

VIVAX
METROTECH

Vivax-Metrotech Corporation

3251 Olcott Street
Santa Clara, CA 95054, USA

Toll Free: 800-446-3392
Fax: +1-408-734-1415

Email: sales@vxmt.com
www.vivax-metrotech.com



Goes Where No Man Should... (or can't) Go.

The Lombrico automated crawler for remote hose-end control and much more.

The Lombrico remote controlled, double tracked crawler gets the vacuum hose-end directly into dangerous and hazardous material and hard to reach places – keeping the operator out of harms way. Ideal for confined spaces and no man entry in such environments as steel plants, refineries and mining operations, the innovative Lombrico mini excavator can be used to vacuum settled material in sewage pipelines, manifolds and tunnels larger than 2.6 feet (80 cm) in diameter.

The compact Lombrico is available in different sizes with a wide range of tooling. Offered exclusively by FS Solutions with 12 convenient nationwide locations and from Joe Johnson Equipment with 8 Canadian locations.

Visit www.FSSolutionsGroup.com/automation or call 1-800-822-8785 for more information or to schedule a demonstration.

Brought to by FS Solutions



Joe Johnson Equipment
Subsidiary of Federal Signal Corporation



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

Branching Out

Sometimes the best way to grow your business is by adding new services

By Erik Gunn

If you've been in business awhile, chances are you've seen some new opportunities cross your way.

Maybe you've got good cash flow, comfortable revenues, and an established routine. Or maybe you know you're doing a good job but frankly have some challenging ups and downs — seasonal peaks and troughs, or simply the uncomfortable realization that your market isn't growing.

Whichever your scenario — and there may be others, too — you may be interested in branching out. Expanding from what you do now into an allied line of business is one of the most obvious ways to grow your revenues.

It's a natural strategy for many reasons, and if you do it right, the payoff can be spectacular. Do it wrong, and the failure can be just as spectacular in its own way.

The contractors highlighted below have all been through the process of expanding services, and they provide some great tips and perspective to help you do the same.

LOGICAL CHOICES

First of all, make logical choices. Kline's Services started in 1955 as a south-central Pennsylvania septic pumping business in and around Lancaster.

Over the years, it evolved into a full-service company, with septic system repairs and sewer line work.

"We eventually added a treatment plant, which allowed us to expand into the commercial and industrial business," says Dave Kline, former president and grandson of the founder.

Each of those new business segments was a natural growth from the company's roots. Over time, the company's success grew and a little over two years ago it was acquired

"You're going to have competition. The question is, can you do it better? Can you do it more effectively, and can you do it professionally?"

Doyle Parsons

by New England-based Wind River Environmental, where today Dave Kline is now vice president of business development.

HOMEWORK

Do your homework. That should be obvious, but just what is your homework? Take the time to suss out the real answer to that question.

In deciding to add on a new line of business, "We would want to understand what the growth potential would be," says Kline. "How much competition is in the field that we are looking at, and how well do they perform?"

It doesn't stop there. You need to know what the new line of business will really cost to get going — what equipment it needs and how much manpower?

"What is the payback time?" Kline says. "Will it distract us from our core business, and if it will, what is our plan to handle that?"

But homework can also be much more intuitive. Early in 2017, Doyle Parsons added trenchless sewer repair to the menu of services provided by Parsons Plumbing, Heating, and Cooling in Ball, Louisiana.

Parsons will tell you he simply acted on "intuition, faith and a lot of guts" — but the real story isn't quite so impulsive as that might sound. For one thing, he's been in business for 10 years and has kept a close eye on his market.

Then, Parsons ran across posts on social media from plumbing businesses around the country that were using trenchless technologies. Scoping out its potential for his own business, he engaged professionals he works with daily, such as building inspectors, picking their brains on local practices and asking who was doing trenchless work in his own backyard.

The answer? No one. That was a lot of the homework he needed. But Parsons still took time to scope out alternatives, culminating in a trip to the 2017 WWETT Show in Indianapolis, where he did a final vet of the vendors he wound up partnering with.

FACE THE COMMITMENT

Tom Ferrero is well-known to readers as a longtime leader in the National Association of Wastewater Technicians, for which he currently serves as secretary. His multigeneration, suburban, Philadelphia-based septic pumping business branched out into treatment services many years ago.

To be effective in branching out from one service line into another, "You really have to be committed and understand that it's a separate business," Ferrero says. "It's an additional profit center that takes time and effort."

And if you are one of those active owner-operators who is directly part of the front-line service crew, get ready for a big change of scenery.

"Get your butt out of the seat of the truck," is Ferrero's standard advice to anyone expanding. "If you're a two- or three-truck operation, and you're driving a truck, it's really hard to manage a whole other business."

CUSHION AND SCALE

You can't expect to be a success in the new service from day one — but you may need new equipment and new employees right away. You'll need to be prepared to carry those costs until the revenues rise to cover them.

That's not an argument against expansion. "When I make that decision to buy another truck or hire another person, I may not have work committed for that," Ferrero says. "But we always grow into it."

At the same time, you need to be large enough that the new business

doesn't cannibalize the manpower from what you're already doing — especially if that manpower is you.

"I can't see a one-truck operator who goes out and buys a backhoe and a dump truck so he can install septic systems," Ferrero says. "When he's driving the backhoe, the pump truck is sitting there idle." You definitely don't want to be that guy.

Parsons made his move into trenchless repairs during a slack period in his existing work. It was the perfect time to send employees for training in the new technology without spreading people too thin on the continuing business that was, after all, still his company's mainstay.

"It doesn't put as much pressure on your team" that way, he says. "If you're in your peak season and you remove two guys (to take on the new work), you've just doubled the work for the rest of your guys."

EMPLOYEE BUY-IN

And speaking of your team, consider your current workforce.

That actually has two parts. One is assessing your employees' ability to take on these new services.

"I would review with myself the qualities of my employees to make sure that I'm covered on financial and operational expertise," Kline says. "I always look at whether we have the horsepower to gut it through when we are looking at adding additional service lines. You can have smart people in your company — but do they have the horsepower to get the job done when the going gets tough? We built our company with smart people who have horsepower."

But knowing your crew can do it isn't enough. You need to make sure the plan has their support: They're the folks who will make or break it.

"Have open discussions with your employees on their thoughts of adding the new service," Kline says. "Get their buy-in. I believe this is the most important step."

PROPER SUPPORT

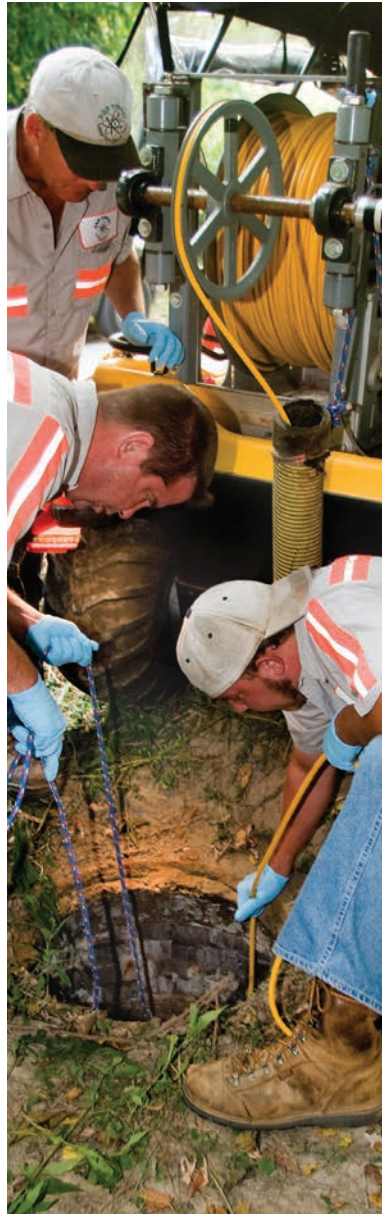
Finally, make sure you commit to the necessary marketing for your new line of business.

Parsons discovered his pathway to growth on social media, and so he naturally employed social media to help make the community and potential customers aware of his new services. He's also planning to expand geographically. "We're trying to branch out and cover the whole state," he says.

The bottom line? Definitely consider whether adding new services will help your business. Make sure you understand what you're getting into, but also don't be intimidated.

"You're going to have competition," Parsons says. "The question is, can you do it better? Can you do it more effectively, and can you do it professionally?"

Branching out isn't a guarantee of success, but if you approach it sensibly, it's one way to help your business grow. **C**



THE REEL THAT WORKS AS HARD AS YOU

When it comes to your equipment, you demand quality and value — and Hannay Reels delivers every time.

Pressure ranges from 300 PSI up to 10,000 PSI

Heavy-duty ribbed discs and one-piece axle hub assemblies

Low, hassle-free maintenance

Reels built to order with fast delivery

Visit Booth #2810 at the 2017 ICUEE Show and register to win a portable cable reel from Hannay Reels.



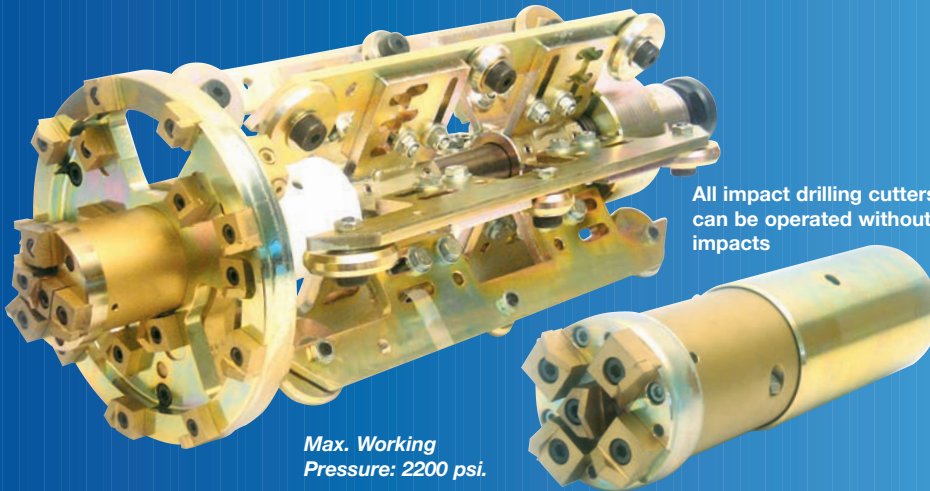
Find your next reel at the new hannay.com or 877-467-3357

 **Hannay Reels®**
The reel leader.

enz golden jet[®]

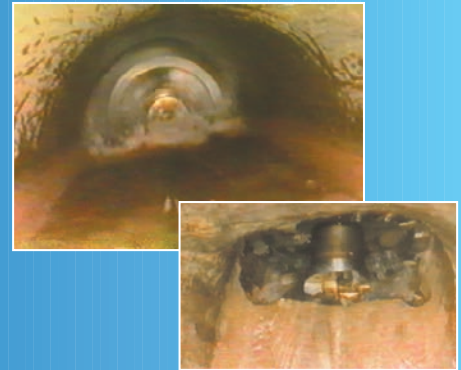
PERCUSSION MILLING CUTTERS beat even the toughest challenges!

These tools are a radical innovation for milling-off deposits in pipes. The *enz golden jet*[®] impact drilling cutters are designed to remove the most stubborn deposits like concrete, injection cement, calcareous layers, etc. Provided with carbide-tipped teeth, the beating cutter head mills off everything with a cadence between 600-3000 impacts per minute.



Max. Working Pressure: 2200 psi.

All impact drilling cutters can be operated without impacts



- Higher capacity than all marketable cutters
- Long edge life
- Easy handling
- Very low maintenance cost
- Rugged construction
- Range of application: ø4" - 24"



1585 Beverly Ct., Unit 115 • Aurora, IL 60502
Tel. (630) 692-7880 • Fax (630) 692-7885
www.enzusainc.com

Wastewater Solutions from RELINER[®]/Duran Inc.

Inside Drop Bowl Stainless Pipe Supports

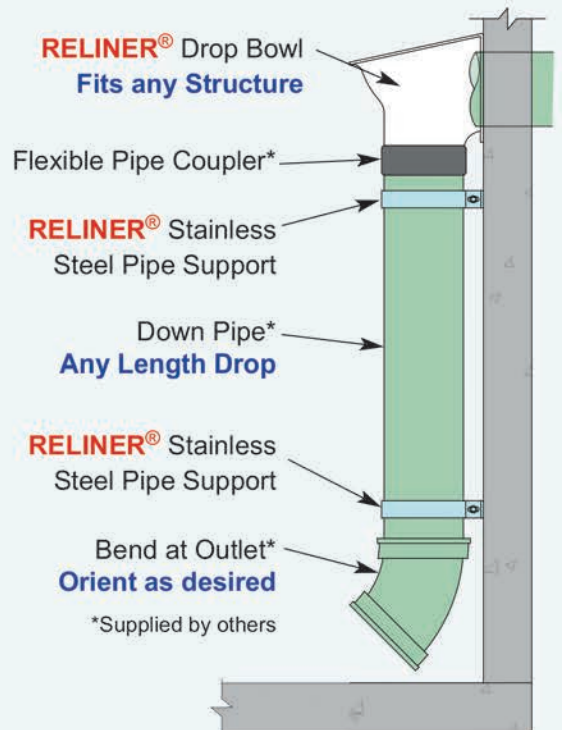
Type 304 & 316 Stainless Steel



- Eliminate outside drops
- Reduce maintenance
- Simplify cleaning
- Stop corrosion
- Install quickly
- Outlets from 4" - 24"
- Optional force line hood



Manhole Invert Channels



U.S. Patents #5553973, 6074130

www.reliner.com

Proudly made in the USA

1-800-508-6001

KING Cobra

storm drain inspections your way...

track or wheels on demand

The King Cobra rules the world of storm drain inspection with its unique steerable track or wheel choice to give you the right configuration for the inspection conditions on demand in the field.

- Inspect lines 18" and larger
- Variable speed
- Rear-mounted swivel connector
- Powered camera lift

*Shown with the PTZ V9 40X
Zoom Pan & Tilt Camera,
giving operators
maximum versatility and
power to go the distance.*



Call today for more info or a free field demo
of this product or any of our full range of
cctv inspection technology.

Cobra TECHNOLOGIES

4806 Wright Drive, Bldg C, Smyrna GA 30082
p: 800.443.3761 | 770.435.8991 f: 770.435.0402
info@trio-vision · www.trio-vision.com

trio-vision-ary
cctv inspection technology

PIPELINE REPAIR & REHABILITATION

Directory 2017

	RELINING	BURSTING	LATERAL REHABILITATION	MANHOLE REHABILITATION	SEALING/ SPOT REPAIR	REINSTATEMENT CUTTERS	GROUTING
 Atkore Plastic Pipe Co. / dba American Pipe & Plastics, Inc. PO Box 577, Binghamton, NY 13902 607-775-4340 • (f) 607-775-2707 www.ampipe.com • ampipe@ampipe.com	✓						
 Aries Industries, Inc. 550 Elizabeth St., Waukesha, WI 53186 800-234-7205 • 262-896-7205 • (f) 262-896-7099 www.ariesindustries.com • sales@ariesindustries.com	✓		✓			✓	✓
Avanti International 1100 Hercules Ave., Houston, TX 77058 800-877-2570 • 281-486-5600 www.avantigrout.com • sales@avantigrout.com			✓	✓	✓		✓
 CUES 3600 Rio Vista Ave., Orlando, FL 34705 800-327-7791 • 407-849-0190 • (f) 407-425-1569 www.cuesinc.com • salesinfo@cuesinc.com See ad on page 11			✓	✓	✓	✓	✓
 Emagineered Solutions, Inc. 1830 SE 1st St., Redmond, OR 97756 571-504-0416 www.theshootercipp.com • ray.i@emagineered.com	✓						
 Enz USA Inc. 1585 Beverly Ct. #115, Aurora, IL 60502 877-369-8721 • 630-692-7880 • (f) 630-692-7885 www.enzusainc.com • sales@enzusainc.com See ad on page 54						✓	
See ad on page 60 Forbest Products Co. 44130 Old Warm Springs Blvd., Fremont, CA 94538 877-369-1199 • 510-226-7988 • (f) 888-604-0107 www.forbestusa.net • sales@forbestusa.net	✓				✓		
See ad on page 8 Formadrain Inc. 10121 Pkwy., Montreal, QC H1J 1P7 888-337-6764 • 514-352-6911 • (f) 514-352-0167 www.formadrain.com • info@formadrain.com	✓	✓	✓		✓	✓	
See ad on page 45 Gorlitz Sewer & Drain, Inc. 10132 Norwalk Blvd., Santa Fe Springs, CA 90670 562-944-3060 • (f) 562-944-7630 www.gorlitz.com • sales@gorlitz.com		✓					
See ad on page 21 HammerHead Trenchless Equipment 500 S C.P. Ave., Lake Mills, WI 53551 800-331-6653 • 920-648-4848 • (f) 920-648-1781 www.hammerheadmole.com CDenissen@hammerheadmole.com	✓	✓	✓		✓	✓	
 I.S.T. Services, Inc. 6142 Nancy Ridge Dr., Ste. 101, San Diego, CA 92121 858-997-0004 • (f) 702-446-8665 info@istamerica.com • www.istamerica.com See ad on page 24	✓		✓	✓	✓		
See ad on page 39 Liner Products 1468 W Hospital Rd., Paoli, IN 47454 812-723-0244 • (f) 812-723-0405 www.linerproducts.com • info@linerproducts.com	✓		✓				

