

Cleaner

FOR DRAIN AND PIPE CLEANING,
INSPECTION AND REHABILITATION
PROFESSIONALS

TRENCHLESS SEWER REPAIR & SEWER LAYING | HOENLY.COM | DRAIN SPECIALISTS

HAVE YOU SEEN YOUR DRAINS?

FROM
THE EDITOR:
ALL THE
SMALL THINGS
/ 10

PLUS

TOUGH
JOB

SLIPLINING IN
PORTLAND / 42

SNATCHING OPPORTUNITY

PEERLESS PLUMBING MAKES THE MOVE FROM FULL
REPIPES TO A HEAVY WORKLOAD OF SEWER LINING TO
HELP ITS CUSTOMERS EFFECTIVELY HANDLE ARIZONA'S
DETERIORATING INFRASTRUCTURE / 16

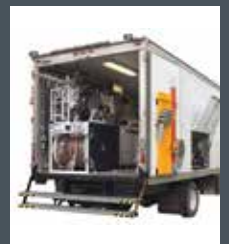
SLIP AND
SPRAY

CLEVELAND
CONTRACTOR FINDS
SUCCESSFUL SEWER
REHAB NICHE / 30

PIPELINE
REPAIR AND
REHABILITATION
DIRECTORY / 38

PRODUCT FOCUS

PIPE LINING METHODS AND PROJECTS / 52





**WHEN YOU
NEED AN
EXTRA HAND**

The Power-Vee®



© 2024 General Wire Spring

When a drain cleaning job puts you in a tight spot, using the Power-Vee is like having an extra hand. Just squeeze the feed lever and the Flexicore® cable spins into the line at up to 16 feet per minute. Retracting the cable is just as easy.

An indispensable tool for any Pro, the Power-Vee, with its quick-change cable cartridge system, durable metal and Dyna-thrust bearings, easily clears sinks, tubs and laundry drains.

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 visit www.drainbrain.com/powervee

The toughest tools down the line.™

General
PIPE CLEANERS

“I HAVEN’T FOUND ANYBODY THAT CAN COMPETE WITH THE TRAINING AND SUPPORT THAT NUFLOW PROVIDES.”

PROFILE

NuFlow Certified Contractor

Since becoming a NuFlow Certified Contractor in 2019, Greg Goan, co-owner of Zoom Drain New England, has transformed his sewer and drain cleaning business.

“The biggest reason I chose NuFlow is because of their training program. I spoke with other contractors in the industry, and everyone mentioned how great the support was.”

NuFlow’s comprehensive classes and 24/7 technical support have significantly boosted the confidence and capabilities of Greg’s team.

“The training that came with NuFlow helped tremendously. Training builds confidence to do harder, more complex lining jobs.”

Greg plans to continue expanding his business by leveraging NuFlow’s educational program to help build more crews while taking on increasingly more intricate and profitable projects.

“I haven’t found anybody that can compete with the training and support that NuFlow provides.”



Greg Goan
Zoom Drain New England
Scarborough, ME

nuflow
WE FIX PIPES

Grow with NuFlow. We Got You.
www.nuflow.com | 866-430-2134

CONTENTS

OCTOBER 2024

16 COVER STORY: SNATCHING OPPORTUNITY

Peerless Plumbing makes the move from full repipes to a heavy workload of sewer lining to help its customers effectively handle Arizona's deteriorating infrastructure. // By Giles Lambertson

FEATURES

30 PROFILE: SLIP AND SPRAY

Cleveland's Marra Services finds a successful niche tackling challenging sewer rehab jobs as a subcontracting specialist in spray-lining and sliplining. // By Ken Wysocky

38 >> SPECIAL SECTION << PIPELINE REPAIR AND REHABILITATION DIRECTORY

DEPARTMENTS

10 FROM THE EDITOR: ALL THE SMALL THINGS

Don't overlook the minor factors that can endear you to customers and have an outsized impact on your business thanks to word-of-mouth advertising. // By Kyle Rogers

12 @CLEANER.COM

Be sure to check out our exclusive online content.

26 MONEY MACHINES: THE PERFECT SPOT

California plumber finds a versatile trenchless solution for spot pipe repairs in the LightRay LR3. // By Giles Lambertson

42 TOUGH JOB: SLIPLINING CHALLENGE

City of Portland and its hired contractors successfully take on the task of rehabbing a 4,000-foot-long section of century-old deteriorating stormwater infrastructure. // By Giles Lambertson

48 BETTER BUSINESS: RALLY CRY

Inspiring others is an important part of business leadership and to do so there are certain action items that should be part of your everyday practices. // By Jim Bouchard

52 PRODUCT FOCUS: PIPE LINING METHODS AND PROJECTS

// By Craig Mandli

58 CASE STUDIES: PIPE LINING METHODS AND PROJECTS

// By Craig Mandli

62 PRODUCT NEWS

Spotlight: Compact drain cleaner packs a punch. // By Craig Mandli

64 INDUSTRY NEWS



ON THE COVER // Randy Rushing introduced pipe lining to Peerless Plumbing in 2008, with the company becoming the first certified installer of NuDrain lining in the state of Arizona. Five years later, the company appeared in *Cleaner* magazine. We're revisiting Peerless Plumbing again as the company continues to evolve. Randy's son Christian and his wife Lindsey now run the show. When the couple took over, the company's workforce consisted of Christian and two employees. But business surged in 2020, and six other technicians were quickly hired. Today, the Rushings have 20 employees and eight trucks on the road — five dedicated to pipe lining and three for camera inspections, estimates and other service calls. (Photography by Mark Henle)



26



42



30

coming next month: November 2024

focus: Hydroexcavation and Industrial Jet/Vac Services, Sewer Nozzles

Profile: Arrow Sewer & Drain, Middlesex, New Jersey // Tech Perspective: Saving CIPP time and energy
// Better Business: Private equity groups



Thermoform

A PVC alternative to CIPP lining

A fold and form pipe liner that is environmentally friendly and structurally sound.

- ✓ Expands to form tightly to the contours of the host pipe including changes in shape and dimension
- ✓ Available in sizes from 4" to 36" the wall thickness of which can be varied dependent upon design
- ✓ Non-toxic – and does not give off any harmful vapours
- ✓ Reduced risk – if necessary, can simply be removed
- ✓ Accredited and audited installers
- ✓ Accepted throughout the world as a reliable method of rehabilitation
- ✓ Manufactured in the USA and conforms to ASTM 1871



Thermoform

T (+1) 716 601 7760

E info@thermoformliner.com

W thermoformliner.com



CONSISTENCY

the **key** to
pipeline rehab
contractor success

Exactly **what Alphaliner installers experience**, along with...

Quality Control from Start to Finish

Our Saltville, VA ISO 9001:2015 manufacturing facility holds liner and equipment production to the highest standards of excellence and consistency.

Technical Support from Design to Installation

One source for custom-made liner materials, installation tech and 24/7 support for higher productivity, efficiency, accountability, and less risk.

Success Training for Optimum ROI

Extensive hands-on training so you execute projects that deliver the best possible outcomes.

Contact us now to help change the face of pipe rehabilitation with Alphaliner UV-GRP.

Everything Reline America does is repeatable, consistent, and the way it is manufactured is a game changer...

--John Fuquay, Fuquay Inc.



888.998.0808 | relineamerica.com

HAMMERHEAD®
TRENCHLESS

OUR SYSTEMS YOUR SOLUTION


















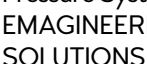













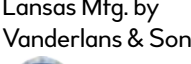


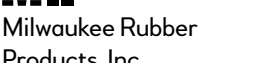





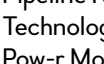

WHEN IT COMES TO REHABILITATING AGING AND DETERIORATING PIPES, WE'VE GOT YOU COVERED.







Our industry leading lateral rehab system drowns out the competition. We test all our products in the field and when paired together they are elite in every standard. We're here to help you do more, in less time, with less interference. When you choose HammerHead you're choosing integrated solutions, with superior results.


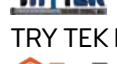


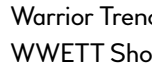


Dominate your projects at: hammerheadtrenchless.com

ADVERTISER INDEX

	A.R. North America, Inc..... 57
	Allan J. Coleman Co..... 15, 43
	American Jetter 67
	Apex CIPP Solutions 67
	Aries Industries..... 33
	Blackhawk Tech..... 65
	BRAWO SYSTEMS USA 14
	Cam Spray..... 49
	Central Oklahoma Winnelson 63
	Coast Manufacturing..... 55
	Cua Claws for Resurfacing
	Camera Wheels 67
	CUES, Inc. 45
	Duracable Manufacturing Co.... 11
	Dynamic Repairs..... 67
	Easy-Kleen Pressure Systems Ltd. 67
	EMAGINEERED SOLUTIONS INC 37
	Forbest Products Co..... 59
	FORMADRAIN 9
	GapVax, Inc..... 71
	General Pipe Cleaners, div. of General Wire Spring..... 2

	HammerHead Trenchless..... 7
	HotJet USA..... 67
	Hydra-Flex, Inc..... 35
	IPP Solutions, LLC 27
	KAISER PREMIER..... 28
	Ken-Way Corporation..... 64
	Lansas Mfg. by Vanderlans & Sons Inc..... 20 & 21
	MaxLiner..... 19
	MRP Milwaukee Rubber Products, Inc. 49
	Minicam Inc..... 23
	NuFlow Technologies..... 3
	PEARPOINT
	Picote Solutions..... 55
	Pipeline Renewal Technologies..... 24
	Pow-r Mole Trenchless Solutions..... 37
	Prime Resins 67
	Ratech Electronics, Ltd. 41
	Root Rat..... 65
	RootX..... 51

	SPARTAN TOOL Spartan Tool LLC.....back cover
	T&T Tools, Inc..... 63, 67
	THE CABLE CENTER
	The Cable Center 47, 61
	TRIC Tools Inc..... 61
	TROJAN WORLDWIDE INC. 59

	TruGrit Traction Inc..... 29
	TRY TEK Machine Works, Inc.... 50
	TvbTech Co., Ltd. 13
	Vivax-Metrotech Corp..... 51
	Warrior Trenchless Solutions 5
	WWETT Show 70
	Classifieds..... 68-69

Cleaner

FOR DRAIN AND PIPE CLEANING, INSPECTION AND REHABILITATION PROFESSIONALS

Published monthly by COLE Publishing, Inc.
PO Box 220, Three Lakes, WI 54562

In U.S. or Canada call toll-free 800-257-7222
Mon- Fri., 7:30 a.m.-5 p.m. CST

Website: www.cleaner.com | Email: info@cleaner.com | Fax: 715-350-8456

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 Holly at holly.gensler@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.



KAVLA BISNETTE



JIM KOSHUTA

DIGITAL REPRINTS AND BACK ISSUES: Visit www.cleaner.com for digital reprint options and pricing. To order back issues, call Holly at 800-257-7222 or email holly.gensler@colepublishing.com.

CONTROLLED CIRCULATION: 21,500 per month. This figure includes both U.S. and international distribution.

© 2024 COLE PUBLISHING INC.
No part may be reproduced without permission of the publisher.



cleaner.com

Go the distance with Durapox 201

A Styrene-Free 60-day open time epoxy for main lines

Discover next-generation styrene free latent epoxy liners for main lines. Enjoy maximum versatility and performance for the toughest jobs. From FORMADRAIN, the maker of 100% no-dig CIPP solutions for laterals and spot repairs!