		RELINING	BURSTING	LATERAL REHABILITATION	MANHOLE REHABILITATION	SEALING/ SPOT REPAIR	REINSTATEMENT CUTTERS	GROUTING
See ad on page 25	LMK Technologies 1779 Chessie Ln., Ottawa, IL 61350 815-640-9302 • (f) 815-433-0107 www.lmktechnologies.com • info@lmktechnologies.com	✓		✓	✓	✓	✓	
See ad on page 30	Logiball, Inc. 440 Papin St., Quebec, QC G1P 3T9 CANADA 800-246-5988 • 418-656-9767 • (f) 418-653-5746 www.logiball.com • info@logiball.com	✓		✓	✓	✓		✓
See ad on page 15	 MaxLiner USA 450 College Dr., Martinsville, VA 24112 877-426-5948 • 276-656-1225 info@maxlinerusa.com • www.maxlinerusa.com	✓		✓			✓	
See ad on page 95	MTech 7401 First Pl., Cleveland, OH 44146 800-362-0240 • 440-646-0996 • (f) 440-646-9953 bcohen@mtechcompany.com www.mtechcompany.com						✓	
See ad on page 24	NozzTeq, Inc. 1949 Calumet St., Clearwater, FL 33765 866-620-5915 • 603-413-6583 • (f) 603-413-6744 info@nozzteq.com • www.nozzteq.com						✓	
See ad on page 93	 Nu Flow Technologies 7710 Kenmar Ct., San Diego, CA 92121 800-834-9597 • 619-275-9130 info@nuflowtechnologies.com www.nuflowtechnologies.com	✓		✓			✓	
See ad on page 7	 Perma-Liner Industries, LLC 13000 Automotive Blvd., Ste. 300, Clearwater, FL 33762 866-336-2568 • 727-507-9749 • (f) 727-507-9849 info@perma-liner.com • www.perma-liner.com	✓		✓	✓	✓	✓	
See ad on page 89	 Petersen Products Co. 421 Wheeler Ave., Fredonia, WI 53021 800-926-1926 • 262-692-2416 • (f) 262-692-2418 phil@petersenproducts.com www.petersenproducts.com	✓		✓	✓	✓		✓
See ad on page 34	 Picote Solutions 20810 SE 18th Pl., Sammamish, WA 98075 219-440-1404 sales@picotesolutions.com • www.picotesolutions.com			✓			✓	
See ad on page 27	 Pipeline Renewal Technologies 111-B3 Canfield Ave., Ste. B3, Randolph, NJ 07869 866-936-8476 • 973-252-6700 • (f) 973-252-1176 www.pipeliner.com • mail@pipeliner.com					✓	✓	
	 Pipe Lining Supply, Inc. 2970 E La Palma Ave., Ste. J, Anaheim, CA 92806 888-354-6464 • 714-630-6311 • (f) 714-630-6026 www.pipeliningssupply.com office@pipeliningsupply.com	✓		✓			✓	
	 Pipe Lining Supply Midwest, Inc. 4270 S Hilcrest Ave. #201, Springfield, MO 65810 888-654-6464 • 417-719-7172 www.pipeliningssupply.com plsmidwest@pipeliningsupply.com	✓		✓			✓	
See ad on page 16	 PrimeLine Products, Inc. 309 Altamonte Commerce Blvd., Ste. 1518 Altamonte Springs, FL 32714 877-409-7888 • 407-772-8131 • (f) 407-786-8131 andy@prime-line.net • www.primelineproducts.com	✓		✓	✓	✓		
See ad on page 83	 Quik-Lining Systems 178 SE Lake Dr., Estelline, SD 57234 605-695-6778 john@quiklining.com • www.quiklining.com	✓		✓		✓	✓	

		RELINING	BURSTING	LATERAL REHABILITATION	MANHOLE REHABILITATION	SEALING/ SPOT REPAIR	REINSTATEMENT CUTTERS	GROUTING
See ad on page 85	R.S. Technical Services, Inc. (RST) 1327 Clegg St., Petaluma, CA 94954 800-767-1974 • (f) 707-769-8806 sales.info@rstechserv.com • www.rstechserv.com			✓	✓			
See ad on page 77	RapidView IBAK North America 1828 W Olson Rd., Rochester, IN 46975 800-656-4225 • 574-224-5426 • (f) 574-223-7953 info@rapidview.com • www.rapidview.com						✓	
See ad on page 70	Ratech Electronics, Ltd. 260-7 Spinnaker Way, Concord, ON L4K 4P9 CANADA 800-461-9200 • 905-660-7072 • (f) 905-660-1519 sales@ratech-electronics.com www.ratech-electronics.com					✓		
 See ad on page 70	Reline America 116 Battleground Ave., Saltville, VA 24370 866-998-0808 • 276-496-4000 info@relineamerica.com • www.relineamerica.com	✓						
See ad on page 54	RELINER/Duran Inc. 53 Mt. Archer Rd., Lyme, CT 06423 800-508-6001 • (f) 877-434-3197 reliner.com • duran@reliner.com				✓			
See ad on page 64	Shamrock Pipe Tools, LLC 11210 S Choctaw Dr., Baton Rouge, LA 70815 800-633-7696 • 225-275-7696 • (f) 800-777-0660 www.shamrocktools.com • info@shamrocktools.com			✓			✓	
 See ad on page 100	Source One Environmental 300 S. Dayton St., Davison, MI 48423 810-503-9000 www.s1eonline.com • skerby@S1Eonline.com			✓				
 See ad on page 100	Spartan Tool 1605 W Division St., Mendota, IL 61342 800-435-3866 www.spartantool.com • sales@spartantool.com		✓					
See ad on page 42	Sprayroq Inc. 4766 Grandwood Rd., Ste. 150, Irondale, AL 35210 800-634-0504 • 205-957-0020 • (f) 205-957-0021 www.sprayroq.com • jhuckaby@sprayroq.com	✓			✓	✓		
	The Strong Company, Inc. 4505 Emmett Sanders Rd., Pine Bluff, AR 71601 800-982-8009 • 870-535-7617 info@strongseal.com • www.strongseal.com				✓			
 See ad on page 100	Trelleborg Pipe Seals Milford, Inc. 250 Elm St., Milford, NH 03055 800-626-2180 • 603-673-8680 • (f) 603-673-7271 www.trelleborg.com/pipe-seals tim.sparrow@trelleborg.com	✓		✓	✓	✓		
 See ad on page 100	TRIC Tools, Inc. 1350 S Loop Rd., Ste. 104, Alameda, CA 94502 888-883-8742 • 510-629-4167 • (f) 510-217-9493 info@trictools.com • www.trictools.com		✓	✓				



HD & NEW HELMET WATER BLAST PROTECTION



**NEW MODEL!
50% STRONGER
AGAINST
ABRASION AND
TEARING!**

**WJTA-IMCA
2017** conference
expo
Oct. 25-27 • New Orleans
BOOTH 1019



+ TESTED AND CERTIFIED
FOR WATER BLASTING, FIRST IN THE WORLD!

GO TO:

Find Distributors, News, Videos and E-catalogs at:
TST-SWEDEN.COM



**ORDER TOLL FREE
866-872-1224**

**SHOP 24 HOURS A DAY 7 DAYS A WEEK
ONLINE AT WWW.VARCOPIUMPER.COM**



VARCO LATERAL LINE/WATER JETTER HOSE

VARCO Branded and MADE IN THE USA;

We get it for cheaper, so we can sell it for cheaper.

- Lateral line hose has become the standard for the septic industry.
- Polyether-urethane cover provides exceptional cut, abrasion and fungus resistance.
- Sizes from 3/8" up to 1", Working pressures up to 4800psi.

PREMIUM PIRANHA SEWER HOSE

	DESCRIPTION	500 ft	600 ft
3/4"	Premium Pirhana Orange 2500psi	\$1,095.00	\$1,314.00
1"	Premium Pirhana Orange 2500psi	\$1,285.00	\$1,540.00
3/4"	Premium Pirhana Blue 3000psi	\$1,154.00	\$1,385.00
1"	Premium Pirhana Blue 3000psi	\$1,485.00	\$1,780.00



**NEW
VARCO
JETTERFLEX
HOSE**

**PREMIUM
PIRANHA
SEWER HOSE**



**Comes on Plastic
Reel- For No
Extra Charge! No
Cardboard to Get Wet!**
Smaller sizes and lengths
do not come on reel -
check with your customer
service rep for details.

**PROUDLY
MADE IN
THE USA**

NEW VARCO JETTERFLEX LATERAL LINE / JETTER HOSE

4000 psi rated • Safety Green - Pressure Tested • Precoupled assemblies MXM pipe thread fittings

***3/16" ON CLOSEOUT SPECIAL - SAVE 25%**

	50'	75'	100'	150'	200'	250'	300'	400'	500'	600'
1/8"	\$15.28	\$21.25	\$26.38	\$37.49	\$48.60	\$56.74	\$66.88	\$87.15	\$107.45	-
3/16"	\$21.23	\$26.95	\$33.60	\$44.89	\$56.84	\$68.80	\$80.75	\$104.66	\$128.58	\$152.50
1/4"	\$29.85	-	\$55.85	\$81.82	\$107.77	\$126.38	\$150.52	\$198.77	\$247.02	\$295.28
3/8"	\$62.08	\$91.28	\$105.54	\$151.12	\$215.06	\$259.57	\$304.05	\$382.09	\$469.43	\$556.77
1/2"	-	-	\$186.69	-	\$353.97	-	\$518.17	\$660.02	\$853.29	\$972.66

**SOURCE KEY
10C17**



DRY STEAM GENERATORS

Vertical or Horizontal

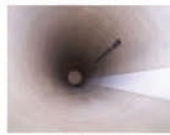
Applications:

Curing Municipal Pipe Relining Systems >
 Thawing, Degreasing, Weed Control
 Degassing Tanks, Prepping Surfaces,
 Cleaning & Restoring

Before



After



- 10/20/30/40/50 BHP
- 2 HP Electric Motor
- 100 PSI
- 450,000 to 2,000,000 BTUs
- 110 V - Single Phase



HONDA
 ENGINES



KOHLER
 ENGINES



www.easykleen.com

sales@easykleen.com

FORBEST

FORBEST PRODUCTS CO.

WHY BUY FORBEST

- Our products are the easiest devices to use and record with both USB and SD cards;
- Our products are reliable and the most affordable;
- We offer the lowest service cost and the shortest turn-around.

Portable Color Sewer/ Drain Camera FB-PIC3188SD

- 65'/100'/130' Cable & Reel
- Color Camera Head
- 7" LCD Monitor w/USB & SD

Starting At: **\$550**



Smart Crawler Inspection System

FB215

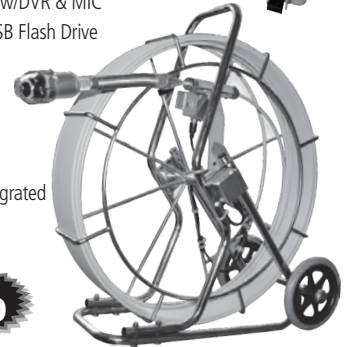
- Suitable for pipe with diameter from 6" -16"
- Creeping speed: 20'-66' per min
- 6-wheels drive
- Double motors can turn left and right
- Waterproof level: IP68
- Pan Tilt 360°/180° color camera head
- 500' Cable & Reel w/Meter Counter
- 10" LCD Control Station w/USB & SD recording
- Typing and Editing



Pan-Tilt 360°/180° Camera System

FB-PIC3688A/3688AT

- 200FT/ 400FT Cable & Reel w/Meter Counter
- Pan-Tilt 360°/180° Color Waterproof Camera Head w/Manual Zooming
- Spring Kit w/512HZ Sonde Transmitter for 3688AT
- 10" LCD Monitor w/DVR & MIC
- Recording with USB Flash Drive & SD Card
- Crawler for easier push
- Typing & Editing (Optional)
- Control Panel Integrated in the Heavy Duty Waterproof Case



Starting At: **\$4,590**

Please go to our Shopping Website www.forbestusa.com for more Cameras



US: 44130 Old Warm Springs Blvd. Fremont, CA 94538 Tel: 510 226 7988 Toll Free: 1 877 369 1199

www.forbestusa.net

Canada: 9040 Leslie St. Unit 1, Richmond Hill, ON L4B 3M4 Tel: 905 709 6226 Toll Free: 1 877 369 1199

Email: sales@forbestusa.net



INDUSTRY MARKETPLACE

With 600 exhibitors and 350,000 sf of exhibit space, the WWETT Show is the Marketplace for the wastewater and environmental services industry. See the new product launches, get hands-on with equipment, and make your purchases. The WWETT Show Marketplace is WHERE DEALS GET DONE



EDUCATION: FEBRUARY 21-23
 EXHIBITS: FEBRUARY 22-24
 INDIANA CONVENTION CENTER

WHY SHOULD YOU ATTEND?

- ✓ **Explore the Marketplace** for tools and resources you need for your business
- ✓ **Education** taught by some of the best and brightest in the industry
- ✓ **Events** to network with your peers - or just kick back with friends.

REGISTER TODAY AT WWW.WWETTSHOW.COM



Protection From High-Voltage Hazards

Bonding mats can be used to help prevent electric shocks when working near charged utility lines

By Sherree Geyer

Badger Daylighting crews know the dangers of working near utility lines firsthand, and thankfully they were using bonding mats.

“We’ve had tires that were damaged because they took current, and the employees were safe because they were on the mat,” says Dave LaFleur, corporate health, safety and environmental director for Badger Daylighting, a North American provider of hydroexcavation services. “When hooked up properly, the employees are safe from voltage.”

Bonding (or grounding) mats provide an insulated electrical safety mat that, when laid on the ground, protects workers. The National Institute for Occupational Safety and Health in Washington, D.C., also says the nonconductive safety mats prevent individuals from being a path for electrical current to the ground.

“Bonding mats create an equipotential, or equal potential, area to protect the operator in the event that water cuts through an energized power cable,” says Dean Krossa, president of Kri-Tech Products Ltd., a manufacturer of bonding mats. “If the water stream cuts through energized cable, the wand would become energized.”

PREVENTION

Bonding mats help prevent underground land strike injuries and deaths, according to the results of a six-month review of hydroexcavation electrical occurrences by Kri-Tech Products. Incidents involving gas line or power pole digs without the use of bonding mats resulted in hospitalization or death, the 2012 review found.

Krossa calls bonding mats an effective way to reduce exposure to electrical burns and fatal electrocution. Workers who excavate near underground cables or waterlines do risk electrocution, he says.

Bonding mats come in standard configurations, usually 58 inches square or 120 inches square. Custom configurations are also available.

“Mats are bonded to the lance and dig tubes, keeping the operator at equal potential and safe,” says Wes Scott, director of consulting for the National Safety Council.

PROPER CARE

Mats should be pressure washed, dried, and rolled for storage, states Kri-Tech Products’ care and maintenance guide. It also states the ferrules and clamps should be wire brushed before and after use “to keep connections clean and corrosion free.”

Repeatedly folding or rolling the mats in the same pattern can put stress on the embedded wire grid. The mats, and all associated conductive material, should be visually inspected before each use for damage, adds the guide, which calls “normal signs of wear acceptable” but “punctured, severed or missing braid elements unacceptable.” Those that don’t pass muster should be “tagged out and removed from service immediately.”

The guide adds that bonding mats should undergo digital low-resistance ohmmeter testing every three months or at prescribed intervals based on frequency of use. Those with measured resistance values outside acceptable ranges should be tagged out and removed from service.

BEYOND THE MATS

To protect themselves, Scott suggests hydroexcavation workers check out the National Safety Council’s best practices.

He says cables should be de-energized if possible, and breakers should be hot-line tagged so they trip faster at lower fault currents. Operators also need to have a heightened awareness, skill, training and knowledge of the limits on water pressure and temperature. Scott also suggests putting protective urethane covers on the water lance and dig tubes.

Personal protective equipment, such as omega-rated boots and footwear, can protect workers. “Footwear outsole can provide a secondary source of electrical hazard protection,” Krossa says.