FEATURES

- Steam-cured liners
- 60-day open time
- All lengths and sizes
- Compatible with felt and felt/fiberglass tubes
- Completely styrene free
- Pre-made liners
- Complies with ASTM F1216
- No refrigeration required
- No special storage



Get your free sample today.
Call Stephane at: 514-250-6998
Or email us at: info@formadrain.com
formadrain.com | 1-888-337-6764





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

ALL THE SMALL THINGS

Don't overlook the minor factors that can endear you to customers and have an outsized impact on your business thanks to word-of-mouth advertising

EARLIER THIS SUMMER, a tornado hit my hometown, producing quite a bit of damage on the city's south side. That also happens to be where my parents still live.

Fortunately, they were largely spared. While many of their neighbors suffered structural damage, their home somehow emerged unscathed. What didn't make it through the storm OK, however, was their backyard.

It had been a nice, treed area with various paths winding around flower beds and other landscaping, all gradually built up over the two decades my parents have lived in the house. But the tornado destroyed all but a couple of trees. Everything else had either been snapped off or uprooted.

My parents spent a week doing cleanup with the help of some neighbors and friends. During the second week, they hired a professional tree service contractor to take care of the cleanup they couldn't safely handle themselves.

The point of this long setup is to provide a lesson on customer service, particularly about not overlooking the little things that can really endear you to customers. My parents chose wisely with the tree service they hired. You can bet they'll be recommending the company to others — that all-important word-of-mouth advertising so many rely on.

The company was a small, four-person outfit. The owner did an exceptional job listening to my mom's needs. Because of how carefully the backyard had been landscaped over many years, the job wasn't straightforward. It wasn't as simple as getting equipment into the backyard and trimming, sawing and dragging tree debris out speedily. A more careful and deliberate approach was required. My mom wanted to preserve as much of the "old" yard as possible, and even to set aside some of the logs from downed trees for future landscaping ideas.

The crew did a great job listening and communicating, making sure my parents were satisfied while still doing what they needed to do to clean everything up and get the area safe again. They easily could've ignored my mom's minor pleas in the name of just getting the necessary work done as quickly as possible.

Also, my mom — being who she is — made lunch for the crew the two days they worked. It ended up being a pricey lunch. As the company owner settled up at the end of the final day, lunch was something he mentioned as he knocked an hour off the time the crew had worked — equivalent to a \$400 discount. At that hourly rate, it wasn't a huge dent in the final invoice, but it was still a nice gesture that made a big impression on my mom.

These are little, basic things. But those little things are also some of the most vital things when it comes to customer relations. They can pay big dividends in terms of acquiring future business. My parents will rave endlessly to people about the great tree service they hired. Their neighbors hired a different contractor. Let's just say that company might not be getting a glowing recommendation.

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

Follow Cleaner on



[facebook.com/
CleanerMag](https://facebook.com/CleanerMag)



[youtube.com/
CleanerMagazine](https://youtube.com/CleanerMagazine)



[x.com/
CleanerMagazine](https://x.com/CleanerMagazine)

Drop Us a Line

Have a comment about an article you've seen in *Cleaner*? An experience from a job that you'd like to share? *Cleaner* would love to hear from you. Email comments and photos to editor@cleaner.com

DURACABLE DALE



WORDS OF WISDOM

NEED PIPE LINING EQUIPMENT?

WE'VE GOT A PIPELINE - TO YOUR FAVORITE BRANDS -

DURACABLE IS AN AUTHORIZED DISTRIBUTOR OF THE COMPLETE LINE OF PROFESSIONAL TOOLS AND EQUIPMENT FROM THE INDUSTRY'S MOST TRUSTED BRANDS.



DURACABLE.COM



DURACABLE - MANUFACTURING CO -

800-247-4081

RIGHT IN THERE WITH YOU.

@Cleaner.com

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



EYES ON THE ROAD

Staying Safe When Traffic and Job Sites Merge

This online exclusive ran back in August — National Traffic Awareness Month. Contractors play a crucial role in this mission. Whether you're working on highways, local roads, or other urban infrastructure, your safety and the safety of those around you depend on heightened awareness and adherence to best practices. >> cleaner.com/featured



R - E - S - P - E - C - T

Hand and Power Tool Safety

Manufacturers have been developing newer ways of making our hand and power tools safer so that we can get the job done and get home safe. Still, every year over 400,000 employees are sent to emergency rooms across the country with injuries caused by hand and power tools. Respecting your tools and taking responsibilities seriously can help eliminate common injuries. >> cleaner.com/featured

SURVEY SAYS

Report Reveals Younger Generation's Opinions About Trades Careers

Jobber, a leading provider of home service software, recently released *The Annual Blue-Collar Report: Gen Z and the Trades Need Each Other*. The report, based on survey responses from 1,000 students in the U.S. aged 18-20, provides insight into how Gen Z navigates education and career choices, as well as offers solutions on how to inspire and encourage younger generations to consider taking advantage of all that blue-collar careers have to offer. >> cleaner.com/featured



OVERHEARD ONLINE


"When I'm aware of my mental health, I can be a more useful, functional member of society. I have friends. I have employees who are happy with me. ... I get to have all these things back in my life as a result of talking about things with people."

— [Breaking the Mental Health Stigma](https://cleaner.com/featured)
>> 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

 x.com/CleanerMagazine

 facebook.com/CleanerMag

 instagram.com/cleanermag

WE ARE LOOKING FOR NEW DEALERS.



AFFORDABLE & RELIABLE!



**1080P
AHD**

**Weight:
11.8KG**

Push Inspection Camera Model No. 3499FB



Easy to Carry



Compact, Rugged and
Waterproof Design



Convenient
Transportation



Removable Control box
with keyboard

Camera Size φ23mm×51mm	Rod Cable φ6.8mm	White LEDs 15pcs	For Pipe Dia 30-150mm
LCD Size 10.1"	Built-in Battery 7 Hours	Text Input Keyboard	Meter Counter Built-in
Resolution 1080P Full HD	Self-leveling Built-in	512hz Sonde Built-in	Cable Length 66ft/100ft/130ft

TVBTECH CO., LTD

www.tvbtech.com ■ www.draincamera.com

Email: sales@tvbtech.com ■ TEL:+86-158 89631708

Designed and Made in Shenzhen, China.

BRAWO® SYSTEMS

THE REHABILITATION EXPERT FOR PROPERTY AND BUILDING DRAINAGE SYSTEMS

INNOVATIVE LIGHT CURING

Fulfills all
US work safety
requirements

BRAWO® Magnavity SX
is honored as the
most innovative
product
by the
NASTT.



BRAWO® Magnavity sx

smart • efficient • strong

- Specifically developed for use with BRAWOLINER® and the light-curing epoxy resin BRAWO® UVPox US
- Very good bend flexibility, 87° possible from 4" (DN 100)



Contact

Andrew Marshall

Sales Manager USA

+1-240-796-5007

andrew.marshall@brawosystems.com



brawosystems-usa.com

Learn more about BRAWO® SYSTEMS
through our tutorials.

ALLAN J. COLEMAN

SINCE 1905

Call us today!
 Chicago 773-728-2400
 Phoenix 602-638-0600

5725 N. Ravenswood Ave. • Chicago, IL 60660
 60035 40th St., Ste. #5 • Phoenix, AZ 85042

info@allanjcoleman.com • www.allanjcoleman.com

OLDEST NAME IN THE BUSINESS — OVER 115 YEARS OLD

RIDGID

CS6x)) **VERSA Digital Recording Monitor With Wi-Fi**



- A high and low monitor mounting position and pivoting frame lets users tilt the monitor to the desired angle for optimal viewing. The sunshade remains open in all situations for glare reduction
- 5.7" daylight viewable screen. TruSense™ compatible
- Docks to the Compact 2/C40/M40 camera reels for efficient transport, storage, and operation, and can be used mounted or unmounted
- Operates on one 18 V battery or AC power adapter
- Capture images and video directly to a USB drive
- Stream or Record to an iOS or Android phone or tablet

NaviTrack® Scout®



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

SeekTech® SR-20



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

Pipe Patch Kits

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



FLEXSHAFT, K9-306

- 3" - 6" Pipes
- Includes: 125' of 3/8" cable and kit
- Faster setup and cleanup, quick cleaning



FLEXSHAFT, K9-204

- 2" - 4" Pipes
- Includes: 70' of 5/16" cable and kit
- Faster setup and cleanup, quick cleaning, and cordless convenience

FLEXSHAFT, K9-102

- 1 1/4" - 2" Pipes
- Includes: 50' of 1/4" cable and kit
- Faster setup and cleanup, quick cleaning, and cordless convenience for additional time savings



Digital Self-Leveling Mini Pro

- Digital self-leveling
- High dynamic range (HDR) offers bright, clear in-pipe imaging
- TiltSense displays the pitch in a pipe
- 25 mm camera head

CSx)) **VIA™ Wi-Fi Control Device**



- Compatible with all RIDGID SeeSnake reels when using the RIDGID SeeSnake Standard & Mini CSx Via Mount
- Reliable connectivity between CSx Via and mobile devices with the HQx Live app or HQ software for Windows
- Rapid communication by email, text or upload photos and videos to customers or colleagues in real time

We Have RIDGID Parts!



Buy Online at
AllanJColeman.com

Authorized SeeSnake Repair Center
THE BEST SERVICE AND FAST TURN AROUND!

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

SNATCHING OPPORTUNITY

PEERLESS PLUMBING MAKES THE MOVE FROM FULL REPIPES TO A HEAVY WORKLOAD OF SEWER LINING TO HELP ITS CUSTOMERS EFFECTIVELY HANDLE ARIZONA'S DETERIORATING INFRASTRUCTURE

// By Giles Lambertson



WHEN ONE DOOR CLOSSES, AS THEY SAY, ANOTHER ONE OPENS. THAT WAS THE EXPERIENCE OF RANDY RUSHING IN 2008.

Rushing purchased Peerless Plumbing in 2002. The Phoenix, Arizona, plumbing services company specialized in repiping — the complete replacement of a home’s aging waterlines with new copper pipe. In 2008, when the national economy tanked, overhauling an entire residential plumbing system must have seemed a luxury to struggling homeowners.

“The market for repiping fell apart, so Dad was looking for something to expand the business. He was looking into new technologies,” says Christian Rushing.

What he found was NuFlow Technologies, a company that began in the 1990s to introduce CIPP solutions to small diameter — that is, home-sized — pipe problems. Peerless Plumbing became the first certified installer of NuDrain lining in Arizona (examined when the company was first profiled in *Cleaner* in the May 2013 issue) and the rest is history.

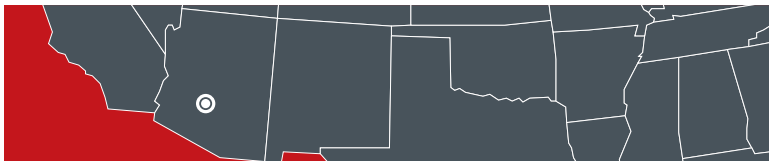
PANDEMIC BUSINESS SURGE

Christian Rushing is part of that history. After years as a U.S. Coast Guard boatswain’s mate participating in search-and-rescue missions off the

◀ Lindsey and Christian Rushing officially bought Peerless Plumbing from Christian’s father in 2019.



Christian Rushing and crew perform inversion lining on a sewer rehab job at the SureStay Hotel in Phoenix.



Peerless Plumbing

PHOENIX, ARIZONA

OWNERS Christian and Lindsey Rushing

FOUNDED 1985

EMPLOYEES 22

SERVICES Residential and commercial trenchless drain and sewer line repair, drain and sewer cleaning, camera inspection, repiping, general plumbing service calls including water heater repair and replacement

SERVICE AREA All of Arizona, primarily the Phoenix metro area

WEBSITE peerlessplumbingrepipes.com

coast of Oregon, he returned to Arizona in 2005 and began working for his father. While Christian enjoyed the plumbing trade overall, when the senior Rushing discovered CIPP products, he became especially passionate about the business.