LaFleur advises workers “to follow company job procedures as they relate to grounding and bonding” to protect themselves from hydroelectrical shock or electrocution. He points out that “digging at appropriate water pressure eliminates damage to underground infrastructure.” **c**





KEEP YOUR CAMERA IN TOP CONDITION WITH

EXPERT, FAST REPAIR

EXCLUSIVELY REPAIRS RIDGID SEESNAKE SYSTEMS

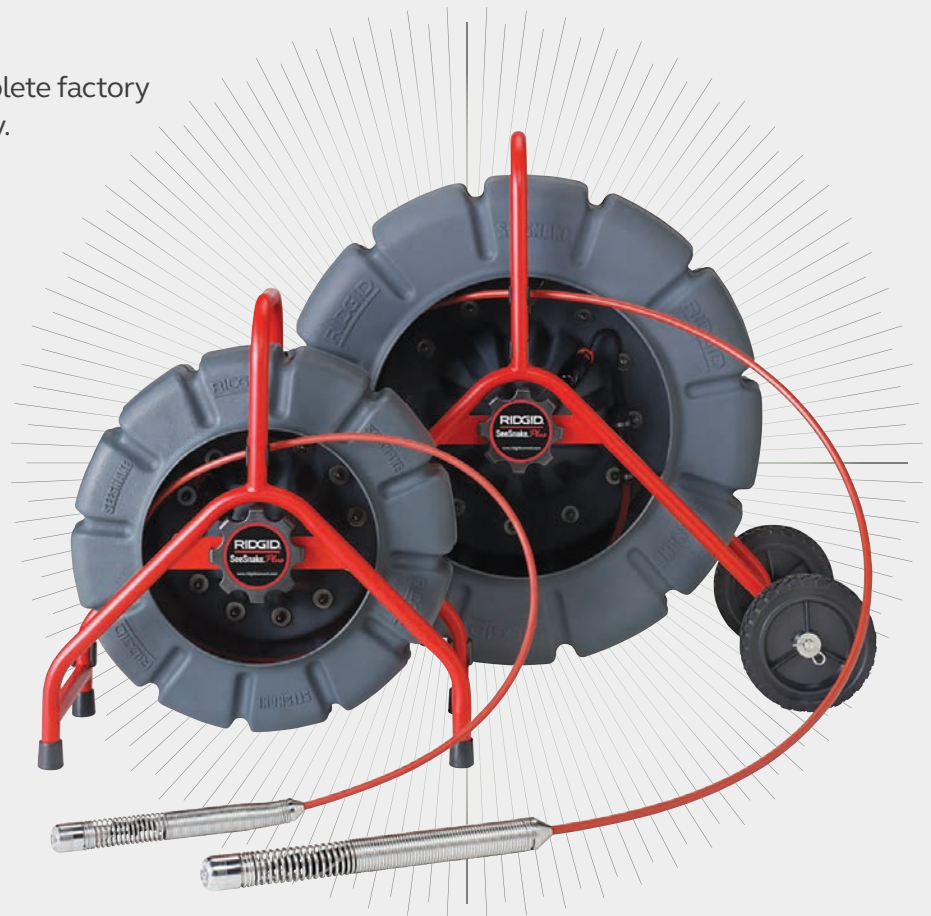
Select staff from Duracable were sent to complete factory training at the Ridgid Authorized Repair facility. Duracable is trained and ready to repair your Ridgid camera systems!

- + Camera Head Repair/Replacements
- + Push Cable Reterminations
- + Hub/Slip Ring Issues
- + Transmitter Repair
- + Counter Repair

WHY CHOOSE DURACABLE?

- + Factory Trained and Certified
- + Quick Turnaround on Camera Repair
- + Troubleshooting phone support
- + Flat rate pricing (applies to most repairs)

We Build Reputations™ | **RIDGID**®



DURACABLE.COM

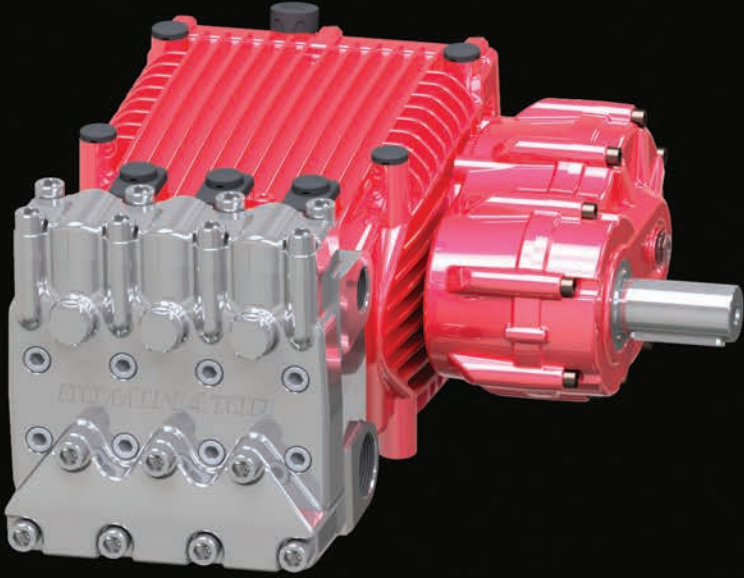


DURACABLE®
— MANUFACTURING CO —

877.244.0556

===== RIGHT IN THERE WITH YOU. =====

DOMINATOR



TRIPLEX PUMP
20 GPM @ 4,000 PSI

Best Quality. Best Price.
30 DAY MONEY BACK GUARANTEE

SHAMROCK
PIPE TOOLS

MANUFACTURING IN THE USA FOR 38 YEARS

WWW.SHAMROCKTOOLS.COM
(800) 633-7696

Equipment sales
Rentals
Service



EQUIPMENT FOR RENT

NANO

DN 3" - 4"



DRIVE

DN 6" - 16"



MICRO

DN 3" - 10"



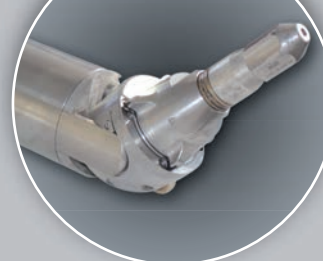
TURBO

DN 8" - 32"



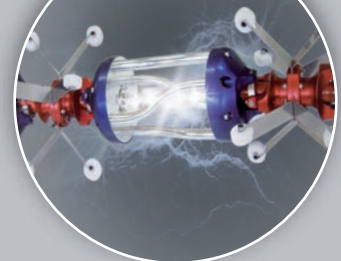
CLEANER

DN 4" - 20"



UV Equipment

DN 6" - 60"

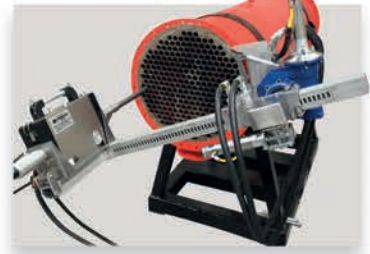


320 Raccuglia Dr. • La Salle, IL 61301

Phone: 815 - 220 - 1919 • Fax: 815 - 220 - 1918

www.cipp-robotics.com

MORE WATER JETTING RENTAL EQUIPMENT THAN ANYONE ELSE.



PUMPS AND ACCESSORIES AVAILABLE NATIONWIDE.

We know you often need water jetting pumps and accessories tomorrow morning - not next week - so our rental branches are stocked with a variety of well-serviced pump units and accessories near where you need us to be. NLB has seven well-established rental facilities staffed by knowledgeable personnel across North America. NLB's Sales, Service and Rental Branches are conveniently located to service your needs, please contact your nearest NLB Branch Office.



NLBCORP.COM

Novi, MI
(855) 347-1780

Mickleton, NJ
(856) 423-2211

La Porte, TX
(281) 471-7761

Gonzales, LA
(225) 622-1666

Signal Hill, CA
(562) 490-3277

Crown Point, IN
(219) 662-6800

Kent, WA
(253) 216-0463

LEADING WATER JET TECHNOLOGY™

© Copyright 2017 NLB Corp. 11/17/17/001_17_001 1

Dig These New Products at ICUEE 2017

By Craig Mandli

The International Construction and Utility Equipment Exposition (ICUEE), also known as “The Demo Expo,” is the premier event for utility professionals and construction contractors to gain comprehensive insight into the latest technologies, innovations and trends affecting their industry. This

year’s event, slated for Oct. 3-5 in Louisville, Kentucky, promises to show off some of the finest new products on the construction market. Below is a preview of some of the newest products that will be highlighted at this year’s show.

Cat Pumps Model 3560

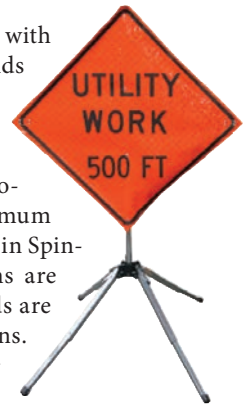
The **Model 3560** from Cat Pumps is a high-pressure water pump with two performance ratings: 25 gpm at 3,000 psi or 20 gpm at 4,000 psi. It is ideal for equipment operating in high-duty cycle/remote applications, such as hydroexcavating and jetting. This pump can be direct-driven hydraulically or pulley driven from a motor or engine. V-packings and low-pressure seals are completely lubricated and cooled, increasing pump life. No external oilers are required. The wet-end is easily serviced without entering the crankcase. A 316SS discharge manifold is optimal for hydroexcavating and other high-duty cycle applications.



763/780-5440; www.catpumps.com; Booth 2129

USA-Sign Compact C-Stands

Compact C-Stands from USA-Sign are made with a nonreflective vinyl roll up. Base sizes for the stands are available in standard or larger bases, and the legs come in galvanized steel or aluminum. They extend from 38 to 50 inches, and have leg release systems in Kick-Lever, T-Pin or Direct-Drive. The two-position, two-piece telescopic legs adjust for maximum stability and have built-in roll-up sign attachments in Spin-Handle or Quick-Attach. Wind-deflection systems are available in Leaf-Spring or Coil-Flex, and all stands are NCHRP-350 accepted for use with all roll-up signs. The Outrigger Beveled Button Snap enables faster work site tear down.



800/872-7446; www.usa-sign.com; Booth 3951

Ditch Witch JT40

The **JT40** and **JT40 All Terrain** horizontal directional drills from Ditch Witch use advanced drilling-system technology to conquer tough drilling environments. Show attendees can test the HDD virtual-reality training simulator, a component of the Ditch Witch HDD Certified Training program. The technology allows users to simulate a real HDD job site via its two-screen display and joystick. The VR simulator accelerates training for new-generation HDD operators without compromising job site safety. Attendees can explore the latest HDD tooling options for drilling in hard rock environments, including the Rock Monster backreamer and All Terrain drill pipe and housing.



800/654-6481; www.ditchwitch.com; Booth K155

Vac-Tron Equipment Truck-Mounted PTO Series Vacuum Excavators

Truck-Mounted PTO Series Vacuum Excavators from Vac-Tron Equipment include Hydro Truck Vac, which are available with 300- to 1,200-gallon debris tanks, 1,000 cfm blowers and 4-inch hose and tooling. The Jetter Truck Vac combines vacuum excavation with high-pressure jetter capabilities, with 1,000 cfm at 16 inches Hg vacuum blower, 800 to 1,200-gallon debris tanks, a 15 gpm at 3,000 psi jetter pump and 500 feet of 1/2-inch jetter hose. The Super Truck Vac is available with 500- to 1,200-gallon debris tanks, a 3,000 cfm PD vacuum blower and 6-inch hose and tooling. All come with a high-pressure water system, full hydraulic rear door, reverse pressure and Big Red filter housing that cleans air down to 0.5 microns.



888/822-8766; www.vactron.com; Booth K233

Herrenknecht Mechanized Tunnel Boring Machines

Mechanized **tunnel boring machines** from Herrenknecht can be used for all ground conditions and in diameters ranging from 4 inches to 62 feet. The product range includes tailor-made machines for transport tunnels (Traffic Tunneling) and supply and disposal tunnels (Utility Tunneling). Under the umbrella of the Herrenknecht Group, a team of specialists has formed to provide integrated solutions around tunnel construction with project-specific equipment and service packages.



253/447-2300; www.herrenknecht.com; Booth K241

Subsite Electronics Commander 7

The **Commander 7** display from Subsite Electronics offers enhanced capabilities to the TK RECON Series HDD Guidance System and delivers all vital tracking data to both the tracker and drill operators. It is compatible with both Apple iOS and Android devices. It has an expanded communication range, fast data rate speeds and a large, high-resolution 7-inch screen with intuitive, user-friendly icons. It offers users three ways to view their tracker data, including an Advanced Drill-To mode with PerspectiveView, an intuitive leap forward in data presentation that the company claims is "truly out of the box."



800/846-2713; www.subsite.com; Booth K375

Infinity Tool PDC Reamer

PDC Reamers from Infinity Tool are designed with a taper and a spiral that help make perfect holes, no matter the distance. The purpose of the taper is to centralize the reamer in the pilot hole to ensure a symmetrical hole is cut, equalize the size of the cut from side to side and enable the driller to ream from pilot to finish bore in the majority of holes. Pulling tabs are also available for all of Infinity Tool reamers. They are manufactured in push or pull body configuration, can be used both horizontally and vertically, and are designed for 25,000 psi compressive strength or less hard formations.



888/838-6657; www.infinitytoolmfg.com; Booth 3944

Reelcraft Series HD70000

Series HD70000 hose reels from Reelcraft are designed to accommodate up to 100 feet of 3/8-inch or 75 feet of 1/2-inch I.D. hose. The heavy-duty base design, all steel construction and a baked-on powder-coat finish combine to produce a rugged, corrosion-resistant product. A redesigned latching mechanism provides longer service life of the latch components. The containerized drive spring offers safer and easier handling during maintenance. Two sealed ball bearings produce a smoother spool rotation and easier operation. The guide arm adjusts to seven positions for various mounting locations and applications.



See ad page 24

800/444-3134; www.reelcraft.com; Booth 2339

MB America Crusher

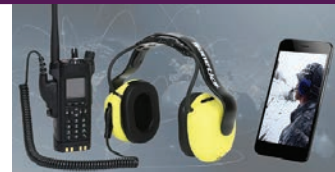
Crusher jaw crusher attachments for excavators, skid loaders, backhoes and loaders from MB America give contractors a versatile tool to navigate through narrow spaces and manage on-site processing. When contractors can crush onsite, they produce reusable material, optimize productivity and eliminate the need to transport material to a third-party processing facility. MB also offers trommel screening attachments, 360-degree rotation grapples and rotary drum cutters.



855/622-7874; www.mbamerica.com; Booth 3422

Sonetics Wireless Headsets

Sonetics Wireless Headsets protect hearing and let crews of two to 20 communicate hands-free at the same time. They help improve productivity and safety on the job site by eliminating the mistakes that come from missed or misunderstood communication. Listen-through technology lets the user toggle the right amount of outside sound for a boost of awareness and safety. Teamwork improves as users stay in touch across the work zone and easily coordinate complex tasks with better focus and concentration. It helps users train in the moment, instruct for precision, and correct mistakes instantly while the work continues. Other two-way radios or Bluetooth devices can be connected for even more options.



800/833-4558; www.soneticscorp.com/construction; Booth 3906

(continued)

HammerHead Trenchless Equipment HydroGuide HG2200

The 22-ton radio-remote controlled **HydroGuide HG2200** downhole winch from HammerHead Trenchless Equipment is designed for maximum efficiency and ease-of-use in pipe bursting, sliplining or slitting applications. It takes minutes to set up or tear down. Radio-remote control enhances ease-of-use, productivity and safety. Operators can fine-tune depth to 20 feet with the precision controls. Line payout speed is adjustable from 0 to 100 feet per minute, and pulling speed is 0 to 60 feet per minute. Line pressure is adjustable from 0.5 to 22 tons.

See ad page 21



800/331-6653; www.hammerheadtrenchless.com; Booth K265

Hannay Reels N700 Series

N700 Series reels from Hannay Reels are versatile reels used for pneumatic tools, water, high-pressure uses, lubrication, air, steam and general industrial applications. The standard N Series has a narrow frame to handle 1/4- through 1/2-inch I.D. hose, and a compact mounting base to be mounted on trucks, trailers and walls. These reels have four-way roller assembly, nonsparking ratchet assembly and declutching arbor to prevent damage from reverse winding. The standard inlet has a 90-degree balanced pressure swivel joint with 1/2-inch female NPT threads, and the standard outlet has 1/2-inch female NPT threads.



See ad page 53

877/467-3357; www.hannay.com; Booth 2810

VACMASTERS System 6000

The **VACMASTERS System 6000** is the first air-vacuum excavation system with the power to trench as well as pot-hole. It is designed from the ground up to lower costs, reduce injuries, and eliminate damage claims. The system uses supersonic air to penetrate, expand and explode the soil from within, while keeping it dry for easy vacuuming and quick backfilling. In turn, this will also increase revenues and profitability by doing more work in less time.



800/466-7825; www.vacmasters.com; Booth K222

Vactor Air-Only HXX Paradigm

The air-only version of the **HXX Paradigm** vacuum excavator from Vactor Manufacturing is equipped with the choice of air compressor rated at 185 cfm at 150 psi or 300 cfm at 250 psi. It can also be configured with several different water system configurations, including a wash-down system rated for 4 gpm at 2,500 psi equipped with a 100-gallon water tank, or a hydroexcavation system rated for 8 gpm at 2,500 psi equipped with a 300-gallon water tank.



800/627-3171; www.vactor.com; Booth 4906

Vacall Recycler

The **Vacall Recycler** continuous water recycling system is a green option for AllJetVac combination sewer cleaners that vacuums water from sewer lines, puts it through a five-step filtering process, then uses the same water to continue jetting. Located in the front of the debris tank for protection, the system includes a 240-gallon clean water tank attached to a 10 gpm pump and 50-foot hose reel for washdown. It offers automatic continuous filtering, with no filter change, no backflushing after clean-out work, no need for city water, no need to drive to refill the water tank, lower truck fuel use, minimal maintenance and a high throughput rate.



See ad page 71

800/382-8302; www.vacall.com; Booth 4219

Hyundai Construction Equipment Americas R35Z-9A

The **R35Z-9A** zero-tail swing excavator from Hyundai Construction Equipment Americas is powered by a 23.7 hp Yanmar engine. Its maximum digging depth is 10 feet 3 inches, and bucket breakout force is 6,900 ft-lbs. With a standard canopy, the unit has an operating weight of 7,800 pounds. It's also available with a cab. Standard bucket capacity is 0.14 cubic yards. It includes a thumb bracket, large dozer blade, hydraulic quick-coupler, attachment-ready auxiliary piping and auto two-speed function. Its boom swing enables the operator to offset the boom 75 degrees left and 50 degrees right, enabling close work alongside foundations and in congested areas.



877/509-2254; www.hceamericas.com; Booth K345



SAFETY FIRST!

12" Plastic Axial Blower

*The ONLY 12"
Plastic Blower
With A Canister
On The Market!*

FREE AIR 1842 cfm 28 lbs.	ONE 90° BEND 1004 cfm 1 hp	TWO 90° BENDS 933 cfm 110/220 V AC 50/60 Hz
----------------------------------------	-----------------------------------------	-------------------------------------------------------------

The polyethylene housing and canister assembly are designed to be light weight and super quiet. Made of corrosion, UV and chemical resistant polyethylene in "safety orange." The quick-connect clipping system allows attaching the canister to the input side for powerful extraction or output side for ventilation. Plus molded carrying handle and 25' of PVC coated vinyl and polyester ducting which stores within the storage canister.

GasAlert Systems



The
MicroClip
Gas
Detectors



The Quattro
Multi-gas
Detectors.



Call Toll-Free
1.800.325.3730
www.MilwaukeeRubber.com

Barbco FlexBor

The **FlexBor** method from Barbco is designed to virtually eliminate inadvertent returns that are associated with horizontal directional drilling. It also reduces expenses by requiring one head to create the needed hole diameter and often shortening the length needed to install the product. This gets the machine's centerline on, or close to, the elevation of the proposed bore. The system protects wetlands from inadvertent release of drilling fluids in a cost-effective, environmentally safe trenchless manner. **C**



800/448-8934; www.barbco.com; Booth K283.

REGISTER NOW!

WJTA-IMCA 2017 conference expo

Oct. 25-27 • New Orleans

Safety Best Practices, Equipment and New Technologies for Industrial and Municipal Cleaning



- **Waterjet Short Course - Basics & Beyond**
- **Live Demos**
- **Expanded Exhibit Hall**
- **Valuable Networking Opportunities**
- **Educational Sessions to Improve Your Safety and Bottom Line**
- **Technical Research Papers and Case Studies**



www.WJTAIMCAExpo.com
wjta-imca@wjta.org • (314) 241-1445
Presented by the WaterJet Technology Association and Industrial
& Municipal Cleaning Association (WJTA-IMCA).

More choices, more solutions, more innovation. That's Ratech.

- ✓ One-Touch USB recorder or SD recorder
- ✓ 10.4" sunlight-readable LCD
- ✓ Built-in Lithium Ion battery
- ✓ Wi-Fi connectivity-record direct to smartphone or tablet
- ✓ 100'-400' Premium Gel Rod™ Push cable
- ✓ 1.375" dia. Self-leveling camera
- ✓ Keyboard, footage counter, 512Hz sonde
- ✓ 3/4" micro camera compatible
- ✓ Pan n' Tilt push camera compatible
- ✓ Authorized service centers nation-wide



Ratech
ELECTRONICS

Video Pipeline Inspection Systems



For more information on these or other products call toll free:
1-800-461-9200 or 905-660-7072 www.ratech-electronics.com

Upload your inspection videos to [YouTube](https://www.youtube.com) Ask us HOW?

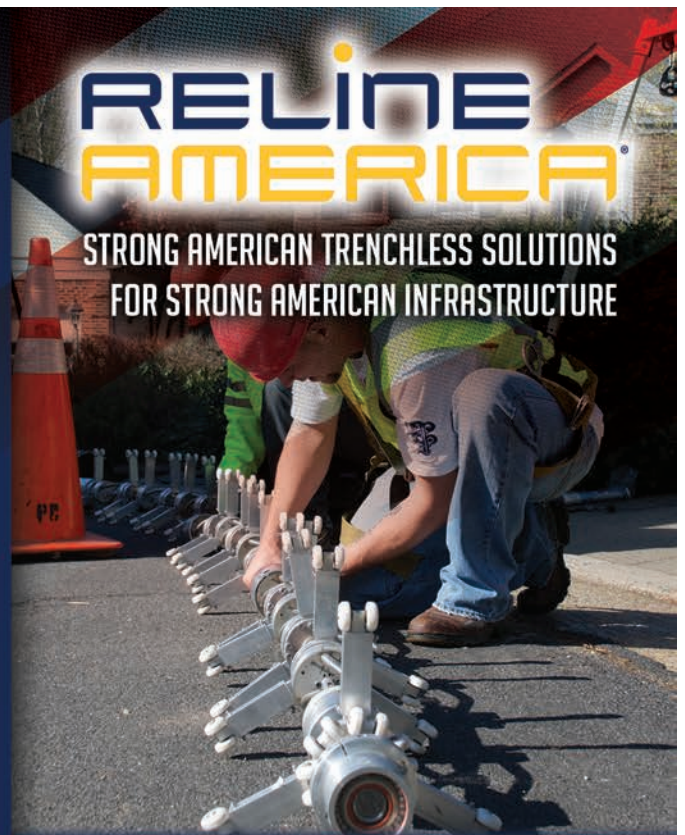
MANUFACTURING SEWER CAMERAS SINCE 1981.

CONTRACTORS AND MUNICIPALITIES... COME GROW WITH US

- ✓ Fast-Turn Order Fulfillment
- ✓ State-of-the-Art Training Facility
- ✓ Liner & Equipment Manufactured in the USA
- ✓ On-site Installation Assistance
- ✓ 24/7 Customer Service & Technical Support
- ✓ Marketing Support
- ✓ Engineering & Project Consulting

Our environmentally friendly trenchless solution provides a 50 Year + life cycle, reduced community impact with no contaminated discharge

RELINER AMERICA
STRONG AMERICAN TRENCHLESS SOLUTIONS
FOR STRONG AMERICAN INFRASTRUCTURE



866.998.0808 · relineamerica.com



**“OUR SEWER
CLEANING PRODUCTIVITY
HAS IMPROVED
OVER 50%”**

FEATURES

- Automatic continuous filtering
- No filter change
- No back flushing after typical cleanout work
- No need for city water
- No need to stop work and drive to refill water tank
- Lower truck fuel use with less truck weight
- Minimal overall maintenance
- Low energy consumption
- High throughput rate
- Separate 240-gallon tank and pump for wash down

**“AND, WE FEEL 100% BETTER ABOUT
SAVING WATER AND THE ENVIRONMENT”**

The Recycler option for AllJetVac combination sewer cleaners eliminates the cost and time needed to refill water tanks. Instead, the AllJetVac vacuums water from the sewer line, puts it through a five-step filtering process and then re-uses the same water to jet sewer lines. It's a “Green That Works” advantage that increases productivity and saves millions of gallons of processed water each year.

REACH OUT AND DISCOVER MORE

www.Vacall.com / Recycler
800-382-8302

**RECYCLER
GREEN
THAT WORKS**



**VIDEO
SEE IT WORK**

**VACALL™
DRIVING INGENUITY**

CIPP Lining Methods and Projects

By Craig Mandli

HYDROEXCAVATION



COMET USA TPR

TPR rotating nozzles from **Comet USA** were developed for heavy-duty and extreme working conditions in the hydroexcavation market. They offer up to 5,800 psi and a max temperature of 212 degrees F. They include an anti-drip system, are lightweight but sturdy, and built with brass for increased wear resistance. They include a rubber cover for extra protection from accidental impact. The inlet is 1/4-inch FPT, with orifice options up to 10.0. They offer easy assembly for field maintenance, and repair kits are available for extended life and lower operating costs. 952/707-1894; www.cometpump.com.

DITCH WITCH PROSPECTOR NOZZLE

To help keep operators safe and productive on the job site, the **Ditch Witch Prospector Nozzle** boosts performance on hydroexcavation jobs. Operating at 3,000 psi, the nozzle efficiently cuts through a variety of soils while using less water for operation. Its rotating, 18-degree conical design provides optimal coverage and a cone-shaped cut, reducing damage to underground utility lines. Constructed with durable stainless steel housings and tungsten carbide wear surfaces, the nozzle is able to withstand harsh excavating environments while providing a long life. It is compatible with all Ditch Witch vacuum excavators and others on the market. 800/654-6481; www.ditchwitch.com.



FOREMOST RAPTORLOCK

The **RAPTORLOCK** system from **Foremost** makes the operation of a vacuum truck safer and more efficient. It allows easier operation of the hydrovac and provides a safer and faster method of emptying the debris tank. The system consists of three key components — a debris tank certified to be pressured to 10 psi, hydraulic components that allow the tank to be pressured up and the rear door to be locked remotely, and a fail-safe hydraulically actuated lock arrangement to secure the rear door. This technology is available to hydrovac owners and operators incorporating Rival Hydrovacs in their fleets, and will soon be available for other Foremost vacuum trucks. 403/295-5800; www.foremost.ca.



HI-VAC X-VAC X-13

The **X-Vac X-13** hydroexcavator from **Hi-Vac** has a 27-inch Hg high-capacity vacuum system; a 10 gpm at 2,500 psi triplex water pump; a top-loading 360-degree boom; polygraphite, rust-free water tanks; a power transfer with OMSI heavy-duty transfer case design; and a noise-deadening, heat-retaining enclosure that surrounds both the water system and the vacuum system. It can carry up to 23,000 pounds, and can transport and dump debris on site. 800/752-2400; www.hi-vac.com.



HYDRA-FLEX RIPSAB

The **Ripsaw** rotating turbo nozzle from **Hydra-Flex** blasts a 0-degree water stream at up to 3,200 psi while rotating at a high speed to provide an 18-degree cone of coverage. Its cone-shaped flow pattern is ideal for potholing applications. These heavy-duty, high-impact nozzles are constructed with stainless steel housings and tungsten carbide wear surfaces to withstand harsh environments and provide long life. Repair kits are available for extended life and lower operating costs. Select from traditional coating (blue) or upgrade to the heavy-duty coating (green), a formulation designed for use in extreme environments. Greater impingement allows users to complete jobs faster or use a smaller nozzle size while getting the same impact as nozzles with higher flow rates. 952/808-3640; www.hydrflexinc.com.



NOZZTEQ MONRO-JET

The **MONRO-JET** hydroexcavation nozzle from **NozZteq** combines the power of a solid-stream pencil jet with the large coverage of a fan jet. Its circular water jet motion generates tremendous power at modest gpm rates, allowing the operator to move faster whether hydroexcavating, surface cleaning or cleaning sewer lines. It can be used for other types of surface cleaning such as concrete, steel, castings and large surface areas including line removal from runways. It can be modified for internal pipe cleaning of sewers and pipes of all types. An orbital design increases performance at a lower gpm rate and pressures as high as 36,250 psi. 866/620-5915; www.nozzteq.com.

PICOTE SOLUTIONS TWISTER CONCRETE REMOVER

The **Twister Concrete Remover** from **Picote Solutions** is designed with an extra-thick front metal panel and large chunky carbides that eat through concrete and grout inside pipes. It is a practical and effective tool that saves time and money at the work site all without digging. It is available for 4-, 6- and 8-inch pipe sizes, and can be used with the Maxi Miller and Maxi Miller Power Plus. It is available in two models — with a steering axle and without. If the pipe is completely blocked, use the regular version, but if there is enough of a gap, simply add the steering axle to guide through the problem areas. 219/440-1404; www.picotesolutions.com.

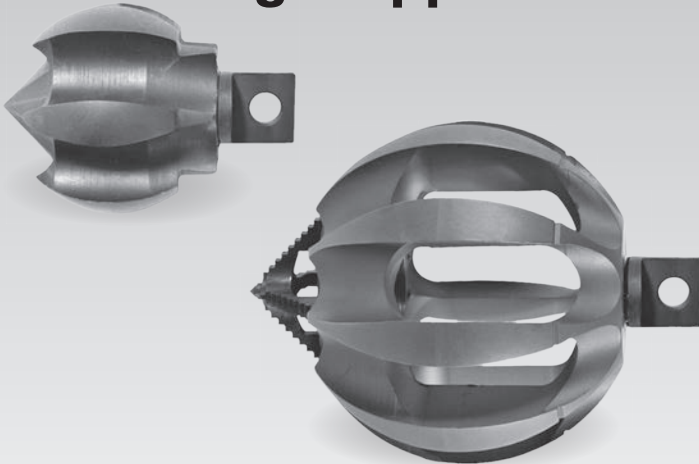


CONTINUED >>



**24 HOUR TURNAROUND - MIDWEST'S LARGEST FACTORY AUTHORIZED
REPAIR CENTER FOR GEN-EYE, GATORCAM & SEESNAKE**

ClogChopper™



- Multi-function cutting tools
- Six self-sharpening blades
- Risk-free pipe damage
- Maneuvers around tight bends
- Safe cleaning on metal, plastic and clay pipes
- Variety of sizes
- Connector options for most drain cleaning machines

CALL FOR PRICING!

NEW Gen-Eye Hot Spot™ Pipe Locator



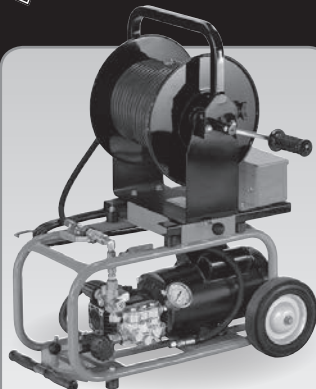
- Easy to read display – Icons lead you to your target and auto backlight lets you locate in dimly lit areas.
- Total field antenna array – Allows you locate from any direction.
- Line direction compass – Tells you the lay of the pipe.
- Industry's most rugged locator – Rated IP65, the industry's highest, it is dust and dirt proof and water resistant.
- Superior Battery Life – Batteries lasts twice as long as other brands.
- Expanded Frequencies – Locates two sonde frequencies, two power frequencies and four line frequencies.
- Upgradeable Software – Use the USB port to upgrade software in the field.

CALL FOR PRICING!



General J-2900
Basic Unit Machine Only

\$2745
FREE DELIVERY



General J-1450
Portable Jetter
Basic Unit Machine Only

\$1540
FREE DELIVERY



Mini-Rooter XP™
Basic Unit – No cable cutters
or power feed

\$580
FREE DELIVERY



General Speedroooter 92™
Basic Unit – No cable cutters
or power feed

\$1160
FREE DELIVERY

FREE FREIGHT ON ALL CAMERA KITS



RAMVAC BY SEWER EQUIPMENT HX-12

The HX-12 hydroexcavator from Ramvac by Sewer Equipment has a 12-yard debris tank and a temperature-controlled environmental chamber that contains the entire water system, including water tanks. A directional discharge system allows the operator to off-load debris back into the excavation site when finished, without the mess of dumping the tank. This system also allows operators to blow any obstructions out of the dig hose. It includes a long-range wireless remote, NEMA 4 electrical system, a 900,000 Btu water boiler and a three-stage cyclonic filtration system. The standard 4,400 cfm blower delivers fuel economy. It is available with a RamAir air excavation system touting a 185 cfm at 150 psi air compressor for when the operator can't risk adding water to the problem area. 877/735-4640; www.ram-vac.com.



RIVAL HYDROVAC T7

The T7 from Rival Hydrovac was engineered to offer a nimble unit that can haul a full load of most debris types down a road within the constraints of the law. It answers growing concerns regarding weight compliance, specifically in urban centers. The 30-foot 11-inch unit is equipped with an Allison automatic transmission. Its 7-yard debris capacity is spread evenly throughout the wheelbase of the unit, allowing for optimal weight distribution. It comes with poly saddle-style freshwater tanks, equalized both front-to-back and side-to-side; a Robuschi RB-DV 105 blower package, fully enclosed in a soundproof structure; a Pratosoli pressure pump; Dynablast diesel-fired, CSA-approved boiler; and a 20-foot top-mount boom with full rotation and a 6-foot hose. The boom is equipped with a full-port stainless steel actuated ball valve to allow for tank isolation when pressuring loads off or working remotely off the back-tank valves. 844/467-4825; www.rivalhydrovac.com.