The younger Rushing eventually met and married wife Lindsey and, in 2019, the couple bought Peerless Plumbing from

his father. The following year saw the arrival of the pandemic, and all the business dislocations that ensued. However, it turned out to be a blessing for the company.

“It was fantastic. We grew significantly in 2020,” says Lindsey Rushing, who serves as company president. “It was a great year for us and for a lot of service companies. Everyone was at home and needing repairs and that allowed us to grow our business.”

When the couple took over Peerless Plumbing, the workforce consisted of Christian and two employees. With the onset of a surge of business in 2020, six other technicians were quickly hired. Today, the Rushings have 20 employees and eight trucks on the road — five dedicated to pipe lining and three for camera inspections, estimates and other service calls. Christian supervises, does camera inspection work, bids jobs, works on some lining installations and generally seems to live in his truck.

“We definitely did not plan to grow that fast,” says Lindsey.

NO EXPERIENCE REQUIRED

When hiring, many companies look for experience and a skill set that matches the position needing to be filled. Lindsey Rushing looks for none of that. “We prefer to hire people with very little knowledge of sewer lining,” says the president of Peerless Plumbing-NuDrain Phoenix. “We want them to be able to be trained to do it our way, which we think is the right way. What we look for is personal drive and desire to learn — people who are wanting to expand themselves and to learn new things.”

The company employs about 20 people, most of whom clean drains and sewers and line them using NuFlow Technologies products. While they receive basic in-the-field training from veteran company employees, new hires are eventually sent to California to a NuFlow training center. The manufacturer’s training program gives technicians sure footing with the technology.

Peerless has been a certified NuDrain installer since 2008. In 2023, Peerless became one of the first platinum-certified NuDrain contractors in the U.S.

“We send our employees to California so they can be trained in lining without the stress of knowing it is someone’s house they are working on,” Lindsey says. “Out there, they get to the limits of what lining can do. They come back with new information and can teach us what they learned.”

Hiring practices and how new employees are trained all boils down to what best serves the customer. Lindsey says she and husband/business partner Christian Rushing have worked for enough bosses to know what they like and don’t like.

“We try to do for our employees what we wish we would have seen in companies we have worked for,” she says. “The No. 1 way to serve customers best is to take care of the people who work for us so they will take care of customers.”

“COVID threw us into a growth mode. We had to reallocate funds for growth and get new equipment for the increased workload.”

PIPE LINING TAKEOVER

In 2024, Peerless Plumbing remains a drain-and-sewer-centric business. Officially, the company consists of two divisions: Peerless Plumbing and NuDrain Phoenix. In fact, 99% of business volume is pipe lining.

“Peerless Plumbing has been around since 1985, and we didn’t want to abandon that name,” Lindsey says. “We wanted to continue to build on a long-standing company reputation.”

The NuDrain Phoenix division was created in 2020 to differentiate the plumbing work from the sewer and drain lining work. Partly that was a response to the nonresidential side of the business — real estate agents and other businesses that look to the company for nonplumbing tasks

like camera inspections and sewer line repair.

“We will always have a plumbing element in the business,” Lindsey says. “Everyone needs general plumbing work done at some time and we have a great plumber on staff, Brandon Brinkley, who can handle all those calls for us.”

But most of the company crew members are out cleaning and repairing lines on residential and commercial properties. Phoenix has been a community for more than 150 years and has a population of 1.4 million people. That represents a lot of drain and sewer lines. In many homes in the older sections of the city, those lines are cast iron or Orangeburg and are aging fast.

“In 2008 when the company got into the lining business, a lot of the cast iron was in bad shape. Now it is 16 years older, getting very brittle and needing lots of care,” Lindsey says.

“IN 2008 WHEN THE COMPANY GOT INTO THE LINING BUSINESS, A LOT OF THE CAST IRON WAS IN BAD SHAPE. NOW IT IS 16 YEARS OLDER, GETTING VERY BRITTLE AND NEEDING LOTS OF CARE.”

LINDSEY RUSHING



» Christian Rushing pours epoxy during a sewer rehab job at the SureStay Hotel in Phoenix.



Peerless Plumbing became the first certified installer of NuDrain lining in Arizona in 2008. Since then, the company has continued to expand its lining capabilities, most recently with increased focus on UV curing.

SOLVING DESERT PIPE PROBLEMS

Residential and commercial drain and sewer pipes are generally 2 to 6 inches in diameter, perfect for NuDrain’s solutions. Vegetation in the desert valley is water-starved, of course, and pipe systems are targeted by roots.

“All those roots want water in the summer and will find ways to get that water. Drain and sewer systems are one way,” Lindsey says.

She cites the oleander evergreen shrub and drought-resistant sissoo trees as particularly invasive of area pipes. NuDrain crews deal with roots and other clogging elements by sending mechanical cables into a pipe to chew through the impediment.

“All of our trucks are outfitted with multiple sizes of Picote milling machines,” Christian says.

The lines are then jetted to rid them of residual material. Each company truck carries a small Spartan or General Pipe Cleaners jetter for rudimentary cleaning. A larger Spartan Warrior jetting unit is available as needed.

“Going back to when my dad ran the company, Spartan was the brand of jetter we always used,” Christian says. “We’ve had a lot of good experiences with General jetters, too.”

Though the company primarily serves residential customers, it does have a team dedicated to commercial projects, overseen by

Michael Eppich-Green. For example, one such job completed in June was for Maricopa County. Another for a local hotel occurred in July. The company also has ongoing projects at flight schools in the valley.

Whether commercial or residential, each line worked on by the company is camera-inspected free of charge. If something is found in a pipe that requires additional service work — a clog, a cracked pipe — the fee is rolled into the subsequent repair bill. If nothing is found, the inspection remains free. Inspections are done using Vivax-Metrotech cameras. Liner installation teams use RIDGID cameras.


CONTINUED >>



MAXLINER GIVES YOU MORE!

The leader in small diameter lateral and vertical lining systems.

FOR MORE INFORMATION:

-  877-426-5948
-  SALES@MAXLINER.COM
-  MAXLINERUSA.COM

PART OF:
UNITED FELTS
A VORTEX COMPANY



MORE
Equipment Options



MORE
Liner Options



MORE
Resin Options



MORE
Training & Support

If a pipe indeed needs more than cleaning, the company offers several solutions, including pipe coating, CIPP and inversion lining. The NuDrain CIPP liner is the most opted-for repair, with epoxy-coated lining material inserted into the pipe through an existing access point — a clean-out, for instance — and the liner pressed into place against the pipe's interior and cured to become essentially a new pipe.

UV CURING SHIFT

NuFlow has another lining option that NuDrain Phoenix is using more frequently — a UV-cured liner called NuCure.

“We are getting more and more involved in the UV system,” Christian says. “It also is a NuFlow product, but the liner itself is

very strong and is more chemical and temperature-resistant. It also cures much faster.”

The curing is the key. For example, temperatures in Phoenix in July around the time of the large hotel job reached 114 degrees. The impact of that on epoxy-coated liners is significant.

“We have a certain amount of working time before the epoxy liner needs to be in the ground. In summer heat, the time is shorter,” Lindsey says. “With UV, it doesn't matter how hot or cold it is. Curing only begins when the UV light is turned on.”

Most lining done today by the company is ambient-cured epoxy resin, but the move to UV lining is accelerating. One of the company trucks is being redone and outfitted for exclusive work with the UV lining system.

“Our goal is to install more UV liners in the near future,” Lindsey says. “We are working with NuFlow to make sure our employees are fully trained in everything UV.”

TELL YOUR FRIENDS

Before the 42-year-old company president married into the plumbing and pipe repair industry, Lindsey was a police dispatcher and 911 operator. When she assumed the executive position at the company, she decided Peerless Plumbing-NuDrain Phoenix could prosper on referrals alone. She has been proven right.

“WE HAVE A CERTAIN AMOUNT OF WORKING TIME BEFORE THE EPOXY LINER NEEDS TO BE IN THE GROUND. IN SUMMER HEAT, THE TIME IS SHORTER. WITH UV, IT DOESN'T MATTER HOW HOT OR COLD IT IS. CURING ONLY BEGINS WHEN THE UV LIGHT IS TURNED ON.”

LINDSEY RUSHING

Lansas®
PRODUCTS
Manufactured by Vanderlans & Sons, Inc.



**“We Just Made The
BEST Test Plugs
Better!”**

» J.J. Johnson and Michael Eppich-Green gather tools from the truck during a sewer rehab job. Peerless Plumbing has 20 employees and eight trucks on the road — five dedicated to pipe lining and three for camera inspections, estimates and other service calls.

“It sort of developed that way,” she says. “We saw business growing without ads and billboards. We didn’t do any of that and still there was growth. The customers were coming from referrals.”

The company pays a referral bonus to anyone who refers a new customer.

“It is a better use of my marketing and advertising budget than anything I have ever done,” Lindsey says.

Not all customer calls are from referrals, but the vast majority are.

“A neighbor of someone we worked for or a family member will refer us,” she says. “I love the method because a person is going to trust his neighbor or a family member more

CONTINUED >>



PIPE PLUGS & PIPELINE TESTING EQUIPMENT



NUCA
We Dig America



Lodi, California
800.452.4902 • 209.334.4115

www.lansas.com

LODI • ATLANTA • HOUSTON • CHICAGO



« Michael Eppich-Green and Christian Rushing run liner through the calibration table during a sewer rehab job at the SureStay Hotel in Phoenix.

» J.J. Johnson inspects a line using a Vivax-Metrotech camera.



“I LOVE THE [REFERRAL] METHOD BECAUSE A PERSON IS GOING TO TRUST HIS NEIGHBOR OR A FAMILY MEMBER MORE THAN A BILLBOARD OR A COMMERCIAL. AFTER ALL, THE PERSON REFERRING SOMEONE TO US IS PUTTING HIS OR HER PERSONAL REPUTATION ON THE LINE.”

LINDSEY RUSHING

than a billboard or a commercial. After all, the person referring someone to us is putting his or her personal reputation on the line.”

ALWAYS SOMETHING NEW

Where do the Rushings see the company headed — growing into a regional or national company, perhaps?

“Arizona keeps us very busy,” Lindsey says.

Most of the company’s business is in the Phoenix metro area, but crews will go anywhere in the state if a job warrants the travel.

What is for certain is that new technologies will be part of the company’s future. While some trenchless pipe replacement solutions like pipe bursting hold no allure for the Rushings, “We definitely are going to get into more technology,” according to Lindsey. “Everything improves over time, things get better, faster, stronger. We are going to have to keep investing in ourselves, our employees, and the company to stay ahead of things.”

That actually was the philosophy of the senior Rushing, who since retiring has passed away. He looked out for his customers by looking into the future of work.

“He was providing better solutions to customers. That’s why the company got into trenchless repair work. He knew it was a better way

to do it,” Lindsey says. “Today, we know there always are better ways to do something. There’s always something new.” c

FEATURED EQUIPMENT

**GENERAL PIPE CLEANERS,
DIV. OF GENERAL WIRE SPRING**
800-245-6200
www.drainbrain.com
(See ad page 2)

NUFLOW TECHNOLOGIES
866-430-2134
www.nufLOW.com
(See ad page 3)

PICOTE SOLUTIONS
864-940-0088
www.picotegroup.com
(See ad page 55)

RIDGID
800-474-3443
www.ridgid.com

SPARTAN TOOL LLC
800-435-3866
www.spartantool.com
(See ad on back cover)

VIVAX-METROTECH CORP.
800-466-3392
www.vxmt.com
(See ad page 51)



WE'RE LOOKING FORWARD
TO SEEING YOU AT WEFTEC

Our Inspections and CIPP equipment teams are excited to demo our state-of-the-art equipment and answer all your questions. Whether you're curious about the latest in our trenchless tech or looking to upgrade your inspection game, we've got you covered!