SOIL SURGEON

The Soil Surgeon hydroexcavating tool fits any sewer combination truck equipped with a telescoping 6- or 8-inch boom. The tool has a 1-inch water connection. The operator controls water pressure and power through truck controls. It has a 6-foot Tuff Tube with handles to guide the unit down for potholing or side to side for trenching. Six jets boring inward cut the soil, while six boring outward bring the tube down. 949/363-1401; www.soilsurgeoninc.com.



STONEAGE HXR-300 ROTARY HYDRO-X

The HXR-300 Rotary Hydro-X nozzle from StoneAge uses an angled rotating jet pattern designed to decrease jet dwell time and reduce undercutting for effective work around utilities. It is fully rebuildable, allowing the operator to reduce cost of ownership by extending the life of the tool with minimal, low-cost maintenance. There are three jetting options available for a variety of applications: higher flow for harder surfaces, intermediate flow for general use, and lower flow for water savings. It handles pressures up to 5,000 psi, and flow rates from 3.5 to 10 gpm. 866/795-1586; www.stoneagetools.com.



SUPER PRODUCTS MUD DOG 1200

The Mud Dog 1200 12-yard-debris-capacity hydroexcavator from Super Products has a rear-mounted boom capable of a 19- to 27-foot reach, 335-degree rotation, 45-degree upward and 25-degree downward pivot. This range of boom motion allows crews to achieve greater work area access and deeper digging without halting production to reposition the trunk. Easy-to-use ejector plate unloading technology provides fast, thorough and safe debris removal. A tilt-unloading feature ensures liquids in the debris tank are cleared quickly and efficiently even when unloading in an up-slope/nose-down position. Options include the Acculevel load sensor system for precise debris tank level measurement. 800/837-9711; www.superproductslc.com.

SUTTNER AMERICA TURBO NOZZLE

Turbo nozzles from Suttner America are available with 1/2-inch inlets. They are made of high-quality, durable brass to withstand harsh environments. The 1/2-inch inlet eliminates the need for additional fittings and decreases the possibility of leaking. The stainless steel version provides improved materials (tungsten carbide seat and PEEK rotor) that extend the life of the nozzle. They offer flow ratings up to 40 gpm and pressure ratings up to 8,700 psi. Repair kits and protective covers are available. 800/831-0660; www.suttner.com.



TORNADO GLOBAL HYDROVACS F3 ECO

The F3 ECO from Tornado Global Hydrovacs holds 12 cubic yards of mud and more than 1,700 gallons of freshwater. This unit is more than 2,000 pounds lighter than the company's older models and can carry up to 10,000 pounds more payload in the debris tank, with reduced fuel consumption. The boom has a 342-degree rotation and a 26-foot reach. All critical components are housed in an insulated and heated aluminum van body. Because of its curved, sloped floor, operators do not need to hoist the tank to empty it. 877/340-8141; www.tghl.ca.

CONTINUED >>



“I trust RootX[®] because it works.”

Steve Cijka, Chief Operator, Town of Brandon, VT

In Brandon, Vermont — where Steve Cijka is responsible for preventing root damage to the town’s sewer lines — a lot of the pipes were laid in the 1930s and are easy prey for the roots of Brandon’s many sugar maples. Until they started using RootX[®], Steve and his crews used a root cutting machine and the slow going made for a lot of unpleasant work in the 20-degree Brandon winters. Since he switched to RootX[®], Steve reports that he sees the evidence of RootX[®] working in real time, killing roots while not damaging the town’s beloved trees.



*Vermont Sugar Maple
[acer saccharum]*



**THE RIGHT SOLUTION.
RIGHT NOW.**

- EPA-accepted, proven root-killing solution
- Easily applied by sewer crews with your existing equipment— no waiting for contractors
- Cost effective and guaranteed to work up to 36 months.*

Eliminate SSOs today! Visit www.RootX.com, or talk to your RootX[®] representative at 1-800-844-4974.



*visit www.rootx.com/municipalities/guarantee for details.



WESTECH VAC SYSTEMS WOLF

The **Wolf** noncode certified hydro-vac truck from **Westech Vac Systems** is ideal for customers working in extreme conditions. The debris body is positioned on the optimal spot of the chassis to ensure the payload is proportionately distributed across all axles simultaneously, maximizing legal payload for customers and improving operational efficiency. The side-mounted water tanks reduce the weight by more than 40 percent, lowering the overall cost of the truck. The 1,500-gallon capacity ensures ample water storage capacity for large or remote jobs. A top-mounted no-touch water fill system is easily accessible from the passenger side of the vehicle. The debris body is lifted using a telescoping, dual-acting hydraulic cylinder capable of 36,000 pounds of force. When fully extended, the debris body exceeds a 45-degree dump angle for fast and efficient off-loading. To help the off-loading process, a heavy-duty, hydraulically powered tank vibrator is mounted to the belly of the debris body. A standard splash shield has been fitted to the rear of the unit to direct the off-loading debris. 780/955-3030; www.westechvac.com.

The **Wolf** noncode certified hydro-vac truck from **Westech Vac Systems** is ideal for customers working in extreme conditions. The debris body is positioned on the optimal spot of the chassis to ensure the payload is proportionately distributed across all axles simultaneously, maximizing legal payload for customers and improving operational efficiency. The side-mounted water tanks reduce the weight by more than 40 percent, lowering the overall cost of the truck. The 1,500-gallon capacity ensures ample water storage capacity for large or remote jobs. A top-mounted no-touch water fill system is easily accessible from the passenger side of the vehicle. The debris body is lifted using a telescoping, dual-acting hydraulic cylinder capable of 36,000 pounds of force. When fully extended, the debris body exceeds a 45-degree dump angle for fast and efficient off-loading. To help the off-loading process, a heavy-duty, hydraulically powered tank vibrator is mounted to the belly of the debris body. A standard splash shield has been fitted to the rear of the unit to direct the off-loading debris. 780/955-3030; www.westechvac.com.

VAC-CON XX-CAVATOR

The **XX-Cavator** from **Vac-Con** can be a viable, valuable and efficient method to increase productivity in a CIPP operation. Its hydroexcavation capabilities can be used to find existing utilities to avoid, and can be used to find the damaged pipe needing to be repaired. The combination of low-volume, high-pressure water and high-power vacuum allows the crew to surgically expose the work area. A rear-mounted Power Flex boom can increase reach with an articulating elbow, saving time and money. In congested urban areas, it can be parked several hundred feet away from the job site while providing the power to remove materials with accuracy and gain access to pipe needing repair. 904/284-4200; www.vac-con.com.



VACALL ALLEXCAVATE

Vacall AllExcavate hydroexcavators include AllSmartFlow smart controls that help to conserve water during high-performance jet/vac digging around utilities and waterlines or cleaning frac tanks and vessels. Single-engine efficiency helps conserve fuel and reduce emissions. It has a high-pressure water system with rheostat control to vary water volume and capacity output. A heated compartment enclosing the water system protects components against freezing. Its water tanks are made of high-quality aluminum for extra strength. Large, galvanized steel debris tanks are also available. A single control is used to open, close and lock the tailgate. It has double-cyclone filtration with a simplified design to reduce maintenance, extend performance and increase working life. Its rear-mounted boom front-loads debris. It is available with a cold weather package. 800/382-8302; www.vacall.com.

A heated compartment enclosing the water system protects components against freezing. Its water tanks are made of high-quality aluminum for extra strength. Large, galvanized steel debris tanks are also available. A single control is used to open, close and lock the tailgate. It has double-cyclone filtration with a simplified design to reduce maintenance, extend performance and increase working life. Its rear-mounted boom front-loads debris. It is available with a cold weather package. 800/382-8302; www.vacall.com.

VACTOR MANUFACTURING PARADIGM

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



VECTOR TECHNOLOGIES MUDSLINGER

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



REINSTATEMENT CUTTER

CUES TV/CUTTER INSPECTION TRUCK

Made to withstand the most severe conditions, and ergonomically designed for comfort and efficiency, **CUES** truck-mounted systems can include TV inspection equipment for sewer/storm/potable waterlines, mainline joint or lateral sealing and lateral reinstatement cutters for the relining industry. They are available with Schwalm self-propelled cutters for 6- to 12-inch lines or 8- to 24-inch lines, or **CUES Kangaroo Cutters**, which include full capabilities for reinstating lateral services, removal of protruding taps and brush-finishing existing cuts. 800/327-7791; www.cuesinc.com.



CONTINUED >>



weftec®
the water quality event™

Booth #7535



ORPHEUS 2.0 HD®
True High-Definition Pipeline
Inspection Camera

Look closer.

Affordable, cutting-edge inspection tools,
manufactured to the highest quality standards since 1957.

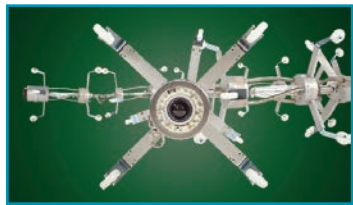
(800)-656-4225 | www.rapidview.com | Past Proven. Future Ready.



RELINING AND REHABILITATION SYSTEMS

ACE DURAFLO LEADSMART LEAD PROTECTION PLAN

The **LeadSmart Lead Protection Plan** from **ACE DuraFlo** entails certified LeadSmart installers providing on-site water testing for lead in drinking water, education to identify sources of lead in customers' piping systems and training to apply the ePIPE barrier coating to bring the property's drinking water into compliance with U.S. Environmental Protection Agency guidelines for lead. Upon compliance, customers receive a LeadSmart Certificate of Compliance, LeadSmart decal, a listing in the LeadSmart database and the protection from \$1 million errors and omissions insurance. 800/359-6369; www.aceduraflo.com.



ARIES INDUSTRIES ANACONDA UV CURING SYSTEM

The **Anaconda UV Curing System** from **Aries Industries** provides consistent lining installation, with one-third less curing time than steam-cured processes. CCTV inspection before and during the cure allows any sags and wrinkles to be corrected. UV curing requires less equipment, less setup and smaller crews, which reduces service disruptions. No hot-water usage eliminates the steam truck for less fuel consumption. Lingering odor and downstream contamination are prevented. Portable UV-curing units are available for 6- to 12-inch-diameter pipe, or a vehicle-mounted system is available for 6- to 60-inch-diameter pipe. 800/234-7205; www.ariesindustries.com.

AVANTI INTERNATIONAL AV-100

AV-100 acrylamide from **Avanti International** is a chemically reactive gel that has similar viscosity to water. It can permeate anywhere water can travel and has adjustable cure times from five seconds to more than 10 hours. It can be used to rehabilitate and sustain sanitary collections systems by eliminating infiltration in manholes, sewer mainlines, joints, laterals, and before and after various forms of CIPP lining. After lining, the chemical grout can be used to reinstate laterals. It creates an effective, long-lasting water barrier while providing soil stabilization. 800/877-2570; www.avantigrout.com.



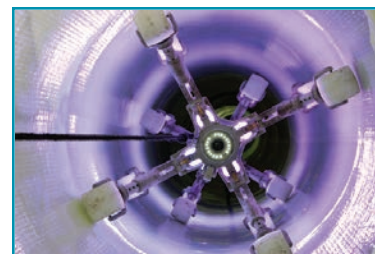
CRETEX SPECIALTY PRODUCTS HYDRATITE

HydraTite internal joint seal from **Cretex Specialty Products** is a mechanical, trenchless remediation for leaking pipe joints consisting of a rubber seal that spans the joint and is held in place by stainless steel retaining bands on either side of the joint. The retaining bands are hydraulically expanded and locked in place using a wedge lock design, which forms an airtight seal around the joint, eliminating all possibilities of infiltration or exfiltration. These seals can be custom fitted into irregular-shaped conduits and may be used as end seals on CIPP projects. The system is a recognized method of joint repair by AWWA manual M28, and has been widely accepted and approved by engineers, municipalities and DOTs. It has a 50-year design life, does not require excavation and has a low profile that ensures minimal flow loss. 800/345-3764; www.cretexseals.com.



FORMADRAIN DURAPOX

DURAPOX epoxy resin from **Formadrain** has a two-month open time, yet can be fully cured within 90 minutes. This means lining technicians don't need to worry about wet-out conditions, schedule changes or how long the install takes. The company can even do the wet-out in its shop and ship the liner ready to install. The steam-cured pull-in-place lining system can be used for lining laterals, spot repairs, industrial process pipes and lateral main connections. Pipe diameters range from 2 to 48 inches. 888/337-6764; www.formadrain.com.



INLINER TECHNOLOGIES STX

STX UV-light-cured liner from **Inliner Technologies** combines a woven fiberglass tube with a light-cured resin to produce a high-strength product, resulting in a thinner wall design. CIPP from Inliner Technologies allows for the renewal of damaged underground pipes without excavation. Licensees are contracted by municipalities and manufacturing-based industrial facilities to renew storm, waste and process sewer piping that has been damaged by corrosion and/or structural deterioration. The product combines a nonwoven engineered tube or liner with an array of thermosetting resins determined by the pipeline problem and surrounding environment. The technology can span pipe from 4 to 120 inches in diameter; renew pipes with bends, diameter changes or noncircular geometries; and be used in gravity and pressure applications. 812/723-0704; www.inliner.com.

CONTINUED >>

SOUTHLAND TOOL MFG. INC.

Building Innovative Tools for Municipalities



SOLUTIONS TO SEWER CLEANING THROUGH: CONCEPT • DESIGN • PRODUCTION



Manhole Tools • Debris Baskets • Vac-Traps • Root Saws • Calcium Cutters • Sewer Rods
Handy Clams • Nozzle Extensions • Deep Vac Tube Holder • Grabbers Claws and Hooks
Diamond Tap Cutters • Fiberglass Poles • Hydraulic Cutters • Top Manhole Rollers • Sewer Spoons
Continuous Rod • Carbide Saws • Vacuum Coupling • Reducers • Hydro Excavation



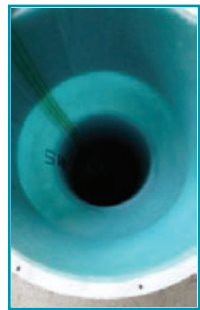
1430 N. Hundley St
Anaheim, CA 92806

ph: 714.632.8198
fax: 714.632.8228

YouTube
www.SouthlandTool.com

LMK TECHNOLOGIES T-LINER

The T-Liner from LMK Technologies is a one-piece homogenous main and lateral CIPP connection liner that is ASTM F2561 compliant. It has a uniform wall thickness and incorporates compressible lining material at the upstream and downstream ends, creating a smooth, tapered transition to the host pipe. Both the mainline and lateral sections are formed as a structural cylinder that renews 18 inches and 360 degrees of the mainline, and extends up the lateral pipe as one continuous lining. T-Liner with Insignia compression gasket sealing technology provides a verifiable nonleaking system. These compression gaskets are embedded between the host pipe and the T-Liner and are compatible with all pipe types, including polyethylene. 815/433-1275; www.lmktechnologies.com.



MAXLINER USA FLEX 4D

FLEX 4D from MaxLiner USA can be used for lining 4- to 6-inch transitions and around multiple bends up to 90 degrees. This needle-punched PE felt liner offers a flexible PU coating and specially designed stitched seam, which finishes with smooth radial expansion and minimal wrinkling in bends. It can be inverted or pulled-in-place and provides a minimum installed thickness of 3 mm in 6-inch pipe. This eliminates the waste and worry of the transition location and diameter change. It is the latest addition to a suite of comprehensive, installer-friendly solutions designed for optimal performance based on in-the-field requirements. 877/426-5948; www.maxlinerusa.com.

NU FLOW TECHNOLOGIES NU DRAIN

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



PERMA-LINER INDUSTRIES PERMA-PATCH

The Perma-Patch system from Perma-Liner Industries can be used to rehabilitate a 2- or 4-foot pipeline section with a local spot repair solution. It uses a fiberglass mat with 100 percent solids epoxy resins, creating a structural repair with a minimum life span of 50 years. The system is sold in a complete kit, so there is no measuring or waste. It is designed for 3- to 24-inch-diameter pipelines with cracks, holes and separation in joints. The Perma-Patch repair is inserted into the damaged pipe using an inflatable bladder, pushrod or pull cable. It is centered over the damaged pipe section and pressed tight against the host pipe area, creating a structural new pipe. 866/336-2568; www.perma-liner.com.

PIPELINE RENEWAL TECHNOLOGIES QUICK-LOCK

For stand-alone point repair, or for prelining under high infiltration, the Quick-Lock sleeve from Pipeline Renewal Technologies offers a rapid, easy-to-install and economical way to repair failing pipe. It restores the host pipe's strength with heavy-gauge 316L stainless steel, and seals out infiltration with a single-piece vulcanized EPDM rubber gasket. Suitable for sewer, water and industrial applications, a sleeve installs in minutes with minimal equipment and overhead. It is positioned inside the host pipe on a wheeled flow-through packer pushed by any standard CCTV crawler. Once in position, the packer expands the sleeve against the pipe wall to structurally reinforce it and stop infiltration. They are available in diameters ranging 6 to 28 inches, and in lengths of 16 and 20 inches. Multiple sleeves can be interleaved to perform longer repairs. 866/936-8476; www.pipeliner.com.