INSPECT



 minicam

RELINE



 sewertronics

REINSTATE



 dancutter

Stop by to learn more about the Minicam, Sewertronics and Dancutter brands and how our inspection and CIPP products go hand-in-hand to revolutionize the trenchless industry.

**LEADING
THE FUTURE
OF WATER**

 **weftec**
the water quality event™

BOOTH: 701

OCT 7-9

NEW ORLEANS, LOUISIANA USA



SCAN TO REGISTER FOR YOUR **FREE**
TICKETS FROM MINICAM

REPAIR RELINE REINSTATE

Trenchless rehab equipment that delivers high-performance.

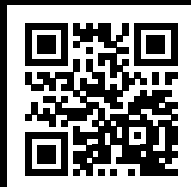
Training and service teams that give you the knowledge and power to stay productive.



Contact us anytime to request a demo or for purchase, leasing or rental information.

 **Pipeline
Renewal**
TECHNOLOGIES™

Rent  with PRT



www.PipelineRT.com | (866) 936-8476

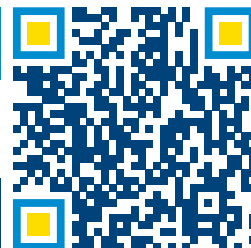


flexiprobe™ P540c
PORTABLE VIDEO INSPECTION EQUIPMENT

www.pearpoint.com

+800.688.8094

pearpoint.sales.us@spx.com



THE PERFECT SPOT

California plumber finds a versatile trenchless solution for spot pipe repairs in the LightRay LR3

// By Giles Lambertson

TO SAY MARCO ACOSTA likes his LightRay LR3 pipeline spot-repair system doesn't fully capture his enthusiasm.

"Customers just love that machine," he says. "They drool all over it. It has worked wonders for me. It is an amazing machine."

The co-owner of Handy Plumbing Man in San Carlos, California, bought the UV curing machine in early January. It paid for itself within a month, Acosta says. That's saying something because it is a \$38,000 tool. The LightRay LR3 is a collaboration between Spartan Tool and Waterline Renewal Technologies.

Handy Plumbing Man was founded in 2019 but has grown quickly. The company now numbers 38 employees and 22 service vehicles, providing residential and commercial plumbing services and sewer cleaning, inspection and repair work to the San Francisco Bay Area.



Marco Acosta likes the LightRay LR3 system's ability to handle the variety of different spot-repair situations that come up in his work. "You can adapt it to pretty much anything," he says.

SIMPLE YET VERSATILE

The LightRay LR3 is versatile, Acosta says. It can patch lines from 3 to 12 inches in diameter and the cold packer can either be pulled or pushed into place. Furthermore, the high-performance fiberglass liner itself comes already impregnated with non-VOC resin. Refrigeration isn't necessary and the liners have a six-month shelf life when stored in a controlled environment between 50 and 70 degrees. Once positioned, the patch cures in as few as 10 minutes. Liners come in 5-, 10- and 20-foot lengths.

A couple communities in Acosta's service area have marshy soils where water awaits only 3 feet underground. The condition precludes some traditional pipe repair methods and also invites

HANDY PLUMBING MAN

SAN CARLOS, CALIFORNIA

OWNERS Marco and Amparo Acosta

MACHINE LightRay LR3 pipeline spot-repair system

FUNCTION Providing pipe patches in 5-, 10- and 20-foot lengths with UV curing

FEATURES Capabilities for push or pull into place; high-performance fiberglass liner that comes already impregnated with non-VOC resin; 100-foot hose couples with 5-, 10- or 20-foot packers; double strand, cold LED lights for UV curing; quick disconnect for easy packer switching

COST \$38,000

WEBSITE handyplumbingman.com

Shorten the relining process & save time and money

We have the right tools needed for a
successful relining project

- Descalers
- Inspection cameras
- Knocker chains
- Flexible steel shafts
- Spot repair kits



PipeCaster™ Pro

SIPP (Sprayed-in-Place-Pipelining)
Injection casting system for pipe rehabilitation

SCAN QR CODE
TO LEARN MORE

- Cost-Effective
- Plug and play
- No Reinstatement
- Resin cures within minutes
- Ready to ship today



📍 Colorado

P.O. Box 4160
Gypsum, CO 81637

📍 California

5192 Bolsa Avenue, Ste 5
Huntington Beach, CA 92649

📞 714-410-0707 ext. 1
✉ info@ippsolutions.com
🌐 www.ippsolutions.com

ipp
Solutions, LLC



MONEY MACHINES

“WITH THE SIMPLICITY OF THE TOOL AND HOW EASY IT IS TO CONNECT AND OPERATE, I GIVE AN A-PLUS TO THE DESIGNER.”

MARCO ACOSTA

inflow and infiltration. Yet all that water is not a daunting prospect, Acosta says, because the LightRay LR3's LED UV system “can cure even if submerged in water.”

Operating the system is a two-person job, but that doesn't mean a person must be a specialist of some kind to use it. It is extremely operator-friendly, Acosta says, noting that he's confident he could take anyone completely unskilled in the trades and teach them to operate the LightRay LR3 in a single workday.

“It's pretty simple,” Acosta says. “With the simplicity of the tool and how easy it is to connect and operate, I give an A-plus to the designer.”

AN EVERYDAY TOOL

Some of the spot repairs Acosta is now making with the LightRay LR3 he formerly would have handled with a traditional CIPP system, or resorted to pipe bursting or digging up the line to replace the failed section.

His crews use the LightRay LR3 almost every workday because it is “adaptable to different situations,” Acosta says. “You can adapt

it to pretty much anything. At a house on a slab, for example, or a house where you don't want to cut into the flooring.”

Acosta says he checked out other spot-repair systems with similar features, but the LightRay LR3 stuck out to him as the superior option. His technicians concur.

“They are always fighting over who gets to use it,” Acosta says. “We had a meeting recently and talked about it. I told them we don't want the fighting, so I am buying a second LightRay LR3.”

“The fact is, the LR3 has been really good to us. Using it, we rarely have to do any digging. It can go down a toilet. It has worked wonders. It's an amazing thing. Getting a second one is a no-brainer.”

GLOWING ENDORSEMENT

Acosta says he will talk to anyone considering getting a LightRay LR3 and wanting an opinion.

“It will save a drain cleaner or plumber a lot of money,” he says. “The investment is totally worth it. I would recommend it to any contractor.” **c**



**KAISER
PREMIER**

THE GROWING KAISER FAMILY OF RECYCLERS

**DEPENDABLE & RELIABLE RECYCLERS
BUILT FOR THE TOUGHEST CONDITIONS**

AquaStar



EcoCycler

Kaiser. Performance counts.

Contact us for demo, sales, or rental information.

www.kaiserpremier.com • sales@kaiserpremier.com • tel. 970-542-1975



SEWER CRAWLER



PARTS & MANHOLE TOOLS



TRACKS



CLEATS



WHEEL KITS



HUB ADAPTERS



WHEELS



MANHOLE TOOLS



PIGTAILS



TIRES

GRITTED WHEELS
GRITTED TRACKS
FIBERGLASS POLES
PIGTAILS & MOTOR CABLES
JETCAMS & MORE...



WE RESURFACE
WORN STEEL WHEELS

WITH **NEW GRIT**

www.trugrittraction.com
407-900-1091





SLIP AND SPRAY

CLEVELAND'S MARRA SERVICES FINDS A SUCCESSFUL NICHE TACKLING CHALLENGING SEWER REHAB JOBS AS A SUBCONTRACTING SPECIALIST IN SPRAY-LINING AND SLIPLINING

// By Ken Wysocky


The power of investing in specialized equipment to capitalize on a market niche is vividly evident at Marra Services.

Established in 2006, the Cleveland-based company primarily uses trenchless spray-lining and sliplining technology to rehab aging and failing sewer lines. It stands as a textbook case for how to painstakingly grow a business from the ground up. While success didn't happen overnight, the company's governing principles — do quality work, keep investing in advanced equipment and focus on providing niche services — eventually paid dividends.

“In our first year, our sales probably totaled around a couple hundred thousand dollars,” says Nick Marra, vice president. “Last year we did about \$20 million in sales. We have a lot of specialty equipment that makes it easy for other contractors to hire us. There aren't a lot of companies in our markets that have this kind of equipment.”

Taking the time to build business relationships also fueled growth, says Marra, whose wife, Ciara, owns the company.

“We put a lot of time and effort into building relationships with companies,” Marra explains. “Earning their trust is key — we make sure we do what we tell customers we're going to do. It took a while, but our 'secret sauce' was time. Everything takes time. It took years to get to know all these different people at all these different companies and build relationships with them.”



Marra Services
CLEVELAND, OHIO

OWNER	Ciara Marra
FOUNDED	2006
EMPLOYEES	40
SERVICES	Trenchless sewer rehab using spray-lining and sliplining techniques
SERVICE AREA	Metro Cleveland and Detroit
WEBSITE	www.marrainc.com

TUNNEL VISION

As a fourth-generation underground infrastructure contractor, working below ground level is in Marra's blood. His great-grandfather, Angelo Marra, did tunneling work, as did his grandfather, Anthony Marra Sr., and his father, Anthony Marra Jr., owned and operated Marra Constructors, a tunneling and underground infrastructure business.

“I come from a long line of tunnelers,” Marra says. “As a kid, I found tunnels fascinating. I even used to take rides on small locomotives inside some of the tunnels my dad worked on. I thought it was really cool.”



“WE PUT A LOT OF TIME AND EFFORT INTO BUILDING RELATIONSHIPS WITH COMPANIES. EARNING THEIR TRUST IS KEY — WE MAKE SURE WE DO WHAT WE TELL CUSTOMERS WE’RE GOING TO DO.”

NICK MARRA

Marra worked for his father for about five years before he and his wife decided to branch out on their own and focus on trenchless sewer rehab, a move his dad supported.

“We thought it was a good opportunity,” he says. “I liked going into the sewers and coming up with different ways to make unique fixes — find ways to make repairs without digging up roads. For whatever reason, I just liked doing it.”

A SLOW START

The company started out by doing small sewer repair jobs for the Northeast Ohio Regional Sewer District, often patching holes by hand using bagged mortar. Things slowly grew from there through word-of-mouth referrals as the company picked up work as a subcontractor for prime contractors.

“It took a while to build things up from there to where it is now,” Marra says. “It took about five years before people started knowing who we were and it started to get easier to get work.”

Business picked up even more around 2011 when the company started rehabbing manholes by spraying a cementitious material called shotcrete.

“It seems a little primitive now, but we were limited financially,” Marra explains.

Eventually the company started spray-lining sewers with shotcrete and then got into applying geopolymer coatings, too.

“Spray-lining definitely opened up markets for us,” Marra says. “We got a lot of subcontracting opportunities with companies performing big sewer rehab jobs, with spray-lining just a small part of them. That equipment was a great investment.”

The company’s primary customers now are municipalities and larger underground infrastructure companies that subcontract work out to Marra Services.

“Big and little companies struggle to find workers,” Marra says. “And big tunnel jobs have multiple sites, so it makes sense to sub some of it out so they can focus on other things.”

◀ Nick Marra is the fourth generation of his family to work in underground infrastructure. His great-grandfather did tunneling work, as did his grandfather. And his father owned and operated Marra Constructors, a tunneling and underground infrastructure business.

MORE WORK, MORE EQUIPMENT

To perform spray-lining, the company relies on pumps made by Putzmeister, Blastcrete Equipment and ChemGrout. The Blastcrete and ChemGrout pumps are used in conjunction with two spray-lining systems from Quadex (a brand owned by Vortex Companies), including a sprayMASTER unit and an I-MARS unit.

When not using concrete, the company typically uses a Quadex product called GeoKrete, a fully structural, corrosion-resistant and mortar-like polymer with strong bonding properties. Polymer linings offer better protection from noxious gases that build up in some sewers, Marra says.

The company also owns an epoxy spray rig from CJ Spray, used with Graco pumps; dewatering pumps made by D&D and Xylem;

seven rough-terrain cranes from GROVE (a brand owned by The Manitowoc Co.), Link-Belt Cranes and Broderon Manufacturing Corp.; and Caterpillar excavators and skid-steers, Volvo Construction Equipment loaders and Doosan excavators and a KAISER PREMIER AquaJet water recycler.

Investing in spray-lining systems is expensive. The sprayMASTER system cost about \$65,000, Marra says, while the I-MARS system cost around \$500,000, which included training

CONTINUED >>



REHABILITATION SYSTEMS



Cut through challenging material rapidly and precisely

- ✓ Compact & Powerful Crawler
- ✓ Advanced Ergonomic Controls
- ✓ Camera with Lens Wiper & Scraper
- ✓ 850' Cable Length
- ✓ Simplified Maintenance

Questions about
Wolverine® 2.0
Self-Propelled Cutter?

Let's Talk
800-234-7205

ARIES

Waukesha, WI 53186 USA 800-234-7205 ariesindustries.com

raising the bar UNDERGROUND



⚡ Marra Services has established a niche with spray-lining and sliplining, primarily serving municipalities and larger underground infrastructure companies that subcontract work out to Marra Services.



▲ Nick Marra and Chris Berger, general supervisor, at a job site in Cleveland. The piping stacked behind them is part of a 20,000-foot-long sanitary sewer project.

expenses and an RMX-5000 mortar-mixing and pumping unit.

Was he nervous about the I-MARS expenditure?

“Sure I was,” he laughs. “But I also was confident we’d be able to put it to work, and you have to take risks as a business owner. That machine has stayed busy and paid for itself in the long run.”

SLIPPING INTO GROWTH

The company’s expansions into spray-lining and then sliplining happened organically, not by design, as customers requested services. Part of the growth stemmed from the fact that many companies don’t like to do confined-space work, Marra notes.

“There’s a lot of risk in what we do, too,” he says. “When things break down

“SPRAY-LINING DEFINITELY OPENED UP MARKETS FOR US. WE GOT A LOT OF SUBCONTRACTING OPPORTUNITIES WITH COMPANIES PERFORMING BIG SEWER REHAB JOBS, WITH SPRAY-LINING JUST A SMALL PART OF THEM.”

NICK MARRA

Aside from making the company more attractive to prime contractors who don’t necessarily want to buy such specialized equipment, Marra says the equipment investments also served another purpose: The high cost can make competitors think twice about entering the niche market.

Moreover, because not many companies are similarly equipped, it allows the business to command a premium price for its services, he says.

and you’re 50 to 100 feet underground, you can find yourself in some real trouble. Or a pop-up rainstorm occurs and all of a sudden you have live sewage flow coming at you.”

Furthermore, the work can be very difficult. For example, the company is currently sliplining roughly 20,000 feet of an egg-shaped, approximately 54-inch-tall by 40-inch-wide sewer line in Lakewood, a suburb of Cleveland. The clay pipeline is falling apart,

A SWEET STRATEGY

Almost every job is difficult when it comes to spray-lining or sliplining aging sewer lines.

But even after rehabbing tens of thousands of feet of sewer lines using these techniques over the years, it’s still easy for Nick Marra, vice president of Marra Services, to pick out the most challenging job the company has ever tackled: sliplining a large-diameter, roughly 1,900-foot-long sanitary sewer interceptor line in Detroit.

“We sliplined a 17 1/2-foot-diameter sanitary concrete pipe that was deteriorating from gas fumes,” he says. “The 16 1/2-foot-diameter pipes we used for sliplining were the largest-diameter pipe we’ve ever worked with. It was a very difficult job — easily our most challenging project, without a doubt.”

In addition, the utility that owns the sewer, the Oakland-Macomb Interceptor Drain Drainage District, wanted to use three different kinds of 16 1/2-foot-diameter, bell-and-spigot pipe for the roughly \$16 million project. They want to see which one performs better over time: fiberglass-reinforced plastic pipe from Channeline International, precast polymer cement pipe from P3 Polymers or carbon-fiber pipe from QuakeWrap.

Channeline pipe manufactured in 7-foot-long sections was used for most of the sliplining — about 1,600 feet. The rest of the pipe was lined with about 180 feet of 6 1/2-foot-long sections of RockHardscp pipe and around 180 feet of 14-foot-long sections of QuakeWrap pipe, Marra says.

Work crews left about 3 feet of space between the end of one kind of pipe and the start of another kind of pipe, then used a spray-lining system from Quadex (owned by Vortex Companies) to seal those transition areas with GeoKrete, a Quadex polymer coating.

“The sewer line had curves in it, too, so Channeline had to custom-make angled pipe sections so it would fit in the curves,” Marra says.

In addition, work crews had to excavate a roughly 35-foot-diameter and approximately 50-foot-deep access shaft, remove the top of sewer line, clean the pipe, make spot repairs before installing the liners and then fill the annular space between the new pipe and the host pipe with a nonstructural, lightweight grout.

It took about two years to repair the section of sewer line, which is part of the sprawling Oakland-Macomb interceptor system. It consists of roughly 42 miles of sanitary sewer lines that serve about 850,000 residents in 25 municipalities in Oakland and Macomb counties. Officials decided to use sliplining because the flow of sewage in the line could be shut off only temporarily for portions of a day.

“We’ve done a lot of sliplining and grouting before, but just not this size or scale,” Marra says. “We enjoyed the challenge, for sure.”

CONTINUED >>

REVOLUTION MAINLINE SEWER SOLUTION

BY REAPER



WATCH
VIDEO



CLEAR
3X MORE
DEBRIS
ON FIRST PASS

USES
25% LESS
WATER

360°
ROTATING
SUB-HEAD
DUAL JETS FOR
DESCALING


CUTTING
POWER

CUT THROUGH ROOTS & BLOCKAGES WHILE DESCALING PIPE WALLS

» For its work, Marra Services typically uses fiberglass-reinforced plastic pipe made by Channeline International or HOBAS Pipe USA or HDPE pipe.

» Nick Marra, owner of Marra Services, stands in front of the company's KAISER PREMIER AquaJet water recycler.



“THERE’S A LOT OF RISK IN WHAT WE DO, TOO. WHEN THINGS BREAK DOWN AND YOU’RE 50 TO 100 FEET UNDERGROUND, YOU CAN FIND YOURSELF IN SOME REAL TROUBLE.”

NICK MARRA

making it a poor candidate for spray-lining, Marra explains.

So instead, company crews are using sliplining technology, in which a pipe slightly smaller than a damaged host pipe is installed in sections inside the host pipe, and the annular space around it is filled with grout. Marra Services usually uses fiberglass-reinforced plastic pipe made by Channeline International or HOBAS Pipe USA or HDPE pipe.

“We’re doing the work under flow, which makes the work very challenging,” Marra says. “Plus our guys can’t even stand up inside a pipe that size. They also have to manually push the pipe-carriers, which we fabricate in-house, because you can’t have a diesel engine running inside a pipe that small. Pushing it by hand is very difficult work.”

The company is using fiberglass-reinforced pipe from Channeline, which comes in 8-foot sections. Crews can install anywhere from 10 to 25 sections per day, depending on how far away they are from the roughly 12 access pits, which are about 20 feet in diameter and range from 20 to 90 feet deep, Marra says.

The project was started late 2023 and is expected to finish toward the end of 2025, he says.

SEWER SOLUTION PROVIDERS

As Marra looks back at the past 18 years, he says he can’t help but be somewhat amazed at how the company has grown after starting out with only two pickup trucks, an enclosed trailer and five employees, including him and his wife. The company currently employs about 40 people.

“It’s very cool to look back and see what we’ve accomplished,” he says.

About five years ago, the company expanded further by opening a facility in Detroit. As such, the business now primarily serves customers in Michigan and Ohio, Marra says.

“A job came up in Detroit that fit our capabilities,” he explains. “We liked working here and we liked the people, so we kept going. Our workforce is pretty evenly split between Detroit and Cleveland.”

Looking ahead, Marra envisions more growth, but probably without further geographic expansion.

“I’d say we’re definitely in growth mode — hoping to get a bit

THE SHOOTER®



Emagineered
SOLUTIONS

1-541 504 0416
theshootercipp.com

THE SHOOTER® US Patent 9,851,041 and others. Emagineered Solutions®, Inc. All Rights Reserved. THE SHOOTER® is a registered trademark of Emagineered Solutions®, Inc.

Photo is courtesy of Onsite Central Ltd

Mobile
Efficient
CIPP



bigger,” he says. “There’s a lot of work out there. The sewers in Detroit and Cleveland are 100-plus years old, so they’re in constant need of repair. And we’re looking forward to being a part of the solution.” c

FEATURED EQUIPMENT

CHANNELINE INTERNATIONAL

www.channeline-international.com

CHEMGROUT

708-354-7112
www.chemgrout.com

GRACO, INC.

612-623-6000
www.graco.com

HOBAS PIPE USA

800-856-7473
www.hobaspipe.com

KAISER PREMIER

970-542-1975
www.kaiserpremier.com
(See ad page 28)

LINK-BELT CONSTRUCTION EQUIPMENT CO.

859-245-3900
www.linkbelt.com

P3 POLYMERS

812-674-2051
www.p3polymersllc.com

PIPEMEDIC BY QUAKEWRAP, INC.

866-782-5397
www.pipemedic.com

PUTZMEISTER AMERICA

800-884-7210
www.putzmeister.com

ROCKHARDSCP INTERNATIONAL

512-557-0075

VOLVO CONSTRUCTION EQUIPMENT

828-650-2000
www.volvoce.com

VORTEX COMPANIES

855-949-3441
www.vortexcompanies.com

XYLEM

855-995-4261
www.xylen.com



POW-R MOLE TRENCHLESS SOLUTIONS

www.powrmole.com

SINCE 1956



PD-33M

LATERAL PIPE BURSTING MACHINE

Replaces pipe from
2" – 6" in diameter

Non-slip, cylinder-
activated jaws prevent
cable damage

60,000 pounds
of pulling force

Easily disassembled
and reassembled
for manhole and
basement applications

Small footprint of
only 20" x 20"