QUIK-LINING SYSTEMS CALIBRATION ROLLER

The Quik Lining Calibration Roller from Quik-Lining Systems provides the CIPP lateral lining installer with a tool to precisely provide a consistent thickness throughout the entire length of the liner. It will calibrate any thickness from a diameter of 2 to 12 inches and provides fast wet-out on the job site. Coupled with a vacuum pump, the roller will provide a completely wetted-out liner on a single pass. 605/695-6778; www.quiklining.com.

CONTINUED >>

ALLAN J. COLEMAN

SINCE 1905

Call us today!
773-728-2400

5725 North Ravenswood Avenue • Chicago, IL 60660 • info@allanjcoleman.com • www.allanjcoleman.com

Turn ANY push camera into a Jetter Camera with the JetCam Adapter.



CPI Products Camera Skids

The Universal Roller Skid

The Universal Roller Skid allows you to use your push camera in ways that were not previously possible.

- For 6" - 18" pipelines.
- Keeps camera centered.
- Maneuvers through 90° corners.
- Increases depth range.
- Improves vision & lighting.
- Faster inspection.
- Protects push camera.

The Mini Roller Skid

- For 4" - 6" pipelines.
- Maneuvers through corners.
- Great with cast iron pipes.
- Improves vision.

Warthog® Nozzles



Repair Center for: RIDGID SeeSnake, Gen-Eye, Radiodetection, Electric Eel, Vision Technology & Insight Vision Cameras Fast Turnaround Time

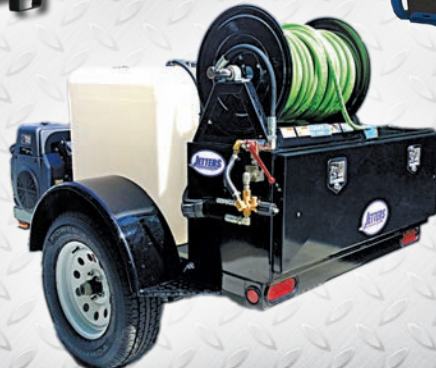


Eagle 200
200 gallon, 12 gpm, 3000 psi

Mountable-Skid
9 gpm, 4000 psi



Brute 150
150 gallon, 9 gpm, 4000 psi



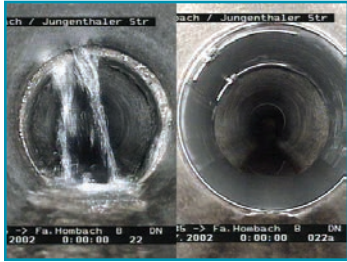
Portable-Cart
9 gpm, 4000 psi



Products
Manufactured
By



OLDEST NAME IN THE BUSINESS
— Over 100 YEARS OLD —



RAUSCHUSA QUICKLOCK POINT REPAIR

QuickLock Point Repair from RauschUSA is a permanent no-dig trenchless pipeline rehabilitation installation that includes a 316L stainless steel sleeve encased in an EPDM rubber gasket that is mechanically compressed against the inner pipe wall and permanently locked in place by two locking gear mechanisms. No chemicals or resins are used, so there is no cure time. It meets ASTM Standard F3110-14 and is NSF61 certified for use in potable water. Applications include repairing leaking or offset joints, fixing cracks and holes, preventing root intrusion, and closing unused laterals. It augments the structural strength of the pipe and is a permanent and reliable repair. The installation withstands and passes internal pressure tests. Since there are no chemicals involved, it can be installed with flow. It can be used in pipes from 6 to 32 inches in diameter. 717/709-1005; www.rauschusa.com.



SEALING SYSTEMS FLEX-SEAL UTILITY SEALANT

Flex-Seal Utility Sealant from Sealing Systems is a plural-component aromatic urethane with 800 percent elongation and a tensile strength of 3,200 psi. It is designed to prevent inflow and infiltration, and to provide corrosion protection at the grade adjustment ring section or joint section. It provides an excellent seal and will pass a vacuum test according to ASTM standards. The internal seal is manually applied using a paintbrush and the kit is designed to cover 12 vertical inches on a 27-inch-diameter manhole. 800/478-2054; www.ssisealingsystems.com.

THE STRONG COMPANY STRONG-SEAL GEOPOLYMER

Strong-Seal Geopolymer from The Strong Company is a cost-effective, specially formulated, fiber-reinforced mortar that is a sustainable solution for structural fatigue, infiltration and corrosion in stormwater pipes and manholes. Made from recycled industrial byproducts, it is centrifugally cast using the Strong-Seal Systems mixer, pump and spinner. It may also be sprayed manually or may be applied to manholes using the Spraymate 35-D or Spraymate 35-C. It has undergone extensive research and development and independent laboratory testing, making it a solution for stormwater infrastructure and manhole rehabilitation. 870/535-7617; www.strongseal.com.



SAFETY EQUIPMENT

HAMMERHEAD TRENCHLESS HYDROGUIDE HG1200

The HydroGuide HG1200 winch from HammerHead Trenchless is designed to be more efficient and easy to use in pipe bursting, sliplining or slitting applications.



It has a self-deploying hydraulic downrigger, improved performance and additional safety features. It makes setup easy with its hydraulic downrigger. With the touch of a button, users are able to automatically deploy the boom down-hole and can fine-tune the depth up to 18 feet without having to jack up the machine. With the hydraulic boom, setup and teardown take just minutes. Precision controls allow the user to adjust the boom to any depth, and also have total control of the line speed and pressure. Pull force is also adjustable. 800/331-6653; www.hammerheadtrenchless.com.

TST SWEDEN HD SERIES

The HD – Heavy Demolition Series of protective clothing from TST Sweden AB has a durable outer material, TECHSTEEL, which is 50 percent stronger against abrasion and tearing compared with the outer material that it replaces. It incorporates Vectran, a high-performance multifilament fiber spun from liquid crystal polymer. It forms the base and then different methods are used to treat and prepare the fabric. The collection includes a jacket, trousers and gaiters, and broadens the company's waterjet protection range of clothing. It offers certified protection against pin/single nozzles of up to 29,000 psi water pressure and for 43,500 psi rotating nozzles. www.tst-sweden.com. c



Come In We're
OPEN
www.cleaner.com

Turn Sewer Data Into Insight.

With more data about sewer condition coming from an expanding array of technologies, depend on WinCan to gain critical insights, share them easily online, and make maintenance and rehab decisions that maximize ROI.



WinCan

(877) 626-8386
www.wincan.com

Your **TRUSTED** Lateral Lining Manufacturer!

Drain, Waste & Vent Rehabilitation

Quik Coating Systems is pleased to announce their **NEW AIPP (Applied In Place Pipe)** rehabilitation system for DWV piping.

- » 1 1/2" through 4" pipe
- » Fully structural repair
- » Resin applications cure in 15 to 20 seconds
- » Applied in layers to required thickness
- » Reusable hoses and brushes
- » No licensing fees



CONTACT US FOR MORE INFORMATION // 605-695-6778

Quik-Lining Systems

WWW.QUIKLINING.COM
E-MAIL // JOHN@QUIKLINING.COM

RAT OUT YOUR ROOT PROBLEMS

Root Rat nozzles are uniquely designed to make short work of big sewer line headaches – chewing up roots and encrustations in all kinds of pipe. Interchangeable heads use the chain rotor for major obstructions and the cable rotor for less aggressive problems.

Simplified service means extra uptime.



3/8", 1/2", 1" nozzles come in kit form.



SEE IT IN ACTION

Call 330.874.4300 to learn more about the nozzle you've been waiting for



Patented • Made in USA • www.rootrat.net

CIPP Lining Methods and Projects

By Craig Mandli



COMBINATION TRUCK AND CIPP LINER USED TO REHAB FORCE MAIN

PROBLEM

The Allegheny Valley Joint Sewage Authority in Pennsylvania discovered a leaking 20-inch ductile iron and steel force main just upstream from their treatment plant. The fact that the force main crossed over a small creek and was suspended underneath a Norfolk Southern Railroad bridge made the problem more complex. To dig and replace the buried part of the failed line and replace the pipe suspended under the bridge would have significantly interfered with railroad operations, not to mention being extremely cost-prohibitive.

SOLUTION

Insight Pipe Contracting was contracted to reline the force main in order to avoid unnecessary digging and railroad interruption. Upon pre-inspection, the crew found scale buildup on the host pipe from years of use that would interfere with the lining operations. Insight Pipe employed a **GapVax MC2008** combination cleaner to efficiently and effectively descale and clean the host pipe. They then used a fiberglass-reinforced Premier-Pipe USA Tech Liner, which is able to comfortably withstand the force main's 45 psi operating pressure to rehabilitate the failing pipe. The pipe cleaning, installation and curing of the CIPP liner were all completed in the same day.

RESULT

Internal pipe seals were installed the following day and the force main was quickly put back into service. The quick response and solution helped avoid railroad disruptions and saved the authority close to \$1 million. 888/442-7829; www.gapvax.com.



POLYURETHANE LINER LETS CITY SAVE CULVERT

PROBLEM

The bottom of a 30-foot-long, 80- by 120-inch oval corrugated metal culvert running beneath Forest Lane in East Goshen Township, Pennsylvania, had rusted out. The road is a significant connector between three main suburban Philadelphia traffic routes. No one wanted to see it closed for a traditional dig-and-replace job. Township manager Rick Smith had to decide how to fix it. "Except for the bottom center section of the culvert, the rest was in excellent shape," Smith recalls. "Replacing it (all) seemed overkill."

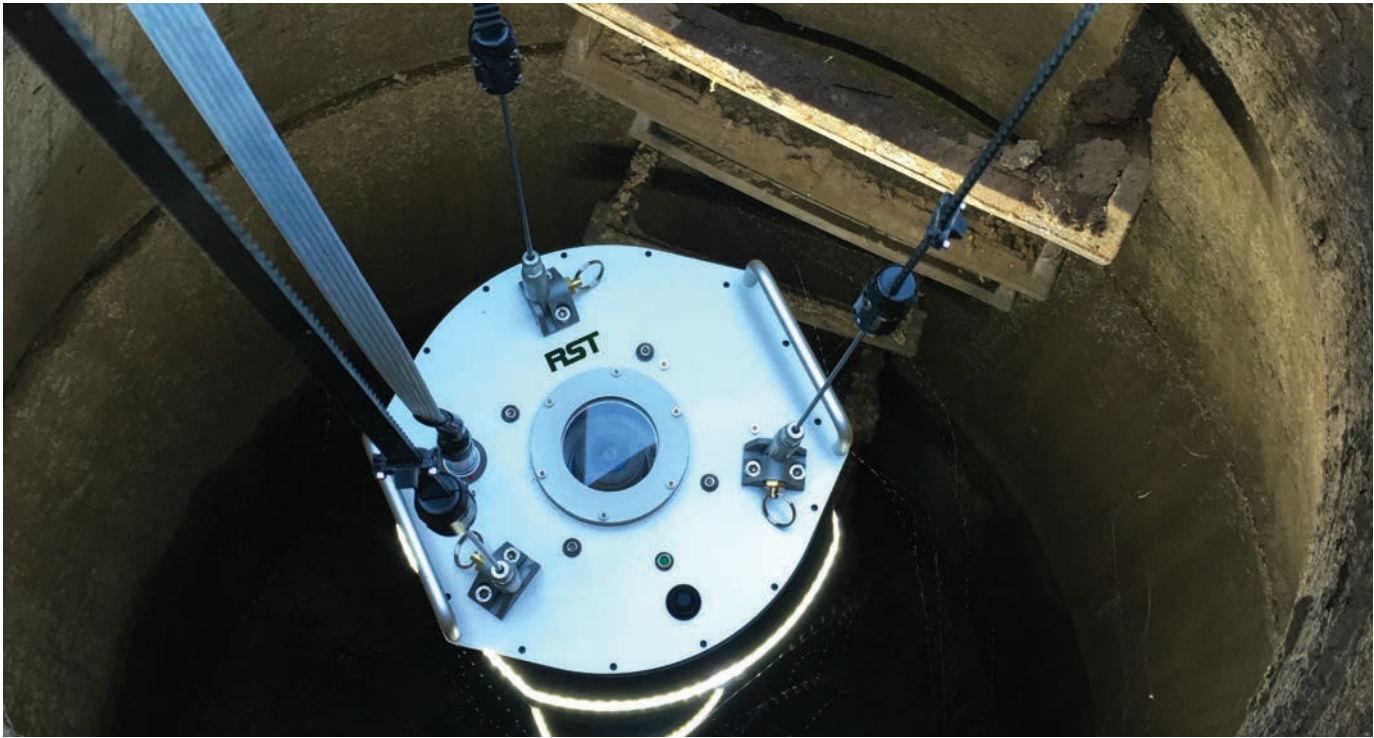
SOLUTION

Abel Recon bid \$66,000, nearly a third of the estimate for traditional methods. This included bypass pumping to temporarily relocate active stream flow, and the installation of 600 mils of **Sprayroq's Spraywall** structural polyurethane product. Groundwater pressure forcing soil through the missing pipe sections was eliminated with a cement waterstop mix, profiled to the host structure.

RESULT

East Goshen was pleased with the single-day setup and installation, which required only the placement of traffic cones, rather than road closures and detours. Simplified environmental permitting and engineering provided massive cost savings, while third-party-verified performance provided confidence that it was a long-term investment. 800/634-0504; www.sprayroq.com.

Superior Manhole Data < 60 Seconds!



The **RST HELIX** - Advanced Manhole Inspection System



The RST Helix is our latest innovation to increase efficiency and lower costs for municipalities and contractors.

This ground-breaking system can complete a scan in under a minute and can easily survey 50 or more manholes a day. Along with dramatic manpower savings, the RST Helix delivers an unprecedented level of detail to help you source inflow and infiltration, identify hydrogen sulfide related corrosion, and head off dangerous structural failures.

The Helix can be deployed from a van, pickup, inspection vehicle as well as ATV or tripod for off road manhole surveys.

SEE OUR NEW RST HELIX VIDEO

www.RSTechserv.com/helix

RS Technical Services Inc.
High Performance Pipeline Inspection Systems

Demonstrations/Sales: 800.767.1974

Working Well Under Pressure



Pressure Washers & Drain Jetting Equipment



Hot and Cold Trailer Models

- Up to 7000 psi
- Flows up to 40 gpm
- Powered Reels
- Diesel Powered Models



Skid and truck mount models up to 7000 psi



Portable Hot and Cold Water Diesel Powered Models



We will custom build to your specifications
www.camspray.com 800-648-5011

Professional-Grade Drain Cleaning Machines, Cables & Accessories



Drain Cleaning Machines

- > Heavy duty construction
- > The most powerful motor in the industry
- > Quick and easy reel changeover
- > A one year rock-solid warranty

Cables

- > Fabricated from high quality wire
- > Most ends & couplings available
- > All sizes and lengths
- > Innercore available



COAST MANUFACTURING

www.coastmanufacturing.com
541.684.0743

The Soil Surgeon



Most Powerful Hydro-Excavating Tool On The Market

- Fits all truck manufacture designs
- Quick Connects To 8" or 6" Boom
- You Control Water Flow, Pressure & Power With the Truck's Controls
- Designed To Cut Through All Types Of Soil

Model X1

- Features Include:
- 6' Aluminum Tube
 - Handles for easy maneuvering
 - Water ring tips boring inward to cut the soil & outward to get tube down
 - Bumpers on bottom to protect tips & lines

Patent #6,484,422B1

Call for a FREE Video and Information of Where Your Nearest Distributor is Located
949-363-1401 Fax 714-434-9998 www.soilsurgeoninc.com

KEN-WAY Beats the Others DAY-IN • DAY-OUT

And they have for over 50 years

KEN-WAY CABLE CLEANERS

for cleaning sewer, drain or process lines from one to ten inches, up to 75 feet with the Junior and up to a full length of 300 feet with the Model 400



KEN-WAY Exclusive Built Cables

- 3/8"
- 13/32"
- 1/2"
- 3/4"
- 11/16"
- 5/8"
- 5/16"
- 1/4"

- Heat Treated
- Inner-Core or Non-Core
- Fit Most Other Brands
- Interchangeable with Most Brands
- Coupling or Blade Holding Types



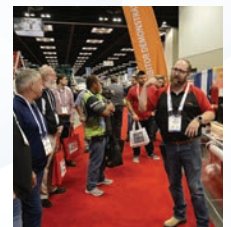
Leasing plans available. Call for details.
1-800-533-0551

930 ROBERTS ROAD, SPARTA, WI 54656
www.ken-way.com • E-mail: info@ken-way.com



THE BEST EVENTS AT THE INDUSTRY EVENT OF THE YEAR

Who will be at the Industry Event of the Year? Everybody. You can meet them all at events like the Spartan Tool Kick Off Party and the Industry Appreciation Party sponsored by COLE Publishing. Get to know industry leaders. Meet business owners. Hang with old friends. Make new ones. WWETT Show 2018 is the place to be - make your plans to be a part of it.