FOR INFORMATION CALL: **800-344-6653**

STEERABLE • COMPACT • ECONOMICAL • PRODUCTIVE

2024 Cleaner

PIPELINE REPAIR AND REHABILITATION

DIRECTORY

	RELINING	UV CIPP	BURSTING	LATERAL REHABILITATION	MANHOLE REHABILITATION	SEALING/ SPOT REPAIR	REINSTATEMENT CUTTERS	GROUTING
<p>APEX CIPP SOLUTIONS 4545 Samuel St., Sarasota, FL 34233 855-997-0524 • 997-300-0441 www.ApexCIPP.com • info@apexcipp.com</p>	✓	✓		✓		✓	✓	
<p>ARIES INDUSTRIES, INC. 550 Elizabeth St., Waukesha, WI 53186 800-234-7205 www.ariesindustries.com • sales@ariesindustries.com</p>				✓			✓	✓
<p>AVANTI INTERNATIONAL 822 Bay Star Blvd., Webster, TX 77598 800-877-2570 • 281-486-5600 www.avantigrout.com • info@avantigrout.com</p>				✓	✓	✓		✓
<p>BLACKHAWK TECH 910 W Wilson St., Batavia, IL 60510 630-326-9061 www.blackhawktechsupply.com ben@blackhawktechsupply.com</p>	✓	✓		✓		✓	✓	
<p>BRAWO SYSTEMS USA 5126 S Royal Atlanta Dr., Tucker, GA 30084 240-796-5007 www.brawosystems-usa.com contact.usa@brawosystems.com</p>	✓	✓						
<p>CHERNE 2300 Vierling Dr. W, Shakopee, MN 55379 800-843-7584</p>	✓			✓	✓			
<p>CUES, INC. 3600 Rio Vista Ave., Orlando, FL 32805 800-327-7791 • (f) 407-425-1569 www.cuesinc.com • salesinfo@cuesinc.com</p>				✓	✓	✓	✓	✓
<p>DURACABLE MANUFACTURING CO. 300 Ashworth Rd., West Des Moines, IA 50265 800-247-4081 www.duracable.com • sales@duracable.com</p>	✓	✓		✓		✓	✓	
<p>EMAGINEERED SOLUTIONS INC 1830 SE 1st St., Redmond, OR 97756 541-504-0416 www.theshootercipp.com • ray.i@emagineered.com</p>	✓	✓						
<p>FLOW-LINER SYSTEMS 4830 Northpoint Dr., Zanesville, OH 43701 800-348-0020 • 740-453-9387 www.flow-liner.com • info@flow-liner.com</p>	✓			✓		✓	✓	
<p>FORBEST PRODUCTS CO. 44130 Old Warm Springs Blvd., Fremont, CA 94538 877-369-1199 info@forbestusa.com</p>	✓				✓	✓		



RELINING UVCIPP BURSTING LATERAL REHABILITATION MANHOLE REHABILITATION SEALING/ SPOT REPAIR REINSTATEMENT CUTTERS GROUTING



SEE AD ON PAGE 9

FORMADRAIN INC.
10121 Boul Pkwy., Anjou, QC H1J 1P7 Canada
514-352-6911
carl@formadrain.com

✓

✓

✓

✓



SEE AD ON PAGE 7

HAMMERHEAD TRENCHLESS
500 S C.P. Ave., Lake Mills, WI 53551
800-331-6653 • 920-648-4848
www.hammerheadtrenchless.com
info@hammerheadtrenchless.com

✓

✓

✓

✓

✓

✓

SEE AD ON PAGE 67

HOTJET USA
14773 S Heritage Crest Way, Riverton, UT 84065
800-624-8186 • 801-545-0777
www.hotjetusa.com • kris@powerlineindustries.com

✓



INFRASTRUCTURE REPAIR SYSTEMS, INC.
4301 34th St. N, Ste. A, St. Petersburg, FL 33714
877-327-4216
www.irsi.net • irsi@irsi.net

✓

✓

✓

SEE AD ON PAGE 27

IPP SOLUTIONS, LLC
PO Box 3879, Avon, CO 81620
970-444-5655
www.ippsolutions.com • info@ippsolutions.com

✓

✓

✓

✓



LOGIBALL INC.
4210 Jean-Marchand, 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 19



MAXLINER
901 Hollie Dr., Martinsville, VA 24112
877-426-5948 • 276-656-1225 • (f) 276-656-0419
www.maxlinerusa.com • info@maxlinerusa.com

✓

✓

✓

✓

✓

SEE AD ON PAGE 3

NUFLOW TECHNOLOGIES
1270 W Mission Ave., Escondido, CA 92029
866-430-2134
www.nuflow.com • info@nuflowtech.com

✓

✓

✓

✓

✓



OMEGA LINER COMPANY, INC.
515 Noid Rd., Canton, SD 57013
605-558-1020
info@omegauvpipe.com

✓

PE EQUIPMENT
485 Ash Rd., Kalispell, MT 59901
406-499-8136
www.pe-equipment.com • info@pe-equipment.com

✓

✓

SEE AD ON PAGE 55

PICOTE SOLUTIONS
777 W Pinnacle Peak Rd., Phoenix, AZ 85027
864-940-0088
www.picotesolutions.com • sales@picotesolutions.com

✓

✓

✓

✓

✓



SEE AD ON PAGE 24

PIPELINE RENEWAL TECHNOLOGIES
111 Canfield Ave. Ut. C, Randolph, NJ 07869
866-936-8476
www.pipelinert.com • pipelinert@idexcorp.com

✓









✓

✓

✓

✓

PIPELINE REPAIR AND REHABILITATION

	RELINING	UV CIPP	BURSTING	LATERAL REHABILITATION	MANHOLE REHABILITATION	SEALING/ SPOT REPAIR	REINSTATEMENT CUTTERS	GROUTING
 <p>POW-R MOLE TRENCHLESS SOLUTIONS 1400 Commerce Pkwy., Lancaster, NY 14086 800-344-6653 • 716-683-2486 www.powrmole.com</p> <p>SEE AD ON PAGE 37</p>			✓	✓				
 <p>PRIME RESINS 2291 Plunkett Rd. NW, Conyers, GA 30012 800-321-7212 • 770-388-0626 • (f) 770-388-0936 www.primeresins.com • info@primeresins.com</p> <p>SEE AD ON PAGE 67</p>				✓	✓	✓		✓
 <p>RAPIDVIEW IBAK NORTH AMERICA 1828 W Olson Rd., Rochester, IN 46975 800-656-4225 • 574-224-5426 • (f) 574-223-7953 www.rapidview.com • sales@rapidview.com</p>							✓	
<p>SEE AD ON PAGE 41</p> <p>RATECH ELECTRONICS, LTD. 260-7 Spinnaker Way, Concord, ON L4K 4P9 CANADA 800-461-9200 • 905-660-7072 • (f) 905-660-1519 www.ratech-electronics.com • sales@ratech-electronics.com</p>						✓		
 <p>RELINE AMERICA 116 Battleground Ave., Saltville, VA 24370 866.998.0808 276-496-4000 info@relineamerica.com • https://relineamerica.com/</p> <p>SEE AD ON PAGE 6</p>	✓	✓						
<p>RODDIE INC. 4457 Trumble Creek Rd., Columbia Falls, MT 59912 888-406-3821 • 406-730-1565 www.roddieunderground.com sales@roddieunderground.com</p>			✓					
 <p>SOURCE ONE ENVIRONMENTAL 300 S Dayton St., Davison, MI 48423 810-412-4740 info@sleonline.com</p>	✓	✓		✓	✓	✓	✓	✓
 <p>SPARTAN TOOL 1618 Terminal Dr., Niles, MI 49120 800-435-3866 www.spartantool.com • customerservice@spartantool.com</p> <p>SEE AD ON BACK COVER</p>	✓	✓	✓	✓		✓	✓	
 <p>THE STRONG COMPANY, INC. 4505 Emmett Sanders Rd., Pine Bluff, AR 71601 800-982-8009 • 870-535-7617 • (f) 870-850-6933 www.strongseal.com • info@strongseal.com</p>					✓			
 <p>TRIC TOOLS, INC. 415 Pendleton Way, Oakland, CA 94621 888-838-8742 • n510-865-8742 www.trictools.com • johnrafferty@trictools.com</p> <p>SEE AD ON PAGE 61</p>			✓	✓				
<p>SEE AD ON PAGE 29</p> <p>TRUGRIT TRACTION, INC. PO Box 2084, Winter Park, FL 32790 619-797-7371 www.TruGritTraction.com • tomr@trugrittraction.com</p>		✓					✓	
<p>SEE AD ON PAGE 50</p> <p>TRY TEK MACHINE WORKS, INC. 250 N Main St., Jacobus, PA 17404 412-804-1113 www.trytek.com • dcburger@trytek.com</p>	✓						✓	

	RELINING	UV CIPP	BURSTING	LATERAL REHABILITATION	MANHOLE REHABILITATION	SEALING/ SPOT REPAIR	REINSTATEMENT CUTTERS	GROUTING
WARRIOR USA LLC (THERMOFORM) 1400 Commerce Pkwy., Lancaster, NY 14086 716-601-7760 www.thermoformliner.com	✓			✓				
WATERLINE RENEWAL TECHNOLOGIES 25 NW Point Blvd., Ste. 510, Elk Grove Village, IL 60007 847-457-1810 www.waterliner renewal.com • info@waterliner renewal.com	✓	✓		✓	✓	✓		



WARRIOR USA LLC (THERMOFORM)
1400 Commerce Pkwy., Lancaster, NY 14086
716-601-7760
www.thermoformliner.com



WATERLINE RENEWAL TECHNOLOGIES
25 NW Point Blvd., Ste. 510, Elk Grove Village, IL 60007
847-457-1810
www.waterliner renewal.com • info@waterliner renewal.com

Cleaner

FOR DRAIN AND PIPE CLEANING, INSPECTION AND REHABILITATION PROFESSIONALS

CLAIM YOURS TODAY AT WWW.CLEANER.COM



LIGHTS, CAMERA, ACTION: THE HD ERA IS HERE



Plumber's Elite
2" - 10" drainlines



Plumber's Helper Jr.
1" - 6" drainlines

MAKE YOUR PIPELINE INSPECTIONS CRYSTAL CLEAR WITH THE NEW **RATECH HD SEWER PIPE INSPECTION CAMERAS**

- ✓ 1080p HD self-leveling camera (1.375" dia.), TRUE HD
- ✓ Bright and clear Hi-res in-pipe imaging
- ✓ MP4 recording format
- ✓ Built-in battery cradle for external power using power-tool batteries
- ✓ USB recorder with hard-drive
- ✓ 10.4" HD sunlight-readable LCD
- ✓ Wi-Fi connectivity
- ✓ 100'-400' Premium Gel Rod™ Push cable
- ✓ Keyboard, footage counter, 512Hz sonde
- ✓ Authorized service centers nation-wide
- ✓ 5/8" and 3/4" Hi-res micro camera compatible



Proudly Serving Customers Like You Since 1980

1-800-461-9200 • WWW.RATECH-ELECTRONICS.COM

SLIPLINING CHALLENGE

City of Portland and its hired contractors successfully take on the task of rehabbing a 4,000-foot-long section of century-old deteriorating stormwater infrastructure // By Giles Lambertson

THERE ARE LARGE-DIAMETER pipeline projects in which huge and heavy sections of pipe are wrestled and fitted into place. Then there are confined-space, close-tolerance pipe-laying projects where exactness and precision are paramount engineering concerns.

The Portland Bureau of Environmental Services simultaneously undertook both in 2020. The Oregon city's \$11 million rehab of a 4,000-foot-long section of stormwater line was a test of engineering imagination, administrative expertise and the cooperative spirit of municipal and private sector organizations.

"It was a toughy," says Don Poletski, construction manager for the Bureau of Environmental Services. "The pipe fought us every step of the way."

"All the way" constituted about 4,000 feet through a 100-plus-year-old brick tunnel that was less than an inch larger in places than the sliplined pipe, contained several challenging curves and was under a constant flood watch.

The good news: Despite an onslaught of challenges, the undertaking was completed on schedule, under cost and without loss of life. Today, the rehabbed segment of the city's stormwater system is functioning "exceptionally well," Poletski says. "We knew if we could

COMPANY James W. Fowler Co.

LOCATION Portland, Oregon

PROJECT Sliplining a 4,000-foot-long section of deteriorating century-old brick stormwater tunnel



get it in there that it would perform really well. And it has."

GETTING LUCKY

It's called the Taggart Outfall and is a 6-mile-long section of stormwater pipe constructed of brick over a century ago in a southeast section of Portland. The area was undeveloped in 1908 when construction crews tunneled through it, loosening soil with dynamite and hauling it away with

« A 108-inch-diameter section of fiberglass-reinforced pipe is maneuvered into place during sliplining of the Taggart Outfall in Portland, Oregon.



◀ The 4,000-foot-long project required 300 sections of pipe. It was a slow process –14 sections of pipe were the most installed in any one day.

✔ The 6-mile-long Taggart Outfall was built of brick 116 years ago.



horse-drawn carts. In places, the tunnel resembled a mining shaft a hundred feet deep with an air shaft running down to it to make it breathable.

In this underground space, the original construction crew methodically laid three concentric circles of brick against a wood form, working in groundwater that infiltrated the tunnel constantly. The subterranean storm sewer meandered with the topography and, as it approached its terminus with the Willamette River, almost doubled in size to nearly 10 feet in diameter. The 4,000-foot section most urgently needing repair was in this larger-diameter portion of the pipe.

“A hundred years is a long time,” Poletski notes. “The pipe had heavily deteriorated. It was safe enough to put workers inside it, but it was near the end of its service life.”

Planning to rehabilitate the pipe began in 2014 when the city selected a design consultant, Jacobs Engineering. Over the next

ALLAN J. COLEMAN

SINCE 1905

5725 N. Ravenswood Ave. • Chicago, IL 60660
6003S 40th St., Ste. #5 • Phoenix, AZ 85042

Call Us Today! Chicago 773-728-2400
Phoenix 602-638-0600

OLDEST NAME IN THE BUSINESS — Over 115 YEARS OLD

info@allanjcoleman.com • www.allanjcoleman.com

DIRECT HIT®
The C38rs
The safest way to enter an unknown blockage

Products Manufactured By
JETTERS
Eagle 300 Trailer Jetter
20 GPM @ 4000 PSI

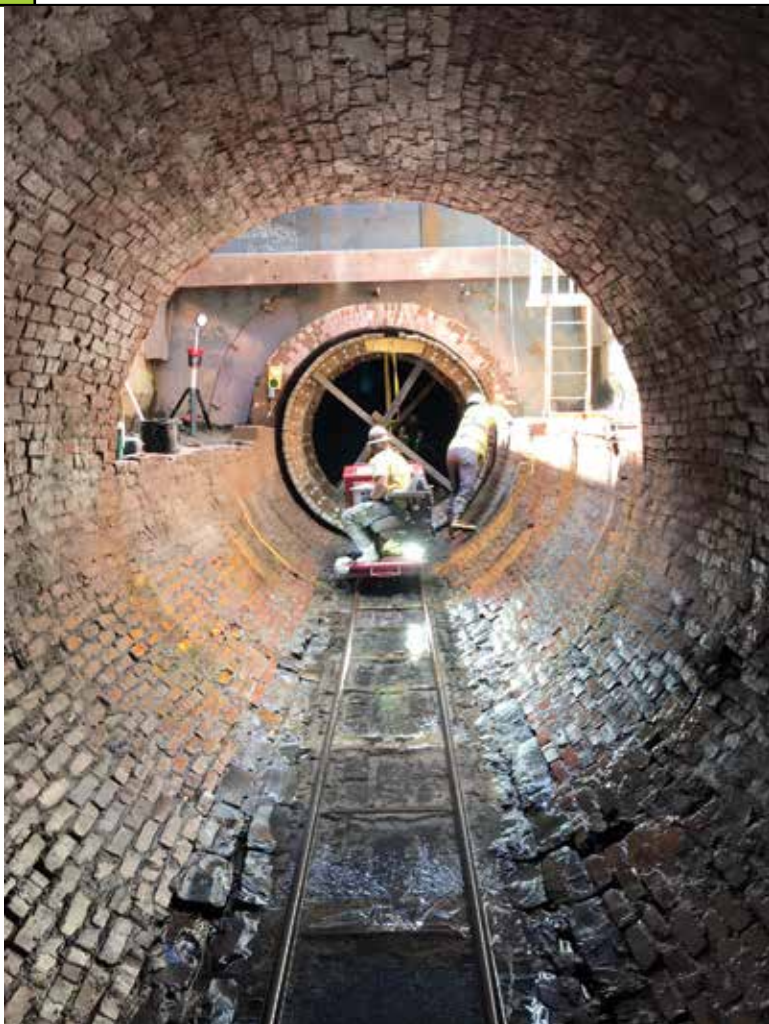
Products Manufactured By
JETTERS
Mountable or Portable - Skid/Cart
9 gpm @ 4000 psi

PICOTE Stocking In Both Locations

Repair Center for:
RIDGID ProPress & SeeSnake, Gen-Eye, Electric Eel, and Hathorn cameras

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

TOUGH JOB



▲ To maneuver sections of pipe into place, a battery-powered mining locomotive ran on 2-inch tubular steel tracks bolted and grouted into the bottom of the brick sewer.

half-dozen years, engineering work on the project was split about 50-50 with the bureau's in-house engineering staff. Fourteen different methods of repairing the pipe were considered by the team. Because the area above the sewer had fully developed in the intervening century — populated with 18,000 homes and 1,500 industrial properties — open trenching was out of the question. One solution — bolting together short sections of curved steel plating inside the brick sewer — was possible, but not a popular option.

“Nobody wanted to do that,” Poletski says. “It was a 20th-century solution and had we chosen that method, we would still be there bolting plates together.”

Furthermore, the thick steel plating would have reduced the diameter of the sewer, lowering the flow capacity of a line already running full at times. Then the project team had some luck. A

“THE MOST IMPRESSIVE ACCOMPLISHMENT WAS THE TEAMWORK WE ALL DEVELOPED. WE ALL WANTED THE BEST SOLUTION GIVEN THE CONSTRAINTS. WE BELIEVED IN EACH OTHER. WHEN YOU HAVE A TEAM THAT HAS BOUGHT IN, EVERYTHING IS SOLVABLE.”

DON POLETSKI

commercial property that straddled a segment of the pipe and had been scheduled for development unexpectedly became available.

“We were able to use it after all and it totally changed the picture,” Poletski says.

This good fortune let the engineers pursue a first-choice method of repair: sliplining the brick pipe with short sections of fiberglass-reinforced pipe inserted through a hole opened on the property. The low-bid contractor, James W. Fowler Co., acquired a lease on the land and went to work. Removing some 40 feet of soil above the pipe, the contractor exposed the three-ply brick sewer and sawed open the top of it.

But sliplined pipe still raised the same concerns of a reduced flow in the sewer. For 18 months, the issue was researched using flow monitors and computer modeling, a period Poletski recalls with evident exasperation.

Finally, it was determined that, though the diameter of the pipe would be less, the interior surface of the fiberglass-reinforced pipe was slicker than that of the brick face of the old sewer. Consequently, the flow rate would be slightly increased, offsetting the lessened capacity. Reassured, engineers pressed on.

SLOW PROCESS

With the old sewer ready to receive the new pipe, things got interesting. The issue was tightness. A \$200,000 laser scan of the sewer had determined how long a section of fiberglass-reinforced pipe could be maneuvered through the old brickwork. The answer was an 8-foot-long pipe with an outside diameter of about 108 inches.

To test this premise, a wood mock-up of the pipe was constructed, assembled inside the old brick sewer and winched through the sewer. “Pinch points” were painstakingly navigated, including the curves. The biggest issue was a 270-foot section where brickwork had been reinforced using the aforementioned bolted-together curved steel plating. The internal strengthening was required when an industrial building was constructed in 1959 on the property above the sewer.

CONTINUED >>

Your **ONE- STOP SHOP**

EXPERIENCE THE POWER OF CLARITY
WITH OUR NEW OZ4-HD CAMERA →

- Video Pipeline Inspection Equipment & Vehicles
- Manhole Inspection Equipment
- Condition Assessment & Asset Inspection Software
- Grouting Equipment & Vehicles

CUES is proud to provide CCTV pipeline inspection solutions by combining industry know-how, top-of-the-line equipment, and the most responsive customer service in the industry. CUES offers the highest caliber equipment available with a streamlined, one-stop shop for all your pipeline inspection, rehabilitation, software, and pipe profiling needs.



SCAN TO REQUEST A
FREE OZ4-HD DEMO



800.327.7791 | salesinfo@cuesinc.com

[t](#) [f](#) [v](#) [in](#)
www.cuesinc.com

We have sales reps in every US state as well as Internationally. Visit the CUES website to find your local representative!

TOUGH JOB

Clearance of the mock-up through this steel section was less than an inch. It required the grinding down of the heads of some bolts to allow passage, yet it did pass through, giving a final green light to engineers. A full week was spent moving the first fiberglass-reinforced pipe section through the narrowed area.

How to move the pipe sections through the old sewer then became the problem. The contractor had planned to use a modified telehandler. However, even an expert equipment operator could find it daunting to maneuver a 3-ton, 8-foot-long section of pipe through a tunnel just a few inches larger in diameter without periodically ramming the leading edge of the pipe into the brickwork.

The solution was a locomotive. Specifically, James W. Fowler Co. suggested using a battery-powered mining locomotive that would run unerringly on 2-inch tubular steel tracks bolted and grouted into the bottom of the brick sewer. A LIDAR scan determined exact placement of the tracks to keep the locomotive and sections of pipe centered and away from surrounding brick walls. A month was required just laying the track.

The locomotive solution was especially appealing because this process of transporting pipe sections would have to be replicated 300 times — that's how many individual sections were to be installed.

"The locomotive gave us a solution that was repeatable," Poletski says.

A battery-powered locomotive, instead of diesel-powered, was necessary because of the confined space in which it would be operating.

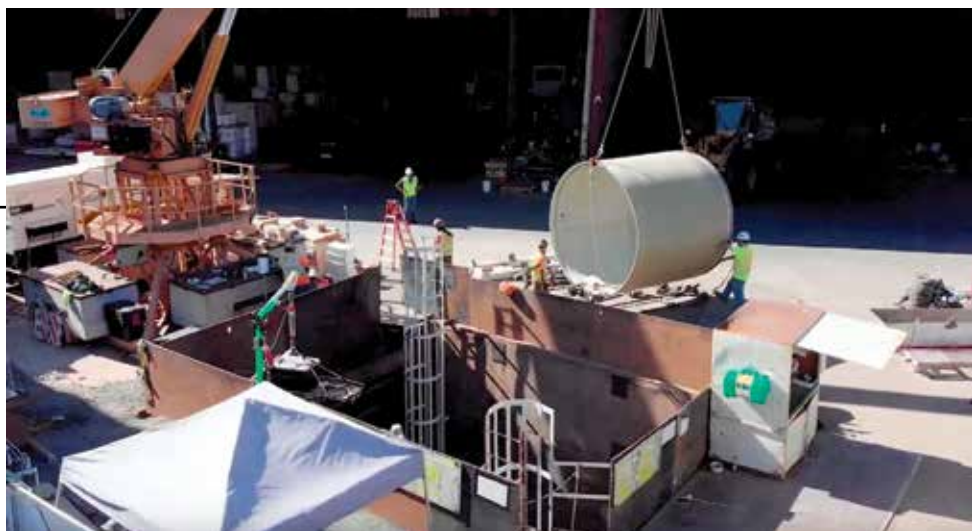
Insertion of the fiberglass-reinforced pipe began with crews working 24/7. It was a slow process. Poletski says 14 sections of pipe were the most installed in any one day. The curves in the line required shorter sections of pipe — the shortest being 3 feet in length — and with different bevels on inside and outside edges.

"It was a tremendous challenge fitting the pipes together," Poletski says.

Ends of pipe were seated securely using a jacking system. Every 100 feet, grout was inserted between the outside of the sliplined pipe and the old brick sewer, effectively bonding the two structures for extra stability.

COMING TOGETHER

The project experience was made more intense for everyone by the arrival of COVID just as actual construction began. The immediate impact was limitations on gatherings by engineering staff and some virtual management of team members. The pandemic



▲ A commercial property that straddled a segment of the pipe and had been scheduled for development unexpectedly became available, allowing officials to pursue the sliplining solution.

also sequestered many residents in their homes, which led to more construction noise complaints than usual. But Portland residents were generally supportive of what they came to understand was not a typical utility project.