WHY SHOULD YOU ATTEND?

- ✓ **Explore the Marketplace** for tools and resources you need for your business
- ✓ **Education** taught by some of the best and brightest in the industry
- ✓ **Events** to network with your peers - or just kick back with friends.

wwett[™]18

EDUCATION: FEBRUARY 21-23

EXHIBITS: FEBRUARY 22-24

INDIANA CONVENTION CENTER

REGISTER TODAY AT WWW.WWETTSHOW.COM



PRODUCT SPOTLIGHT

Liner solves tricky bends in lateral diameter transitions

By Craig Mandli

Relining laterals can be tricky, especially when dealing with transitions in pipe size. Trelleborg Pipe Seals meets those challenges head-on with the DrainPlus 2.0 liner.

The silicone-coated CIPP liner is designed for rehabilitation of pipes with variations in internal diameter and bends. It has the ability to negotiate multiple 90-degree bends and overcome two changes in internal diameter. For example, the 4-inch liner has the ability to expand to 6 inches while still maintaining the required minimum 3 mm wall thickness without any fins or wrinkles.

“Bridging those transitions has been a common problem in the industry for a long time,” says Tim Sparrow, head of North American sales for Trelleborg. “Our silicone coating creates a bond all the way down the pipe.”

Because of its versatility, the second-generation liner product can help reduce time, material and effort during installation, saving the relining company money in the process. It’s a fit for drain cleaners and residential plumbers who take on the often unenviable task of relining lateral connections. The silicone coating provides high temperature resistance, and when used in combination with a range of epoxy resins can be steam cured without the need of calibration hoses. This allows fast processing time so the installer can achieve maximum productivity while ensuring a high-quality install with ideal design wall thickness.



“We talked to so many customers who said there was a big gap in the industry for this sort of product,” says Sparrow. “We feel that this technology can be a catchall for a lot of relining issues.”

The liner can be used on pipe and sewer lines from 2 3/4 to 10 inches, and is applicable for vertical and horizontal installs. It is also shape- and pressure-resistant during inversion, avoiding collapse. The feedback received from technicians using the liner in the field has been positive.

“It’s been only positives so far,” says Sparrow. “We’ve been very pleased with the response. It tells us this product is filling a need in the industry.”

Trelleborg offers an on-site training program specifically aimed at teaching lining companies how to install DrainPlus 2.0. According to Sparrow, once technicians are trained, installs are typically much more efficient than previous lateral lining methods.

“We feel that once a lining company uses this product, they’ll never go back to their old ways again,” he says. “It sets a new bar for lateral lining.” 800/626-2180; www.trelleborg.com.



1

1 ENVIROSIGHT REFERENCE GUIDE TO SEWER INSPECTION AND MAINTENANCE

Envirosight’s free guide to sewer inspection and maintenance serves as an introduction for industry newcomers. *Sewer Maintenance 101: The Quick and the Dirty Guide to Sewer Inspection and Upkeep* provides an overview of how a sewer system functions, how it’s inspected and how it’s maintained. It can serve as a tool for industry orientation or provide a refresher to employees already in the industry. 866-936-8476; www.envirosight.com.



2

2 GENERAL PIPE CLEANERS FLEXICORE CLOSET AUGERS

Flexicore closet augers from General Pipe Cleaners are made of two layers of tempered spring steel coiled tightly over a core of 49-strand wire rope for kink resistance. They have 3 feet of cable telescoped inside the guide tube, providing additional cable when needed. The optional down head follows the contours of the bowl and springs through sharply angled passages while protecting inner walls from chipping or breaking. Three vent holes let the auger dry between jobs. 800/245-6200; www.drainbrain.com.

YOUR SOURCE FOR RIDGID®



CS6x Digital Recording Monitor
with Wi-Fi



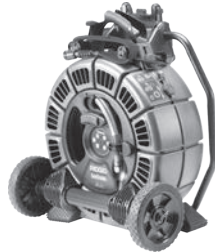
LT1000 Laptop Interface System



SeeSnake® Compact 2 Camera Reel



CS65x Digital Reporting Monitor
with Wi-Fi



SeeSnake® MAX rM200 Camera System



DVPak



microDrain Reel

CENTRAL OKLAHOMA **Winnelson** COMPANY

8% ONE YEAR FINANCING AVAILABLE!
Longer lease rates also available. Call Keith for details.

BUYING A SEESNAKE?

**CALL US FOR
GREAT PRICING &
FREE SHIPPING!**

**WE
WILL NOT BE
UNDERSOLD**

- Call Evenings and Weekends -

Keith: 405-602-9155

CALL TOLL FREE: 888-947-8761

5037 NW 10th
Oklahoma City, OK 73127

www.centralwinnelson.com



3



4

3 COXREELS DEF HOSE REELS

The diesel exhaust fluid hose reels from COXREELS are built on all-steel construction SH and T series reels. They are equipped with a stainless steel external full-flow swivel and chemical-resistant Viton seals to provide a DEF dispensing solution available with a Goodyear DEF hose. The swivel is easy to access for seal maintenance and fast DEF dispenser hose installation. The reel systems can handle DEF hoses up to 75 feet of 3/4-inch hose I.D. The models are available in standard spring retraction and EZ-Coil controlled retraction systems. 800/269-7335; www.coxreels.com.

4 STONEAGE TOOLS AUTOPACKS

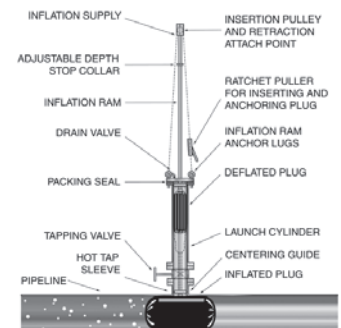
AutoPacks from StoneAge Tools are available for the ABX-3L and ABX-2L triple- and dual-lance tube cleaning systems. The self-contained automated equipment kits contain all the components and accessories needed to perform fully automated heat exchanger cleaning. Features include customized storage inserts to allow for quick visual inventory management and a job box to protect equipment, simplify transport and minimize setup time. 970/259-2869; www.stoneagetools.com.

Petersen® Pipe Plugging Systems



Pipe Plugs and Packers for all your Pressure, Chemical, and Temperature Requirements. Call us to quickly customize a pipe plug or plugging system for your specific application.

Economical Hot Tap Plugging Systems



weftec 2017
Booth 757

www.pipeplug.com

Petersen PRODUCTS COMPANY
Serving Professionals Since 1916

PHONE 800.769.4973 OR 262.692.2416
FAX 800.669.1434 OR 262.692.2418

InfoSense SL-RAT inspection standard released

The American Society for Testing Materials recently released a new standard based on InfoSense's Sewer Line Rapid Assessment Tool technology for inspecting gravity sewers. The standard F3220-17 provides a basis for municipal collections system operators, consulting engineers, and their associated contractors to work from when developing specifications for sewer cleaning and maintenance programs.

HOBAS Pipe USA infrastructure investments

HOBAS Pipe USA recently invested in a custom-manufactured water jet saw at its Houston plant to allow for more precise control of centrifugally cast, fiberglass-reinforced polymer mortar fittings. Cutting is done in a wet environment so no dust is generated as with past methods.



Armstrong Equipment announces new brand

Armstrong Equipment, based in Santa Fe Springs, California, announced that they are now a distributor for FOURSEVENS Flashlights. Founded in 2008, FOURSEVENS produces high-performance LED flashlights and also carries accessories and batteries.

HammerHead Trenchless name change

HammerHead Trenchless Equipment will now be referred to as HammerHead Trenchless to better summarize the full range of solutions offered to the industry.

Envirosight welcomes regional sales manager

Envirosight announced they hired Mike Putney as northeast regional sales manager. Putney has over 20 years' experience in sales and account management, including 10 with Supreme Corp., most recently as director of sales for the northeast.

Knipex Tools L.P. moves headquarters

Knipex Tools L.P. moved its headquarters to Buffalo Grove, Illinois, from its previous location in Arlington Heights. The new space is a renovated 53,200-square-foot combined office and warehouse facility.



The Plastics Pipe Institute Members and Projects of the Year Awards Program winners include, from left, Claude Labrecque of Soleno; David Nickelson of REHAU; Bryan Fletcher and Mike Whitehouse, both of ISCO Industries; Mike Perry of Southwire; and PPI President Tony Radoszewski.

Plastics Pipe Institute award winners announced

The Plastics Pipe Institute announced its winners for the Members and Projects of the Year Awards Program. Winners were chosen based on outstanding service contributions and exceptional achievements showcasing beneficial uses of plastics in pipe applications. In total, four projects and five individuals were honored.

Pipeline Renewal Technologies releases logbook

The Pipeline Renewal Technologies full-color logbook encourages and simplifies routine maintenance for sewer rehab cutters. It features checklists and sign-offs for the start and end of each working day, as well as weekly maintenance steps.

Subsite Electronics acquires R.S. Technical

Subsite Electronics announced the acquisition of the assets of R.S. Technical Services. The deal adds camera inspection capabilities to Subsite's line of underground awareness solutions. Operations will continue in Petaluma, California, and Mount Sterling, Kentucky, and RST products will continue to be available through the current RST dealer network.

WJTA-IMCA 2017 Conference and Expo

The 2017 WJTA-IMCA Conference and Expo will be held Oct. 25-27 in New Orleans at the Morial Convention Center. Organized by the WaterJet Technology Association-Industrial and Municipal Cleaning Association, the expo provides an academic conference, trade show and education programs.

NASSCO joins UESI as charter member

The National Association of Sewer Service Companies was named as a Charter Organizational Member of the Utility Engineering and Surveying Institute of the American Society of Civil Engineers. UESI's mission is to meet infrastructure challenges to reduce infrastructure project life cycle costs by 50 percent by 2025. **C**

MORE?!

More Stories at Cleaner.com/featured
See what's not in print!

WWW.CLEANER.COM

Workhorses to get you through any line this season.

We build our cable machines to tackle obstructions in 1 1/2" to 10" lines. Rugged and reliable, they all feature easy reel changes.

See the mobility and safety features we build in to our cable machines at [YouTube.com/videoMyTana](https://www.youtube.com/videoMyTana)



Every MyTana product includes **Factory Direct Support and Service** to help you with any problems or questions you have. Because solving problems is what our business and this industry is all about.

We have answers, advice and solutions.

Products are IN STOCK and ship factory direct to you.

We've got your back.

"How can we help you?"

Tools
Cable Parts
Fittings
Reels Support
Blades

MyTana

PROUDLY SERVING YOU FOR **60 YEARS** 1957 - 2017

Check out our **NEW WEB SITE** for more information about these products and all of our machines and tools!

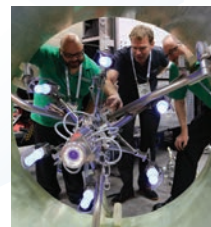
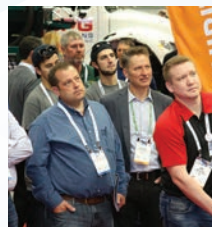
Help is always at your fingertips at www.MyTana.com and **1-866-948-7576**





BEST-IN-CLASS EDUCATION

Looking for professional development? The education sessions at WWETT Show 2018 are just what you need. 110 sessions over three days will cover a wide array of industry and business topics. You can choose certification classes, and new for 2018 - technical tours to area facilities. And be sure and look at the lists of available CEU credits. WWETT Show education - it's a great way to up your game.




wwettTM18
EDUCATION: FEBRUARY 21-23
EXHIBITS: FEBRUARY 22-24
INDIANA CONVENTION CENTER

WHY SHOULD YOU ATTEND?

- ✓ **Explore the Marketplace** for tools and resources you need for your business
- ✓ **Education** taught by some of the best and brightest in the industry
- ✓ **Events** to network with your peers - or just kick back with friends.

REGISTER TODAY AT WWW.WWETTSHOW.COM



BRING TRENCHLESS TECHNOLOGY INSIDE THE BUILDING!

Two Unique Systems: Rehabilitate Pressurized & Non-Pressurized Pipes



Nu Drain - CIPP Lining



Nu Line - Epoxy Barrier Coating

- ▶ Over 6,000 miles of inside infrastructure pipe renewed
- ▶ Restores all mechanical piping inside and outside
- ▶ Chiller, potable, gas, compressed air and drain
- ▶ Over 40 years of trusted technology
- ▶ Backed by over 300 licensees in 40 countries

2017 CONTRACTOR DAY


November 7th - 8th, 2017 | San Diego, CA

Nu Flow has the technologies to set your business apart from your competition. Join us for a two day demonstration of our dual piping rehabilitation technologies designed for inside the building.

RESERVE YOUR SPOT!


800-834-9597





Internal Pipe Coating System

- Sets in seconds, not hours or days like epoxy
- Coats from 100 mil to 300 mils in one pass
- Structural



Before After

▶ Watch A Video Of This Process

877-507-0861 • PipeTechUSA.com



12-Month 3% Inventory Financing Program

\$99/mo for first 3 Months



Introducing Water Cannon's End User Inventory Program!

Make 3 payments for \$99 followed by 9 equal payments to complete the 12-month term.

Benefits of our 12-Month 3% Interest Program

- Get the cleaning equipment solution you need now – pay for it over a 12-month period
- Conserve working capital
- Equipment also can be used for rental pools
- Simple application/approval process
- No documentation fee
- Suggested order: \$20K

For Terms and Conditions Go To **WaterCannon.com**
1.800.333.WASH (9274)

THE "ORIGINAL" LIQUID SMOKE



Turbo Fog M45:

- Versatile
- Light Weight
- Compact
- Creates Dense Smoke

TURBO·FOG
Since 1977

www.turbo-fog.com • 1-800-394-0678



Cua Claws

A Simple Solution for Slippery PVC Pipe -

The Right Wheels

We resurface all makes of steel transport wheels-Including IBAK

CALL JERRY AT 714-697-8697
www.cuaclaws.com

**Advertise
Advertise
Advertise
Advertise
SOLD**

Reach over 26,000 professionals each month and sell your equipment in the classified section.



COLE publishing
www.Cleaner.com

Extra! Extra!

Want More Stories?

Get more news,
more information,
more features with
Online Exclusives

Exclusive online content
for *Cleaner*

www.Cleaner.com/online_exclusives



T&T Tools, Inc.
800.521.6893

CALL for a FREE Catalog
 Many styles Available

Insulated Soil Probes (for locating)
 Heat-Treated Hooks (for covers, lids, etc)

www.mightyprobe.com

Superior[®]
SMOKE
 For SEWER TESTING

Superior Smoke Fluid Systems
 Smoke Candles • Smoke Blowers

MADE IN USA

Superior Smoke Testing
 The Most Cost Effective Method to Find Sources of Surface Inflow

SuperiorSignal.com/Cleaner

Over 30 years building quality equipment!

HotJetUSA[®]
OUR MOST VERSATILE JETTER!
 FULLY LOADED! PRICE INCLUDES DELIVERY!*

HOTJET II
 WITH PAYMENTS AS LOW AS **\$565.00**
*\$2,995^{MS} SALE PRICE WITH 20% DOWN O.A.C.

35 HP Vanguard Engine • 10GPM @ 4,000 PSI
 Cleans 2-12" Drains with Hot OR Cold Water
*Delivery to lower 48 States Only - CALL FOR DETAILS

1-800-213-3272
www.hotjetusa.com

DR DYNAMIC REPAIRS

We Repair:
 General Wire, Ratch, RIDGID, Hathorn Corp.
 Electric Eel, GatorCams, Vision Intruders
 and Vivax Inspection Cameras,
 Locators, Command Modules and Cables

New & Refurbished Inspection Equipment For Sale

Rental Equipment Available
 Daily & Weekly Rates

Ask About Our 48-Hr. Turn Around Time

INSPECTION CAMERAS ARE OUR ONLY BUSINESS!

973-478-0893

DYNAMIC REPAIRS
 40 Arnot St., Unit 20
 Lodi, NJ 07644
dynamicablerepairs@yahoo.com
www.dynamicrepairs.biz

Show us your Money Machine.

DYE TRACERS

Solutions for:

- Infiltration
- Septic Systems
- Cross Connection
- Leaks and more...

BRIGHT DYES
 Division of Kingscote Chemicals

NSF Certified to ANSISF 60

www.brightdyes.com • 1-800-394-0678

Cleaner

PRE-SHOW NEWS
 INVERSION OF FORTUNE

FIELD & OFFICE TECHNOLOGY

Do you have a go-to service vehicle or high-tech workhorse tool that conquers many jobsite challenges? Let us know about it at editor@cleanermag.com and we'll consider it in our feature.

OBLITERATE ROOTS

OBLITIROOT
 SEWER LINE
 FOAMING ROOT KILLER

Up to 3x the active ingredient

www.olvidium.com (877) 477-5338

Let Us Build Your **JETTER**

Diesel Propane Gas

AMERICAN JETTER.COM
866-944-3569

GET EMAIL NEWS ALERTS FOR **Cleaner**

Go to cleaner.com/alerts and get started today!

Down time is expensive.
 HAVE A SPARE CABLE?

AFTERMARKET CONNECTORS • CABLES

ALL cables and connectors are individually inspected and tested before shipment.

REASONABLE PRICES Seacon/Turck

OceanQuip LLC
ORCA TOUGH CABLES

504 738 7833 phone • 888 979 8195 fax
ruth.hoth@oceanquipconnectors.com
www.oceanquipconnectors.com

ERICKSON Tank & Pump

509.785.2955
 CALL FOR UPDATED LIST OF EQUIPMENT
WWW.ERICKSONTANK.COM

Masport[®]
 PUMPS & QUALITY COMPONENTS

Quincy, WA
 fax: 509.785.3770
sales@ericksonstank.com
 "TANKS" FOR YOUR BUSINESS!

CONFINED SPACE ENTRY PACKAGE ONLY **\$3,195**

- 4-Gas Air Monitor (3 Year Sensor Warranty)
- 7' Tripod
- 3-Way Fall Protection
- Work Winch
- Full Body Harness

Add a Blower with 15' of duct for only \$350!
 Add a 5 Minute Escape Respirator for only \$500!

TECH 800.362.0240
www.mtechcompany.com

classifieds

see photos in color at www.cleaner.com

BLOWERS

New Roots Blowers - Best price & in stock. Reconditioned exchange program. Volume discounts. Call Pat's Pump & Blower 800-359-7867 or email PatsPump@aol.com (C01)

Wanted: 16" HR42 Holmes blower for a 2004 Vactor 2110. The blower must be in good operating condition. Please email info to: tdonlon@standardequipment.com (C10)

BUSINESSES

www.RooterMan.com. Franchises available with low flat fee. New concept. Visit website or call **1-800-700-8062.** (CBM)

COMPUTER SOFTWARE

FreeServiceReminderSoftware.com, FreeServiceDispatchSoftware.com, FreeRouteManagementSoftware.com. (C10)

DRAIN/SEWER CLEANING EQUIPMENT

Used and rebuilt cable machines in stock: RIDGID K-7500, K-40, K-60, K-1500, Spartan #1064, #300, #100, Electric Eel model #C machines. The Cable Center: 800-257-7209. (CBM)

JET VACS



Vac-Con industrial machine mounted on a pre-owned 2006 Sterling cab and chassis. \$59,000. (Stock #8593C)

www.VacuumSalesInc.com
(888) VAC-UNIT (822-8648) CBM

Camel 200 combination trucks for sale. One is a 1990 unit mounted on a Ford LNT800 (53,000 miles). Other is a 1997 mounted on a Ford LT8513 (69,000 miles). Both low hours and fully operational. 10-yard dump body, PD blower and 80gpm Triplex pumps. Priced at \$50,000 and \$40,000, discount both to same buyer. Can provide more details or pics. Contact Jack at 614-419-4579 or jack@ca-botics.com (C10)

Submit your classified ad online!
www.cleaner.com/classifieds/place_ad

2007 Sterling Vactor 2100PD tandem-axle combination cleaning truck. Ex-city owned, well maintained, and equipped with California Carb Compliant DPF System. See details of this unit and other cleaning and CCTV inspection units at www.empireequip.com. Contact Craig at 714-639-8352. (CBM)

JETTERS-TRAILER



The Industry's Most Versatile Trailer Jetter Model# HJ2TA1030HW, tandem axle trailer, 35hp Vanguard 10gpm @ 3,850psi, 325-gallon water tank, 300' hose, General Pump. **Fully loaded!** List \$36,995. On sale for \$32,995.

800-213-3272
www.hotjetusa.com CBM



2008 O'Brien 7040-SC, 700-gallon tank, 500' 3/4" hose, rotating reel, Cummins diesel, 416 hours, Giant pump, 40gpm/2,000psi. Ready to work. \$22,000

Call 219-863-4414, IN
buschbrosinc@gmail.com C11

2006 Sewer Equipment of America 747-FR2000: 1,462.1 hours. New pump at 1,214 hours 40gpm/2,000psi. \$25,000. More info visit www.mahoneyequipment.com or call 636-282-4949 (C12)

4016 Harben: Reconditioned with 125 hours. (2) 300-gallon tanks, new 4-wheel trailer. Runs great. \$20,000. Call Mike at 765-427-7575. (C12)

Cleaner
AVERAGE MONTHLY
CIRCULATION
REACHES
26,460
READERS!

JETTERS-TRUCK



2002 Sterling L7500 Vactor Ram jetter truck, Model V6015, 76,000 miles. 6,725 hours on meter, 7,677 hours on vacuum meter. CAT 3126 7.2L L6 turbo diesel, auto. transmission. Single axle, 154" wheelbase. Approx. 300 ft. of hose.

Contact Matt
618-566-3003, IL C11

Jack Doheny Supplies Inc. offers a full range of late model combo units and DOT industrial vacuum loaders. Call us @1-800-3DOHENY. (CBM)

LOCATORS

Used RIDGID NaviTrack, Gen-Eye Model 100 and Goldak Model 4400. The Cable Center 800-257-7209. (CBM)

POSITIONS AVAILABLE

WANTED - CCTV Van Operator for Fall 2017 position. PACP-certification required. Multiple years of experience working with Aries systems is a major plus. Competitive pay offered. Contact info@uprubber.com or 906-786-0460 Extension 2. (C10)

Standard Pipe Services, located in Delaware and servicing the mid-Atlantic states, is looking for a qualified, experienced CIPP Superintendent. Successful candidates will be able to demonstrate at least 10 years of progressively increasing responsibility in planning and executing all aspects of CIPP work, including steam- and water-curing methods, for small- and large-diameter sanitary and storm sewer systems. Detailed resume and references required. Position is salaried and includes company vehicle and a generous benefit package. Please email resume to franki@standardpipeservices.com (C10)

GapVax, Inc., a nationally recognized manufacturing business, is seeking a talented, highly motivated individual to fill a full-time Sales Position in the Midwest (Iowa based preferred) region. GapVax is the leading manufacturer of industrial and municipal vacuum units and hydroexcavation units in the United States. We provide the most reliable, comprehensive, and efficient mobile vacuum units in the industrial and municipal markets. Specifications of the position are listed on our website, www.gapvax.com, click on the Now Hiring link in the left hand column. Send resumes to or betty@gapvax.com or 575 Central Avenue, Johnstown, PA 15902. (CBM)

PRESSURE WASHERS

Industrial Pressure Washer - New w/warranty \$9,500. 2,000psi, 18gpm. 999cc Kohler & AR pump. Will deliver. 321-800-5763 (CBM)

Honda horizontal GX engines, new in-the-box w/warranty. GX200QX - \$399; GX270QAG - \$579; GX390QA - \$599 delivered price. 800-363-9855 or GXParts.com (CBM)

PUMPS



2014 NLB 24455D 460hp high-pressure water jetting pump. Rated 29gpm @ 24,000psi. Cummins Tier 4 diesel. Tandem-axle trailer. Only 275 hrs. Call for pricing.

210-215-2460, TX C10

Honda model WP40X, 8 hp, 4" with hoses. Honda 4 hp, 2" pump with hoses. The Cable Center: 800-257-7209. (CBM)

RENTAL EQUIPMENT

Liquid vacs, wet/dry industrial vacs, combination jetter/vacs, vacuum street sweeper & catch basin cleaner, truck & trailer mounted jetters. All available for daily, weekly, monthly, and yearly rentals. **VSI Rentals, LLC, (888) VAC-UNIT (822-8648) www.vsiRentalsllc.com.** (CBM)

SERVICE/REPAIR

Dynamic Repairs - Inspection Camera Repairs: 48 hour turn-around time. General Wire, Ratch, RIDGID, Electric Eel Mfg, Gator Cams, Insight Vision, Vision Intruders. Quality service on all brands. **Rental equipment available.** For more info call Jack at 973-478-0893. Lodi, New Jersey. www.dynamicrepairs.biz (CBM)

TOOLS

T&T Tools: Probes, hooks. Probes feature steel shafts with threaded and hardened tips. The insulated **Mighty Probe™** tested to 50,000 volts. **Top Poppers™** open manhole covers easily. Free catalog. **www.TandTtools.com.** Phone **800-521-6893.** (CBM)

Bosch Brute hammer drill with cart irons. The Cable Center: 800-257-7209. (CBM)

RIDGID model #300 with stand, RIDGID tri-stand vises, RP 330 ProPress kit. The Cable Center: 800-257-7209. (CBM)

PLACE YOUR AD ONLINE AT www.cleaner.com - IT'S ALWAYS THERE TO MEET YOUR BUSY SCHEDULE

TV INSPECTION



RS Technical Sewer/Storm Drain Inspection System, mounted in an excellent condition 1998 Ford Super-Cargo Van with raised top and factory interior conversion. 240,685 actual mileage. System comes with the following: Nova Star mainline tractor and LED camera; Mainline cable reel with 1,400 feet of sin-con cable; Onan 4.0 Genset with 10,182 hours; 7,100 BTU air conditioner and wall heater; 20-gallon washdown system; Flat-screen monitor; Battery charger and floodlights; Air compressor. No computer, but one is available for demo purposes only. \$9,999 OBO

Contact Tri State Utilities
757-366-9505, VA

C10



Envirosight CCTV Inspection System installed in excellent condition 2010 Chevy Express 3500 van currently with 62,653 actual miles. System comes complete with: Large crawler (Supervision 250); Small crawler (Supervision 140); Camera (Supervision 100 PTZ); Scan camera (Digisewer); POSM software; Onan generator with 1,122 hours; plus multiple related tools and accessories, too much to list. Additional pictures and info available. \$89,999 OBO

Contact Tri State Utilities
757-366-9505, VA

C10

Used SeeSnake Camera Systems in all sizes; Used General Wire Spring Camera Systems in all sizes; Used machines in all sizes. We want your trade! The Cable Center: 800-257-7209. (CBM)

PEARPOINT — Mainliner buying & selling used equipment. Canada & USA PEARPOINT MAINLINE EQUIPMENT ONLY. Will buy complete Pearpoint trucks. Will buy your old system. Do you need parts? 399, 599 reels; 420, 448 tractors: 494 digital and zoom 420 light heads. Call 800-265-4298 or mainliner2075@hotmail.com (CBM)



1997 GMC 3500 Savanna UEMSI TV inspection truck. 5.7 gas engine, 88,961 miles, UEMSI PCU, Dell PC with Windows operating system. \$10,000 OBO

Call Mark for more information
708-475-7116, IL

CBM



RS Technical Sewer/Storm Drain Inspection System, mounted in an excellent condition 2002 Chevrolet Express G3500 van with raised top and factory interior conversion. 176,375 actual mileage with current Virginia state inspection sticker, expires February 2018. System comes with the following: Nova Star mainline tractor and LED camera; System controller; Mainline cable reel with 1,000 feet of sin-con cable; Onan 4.0 Genset with 3,585 hours; 7,100 BTU air conditioner and wall heater; 20-gallon washdown system; Flat-screen monitor; Battery charger, floodlights and air compressor. No computer, but one is available for demo purposes only. \$9,999 OBO

Contact Tri State Utilities
757-366-9505, VA

C10



2002 Ford E450 16' UEMSI TV inspection truck. V10 gas engine, 122,798 miles, UEMSI PCU, Dell PC with Windows operating system. \$12,000 OBO

Call Mark for more information
708-475-7116, IL

CBM

Complete 1200' Cyclops TV system. All controls, six cameras, tractor, skids, tools, spare parts & cable. Does 3" to 48". \$22,500. Mick 972-754-5279 (C10)

NEED TRACTION? We make aftermarket more aggressive pads and chain assemblies for all chain-driven camera tractors. Custom, dependable, double-hole fabrication secured to high-quality carbon steel chain, or just pads and rivets. Also available: non-gritted pads. Samples upon request. **Pipe Tool Specialties LLC:** 888-390-6794; Fax 888-390-6670; www.yourtractionpads.com or email pts4422@yahoo.com (CBM)

LOOKING FOR TRACTION IN THAT GREASY PIPE?? Finally – a flexible polymer wheel with carbide grit for added traction in all pipe types and conditions, fitting most major CCTV transporter brands. Patent pending. Order today at trugrittraction.com, call 407-900-1091 or email info@trugrittraction.com (CBM)

Used and rebuilt camera kits in stock: RIDGID Mini Compact, Mini Color, Standard Self-Leveling, General Gen-Eye I, II and III, Aries Seeker, and SRECO kits. The Cable Center: 800-257-7209. (CBM)

VACUUM LOADERS

1999 International Guzzler vacuum excavator: Totally refurbished, purchased new for Big Dig Project. 27" blower, CAT engine, auto remote. Special noise-suppression equipment. Tri-axle. High-pressure wash-down system - 300-gallon water tank. \$79,500 OBO. Also available **1997 Ford Guzzler** vacuum excavator - same features as 1999 International. No washdown system. \$79,500 OBO. Call 617-212-0162. (CBM)

WANTED

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

WATERBLASTING

20,000 - 55,000 psi Sapphire Nozzles, OS4, OS6, OS7 replacements, UHP hoses & replacement parts. Excellent quality & prices. 772-286-1218, info@alljetting.com, www.alljetting.com. (CBM)

For Sale: Two (2) Myers M1610K40 – pumps only. www.waterjettingequipment.com or phone 714-259-7700. (CBM)

SOLED

Sell your equipment in *Cleaner* classifieds

Reach over 26,000 potential buyers each month when you list your equipment in the classified section. Plus, your listing is placed automatically online at the *Cleaner* website. In addition, your ad will be placed in the *Pumper e-Trader*, an electronic magazine that is e-mailed to readers. That's three ways to move your equipment out of the yard!

Why wait?

Go to
Cleaner.com/classifieds/place_ad



Scan the code with your smartphone.

PLACE YOUR AD ONLINE AT www.cleaner.com – IT'S ALWAYS THERE TO MEET YOUR BUSY SCHEDULE



35
CELEBRATING YEARS OF SERVICE

Pressure Washers, Replacement Engines Pumps, Parts & Accessories

WaterCannon.com

1.800.333.WASH (9274)

**HONDA
GX
SERIES**



**VERTICAL
AXIAL
PUMPS**



PUMPS WITH BUILT-IN UNLOADER & INJECTOR



HORIZONTAL TRIPLEX

3/4"



1"



**1"
Contractor
Duty**

**HORIZONTAL
AXIAL
PUMPS**



GAS FLANGE HOLLOW SHAFT PUMPS



ELECTRIC FLANGE HOLLOW SHAFT PUMPS



**TRAPPED PRESSURE
UNLOADER VALVES**



**DIRECT MOUNT UNLOADER
CONTROL SETS**



SOLID SHAFT PUMPS



**FLOW SENSITIVE
UNLOADERS**



**PUMP MOUNTED
UNLOADERS WITH EXTERNAL
BYPASS**



**SAFETY PRESSURE RELIEF
(POP-OFF) VALVES**



**INDUSTRIAL UNLOADER
VALVES & REGULATORS**



**THERMAL
RELIEF VALVES**



**EASY START
VALVES**



**JETTER
VALVES**



Industry Trained Staff available from 8:30 a.m. to 6:00 p.m.
weekdays E.S.T.

Water Cannon, Un contacto en Espanol: llama al: 1.800.917.9274

Orlando | Phoenix | Minneapolis | Hattiesburg | Melbourne | Toronto | Bogota
International: 1-321-800-5763

Water Cannon
is proud to be a
MWBE

Quality & Performance
YOU DESERVE.



w w w . g a p v a x . c o m



*Using top quality components, we custom-build
easy to operate and maintain trucks and equipment
that outperform the competition...*

**BUILT BY THE OPERATOR,
FOR THE OPERATOR.**



DEER PARK, TX
281-884-8658

JOHNSTOWN, PA
888-442-7829

WJTA-IMCA Convention Expo • October 25-27, 2017 • Booth 1037 • New Orleans

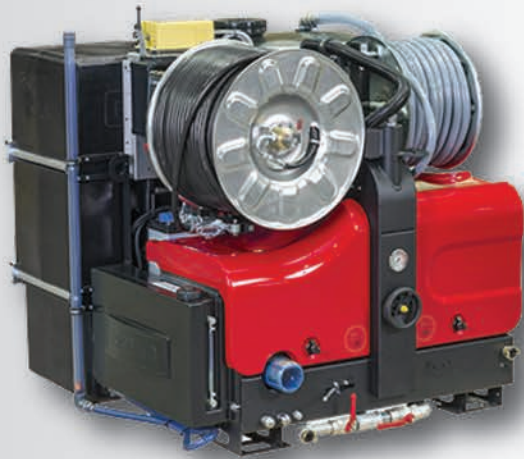


SPARTAN

ANDY PASSON, DIMICK SEWER SERVICE, JOLIET, IL



URBAN WARRIOR



SPARTAN CABLE



MODEL 300

PROFESSIONAL
GRADE.
FOR TOUGH
CUSTOMERS.

SPARTANTOOL.COM | 800.435.3866