A wildfire outside Portland also added to the headaches at one point, reducing air quality to dangerous levels. But flooding was the biggest chronic worry. The large-diameter storm sewer served a watershed that was capable of filling the nearly 10-foot-diameter sewer with water within an hour. To reduce the flood danger, the project was scheduled during a relatively dry season in rainy Oregon, with construction crews working 24/7 to get the job done during the season. Weather conditions were constantly monitored and the approach of a summer storm had people scrambling to get out of the pipe.

"One time a random storm came in and we had to evacuate," Poletski recalls. "We got everyone out of the tunnel eight minutes before it flooded."

A related aggravation was the occasional illicit dumping of toxic substances into the sewer at night. The pipe always had 3 or 4 inches of flow, which workers got used to having at their feet, but the water would carry the toxic stuff to them. One night an apparent 55-gallon dump of toxic fluid led to an evacuation.

"The most impressive accomplishment was the teamwork we all developed," Poletski says. "We all wanted the best solution given the constraints. We believed in each other. When you have a team that has bought in, everything is solvable."

"It was really, really important to come up with the best technical solution, one that would give the best service life and so on. We accomplished that despite an incredible amount of adversity. The pandemic. A massive log fire at one point when air quality was bad. We succeeded through teamwork, trust and talent, the three Ts. It's said you can't have all that in a low-bid environment. We proved that you can." c

THE CABLE CENTER • 1-800-257-7209



CALL FOR USED EQUIPMENT

\$665



MiniRooter Pro-Basic
No Cable, No Cutters.
Call for complete kit availability.

\$7400



SL-GXP-E Camera System
7" LCD; USB & Wi-Fi recording;
GenPak Battery Pack for M-18 battery use
(battery not included); Counter, Self-Leveling
Color Camera Head, 200' of push rod.

Free Delivery

\$6,400



SL-GPW-E
200' Standard GenEye
WiFi Pod

Free Delivery

\$2,375



**Speedroooter
S92-Basic**
No Cable, No Cutters.
Call for complete kit availability

WE HAVE COMPLETE USB, SD, X-POD, OR POD SYSTEMS IN STOCK

\$1,700



T-4 Basic
No Cable, No Cutters.
Call for complete kit availability

\$8,800



JM-3080
No Hose, No Nozzles
Call for complete kit availability

\$24,711



Kit
1/2" x 400' Hose
Nozzle Set

RALLY CRY

Inspiring others is an important part of business leadership and to do so there are certain action items that should be part of your everyday practices // By Jim Bouchard

PEOPLE PERFORM AT THEIR BEST when, and only when, they know their leaders care, their work has meaning, and they have the chance to learn, grow, and develop. You've got to inspire, empower and guide them.

Let's focus on the first discipline in this process — inspiring employees.

“Inspire” is defined as the discipline of reaching people's hearts. Contrast that with “motivation,” which is actually appealing to people's heads. Rather than trying to create transient material reasons to reach expectations, focus on connecting on a deep emotional level to inspire people to blow expectations out of the water and embrace a continual process of learning, growth and higher levels of performance.

The biggest challenge encountered in teaching leaders on how to inspire others is the false assumption that to inspire, you need to do something grand. Too often you look for that uplifting speech, the compelling memo, or the occasional heroic act. All of this is fine when it happens, but inspiration should be a daily practice. And it more often takes on an unassuming form and is quite often unnoticed in the moment.

Here are five action steps you can take to inspire people to do their best.

#1 LEAD BY EXAMPLE

There is nothing more inspiring to others than your example. It can mean you made a great, impactful speech or did something

amazing, but more often it is what you do every single day. It's what you do that people can count on.

Simply put, model the behavior you expect from others. “Do as I say, not as I do” does not work on children, and it certainly doesn't work with the people who look to you for leadership.

Make a list of the most important characteristics, behaviors, expectations and traits you expect from your people. Make sure you check all the boxes on that list yourself.

#2 SHOW THEM YOU CARE

Frankly, if you don't care, don't bother.

Do you take the time to show a genuine interest in the people you employ? This means understanding their personal goals, interests, challenges and concerns. Carve time into your schedule to meet with reports -- not just to talk business but to develop a deeper understanding of them as human beings.

#3 EXPRESS APPRECIATION

How did you feel the last time someone thanked you for a job well done? On the flip side, studies show that a lack of appreciation — real or perceived — is one of the most common reasons given for disengagement or leaving a job.

Even the smallest expression of gratitude can elevate a person's mood, mindset and performance. Public recognition and acknowledgment can inspire them to unimagined levels. Too often leaders lose the opportunity to share gratitude simply because there are too many other priorities at any particular time. Again, gratitude must be a discipline. You have to prioritize it and carve it into your leadership practice.

It's amazing how much a few words of encouragement and appreciation can inspire.

#4 SHARE

Leadership is sharing. A leader shares. Almost anything else you talk about regarding leadership

CONTINUED >>

THE BIGGEST CHALLENGE ENCOUNTERED IN TEACHING LEADERS ON HOW TO INSPIRE OTHERS IS THE FALSE ASSUMPTION THAT TO INSPIRE, YOU NEED TO DO SOMETHING GRAND... IT MORE OFTEN TAKES ON AN UNASSUMING FORM AND IS QUITE OFTEN UNNOTICED IN THE MOMENT.

HOOK UP

With All Your
Equipment
Needs



Call Toll-Free
1.800.325.3730
www.MilwaukeeRubber.com

JOIN

THE CONVERSATION.

THE CAMARADERIE.

THE COMMUNITY.

Cleaner

- facebook.com/CleanerMag
- x.com/CleanerMagazine
- youtube.com/CleanerMagazine
- linkedin.com/company/cleaner-magazine
- instagram.com/cleanermag

WORKING WELL UNDER PRESSURE

Building Drain and Sewer Equipment since 1981.

PRICES GOOD THROUGH NOVEMBER 1ST OR WHILE QUANTITIES LAST

NEW

4008H Power Unit	
»8.2 gpm @ 4000 psi	»400' x 3/8" Jet Hose
»800 cc EFI Honda Engine	on DC Powered Reel
Just Add A Tank!	
\$12,719 plus freight	

3012H Power Unit	
»12 gpm @ 3000 psi	»400' x 1/2" Jet Hose
»800 cc EFI Honda Engine	on DC Powered Reel
\$13,159 plus freight	

NEW

4008H Compact Skid	
»8.2 gpm @ 4000 psi	»400' x 3/8" Jet Hose
»800 cc EFI Honda Engine	on DC Powered Reel
(100 GALLON TANK)	
\$14,129 plus freight	

NEW

3012H Compact Skid	
»12 gpm @ 3000 psi	»400' x 1/2" Jet Hose
»800 cc EFI Honda Engine	on DC Powered Reel
(100 GALLON TANK)	
\$14,579 plus freight	

NEW

RCJ4008H	
»8.2 gpm @ 4000 psi	»200' x 3/8" Jet Hose
»800 cc EFI Honda Engine	on Manual Reel
(30 GALLON TANK)	
\$8,539 plus freight	

NEW

LJ4008H	
»8.2 gpm @ 4000 psi	»200' x 3/8" Jet Hose
»800 cc EFI Honda Engine	on Manual Reel
(30 GALLON TANK)	
\$8,399 plus freight	

VM4008H	
»8.2 gpm @ 4000 psi	»50' x 3/8" Washdown
»690 cc Honda Engine	Hose on DC Reel
(130 GALLON TANK)	
\$13,399 plus freight	

VM3012H	
»12 gpm @ 3000 psi	»400' x 1/2" Jet Hose
»800 cc EFI Honda Engine	on DC Reel
(130 GALLON TANK)	
\$13,899 plus freight	

TRAILER MODELS AVAILABLE through 25 gpm @ 4000 psi

All Jets Shown Come with Pulse Valve, 2 Jet Nozzles, Tool Box, Gloves, Safety Glasses, Tip Cleaner, Tiger Tail, Wash Down Trigger Gun with Nozzles.

Pressure Washers & Drain Jetting Equipment

We Build Electric, Gas and Diesel powered models up to 4000 psi, flows up to 40 gallons per minute. Don't see exactly what you want... We will custom build exactly what you want!

800-648-5011 | www.camspray.com | sales@camspray.com

centers on what you're willing to share and how. If you want to touch people's hearts, there are some essentials you must share unconditionally: respect, trust and loyalty.

Unconditionally means no expectation of return. Too often you'll hear something like this: "I'll show respect when that person deserves it." No. You're a leader. You go first.

First and foremost, respect, trust and loyalty are a leader's most important assets. What can you possibly accomplish without the respect, trust and loyalty of the people you employ?

To get these things, you must give. You will not always get a direct return on your investment here. But as you make sharing these things a discipline, you will inspire those who feel empowered by your expression of respect, trust and loyalty. In those cases where there is no return or worse, you will inspire people with your consistency, generosity and courage.

Two other things that inspire people when you share are power and authority. Now these may not be unconditional. You need to manage how much power and authority you share, not to be proprietary, but to ensure that you don't set up people for failure if they're not yet ready to take on more.

Having said that, power and authority only expand through sharing, unless of course you're working all by yourself. The very act of trusting others with more power and authority is incredibly inspirational.

Make a list of what you're willing to share and with whom. Then do it.

#5 GIVE THEM TIME

Everyone knows that the most precious commodity anyone has is time. Any moment you're willing to give another person can inspire not only that person, but others as they see your willingness to share your time.

Make sure it's sincere. This is not just time for time's sake. Use this time to implement any or all of the other action steps on this list. More often than not, have an objective or goal in mind, though it's not bad once in a while to focus more on showing a personal interest or just see what happens in the moment.

Again, this can be pushed aside in a busy schedule. It must be a priority to meet with employees on a regular basis and give them some of your time.

Long ago the Chinese philosopher Lao Tzu said, "The wise man does not lay up his treasures. The more he gives to others, the more he has for his own."

This is a powerful strategy for leadership. You'll notice that every one of these action steps involves giving and sharing. What you are sharing as a leader, ultimately, is your "self." Sharing your true self with others is what leadership is all about. That's what will most inspire others to share in kind.

As a leader, your goal is to touch the hearts of many, not just one. That's how you rally people together to advance the cause of the group. And that's a leader's most fundamental job. **c**

TRYTEK
MACHINE WORKS, INC.

Serving the Industry for over 30 Years!

T150 Mainline Cutter
Access 5" to 24"

- Reinstatement Cutters
- Water/Air Inversion Units
- Liner Inversion Products
- Air Routers & Collets
- Accessories
- Competitor Parts
- Repairs and Rebuilds

T80 Small Pipe Flex Cutter
Navigate 3" to 6" pipe around standard 90° elbows

Phone: 717-428-1477 Email: trytek@trytek.com www.trytek.com

ABOUT THE AUTHOR

Jim Bouchard is an internationally recognized speaker, leadership activist and founder of The SENSEI LEADER Movement. He's the author of eight leadership books and hosts *Walking The Walk*, a podcast highlighting compassionate, engaged leaders from all areas of business, diverse cultures and experiences. Bouchard's programs are an inspirational and interactive exploration into the importance of human-centric leadership. Visit armstrongspeakers.com.



vCam Mobile Controller App



vCam-6 HD Inspection System
Range: 3 to 10-inch



vCamMX-2* Mini Inspection System
Range: 2 to 4-inch



vCamDrain System
Range: 1.5 to 3-inch



vCam Inspection Cameras
the clear choice for video inspection

Call us for a no-obligation on-site demonstration! **1-800-446-3392**



Visit our YouTube channel to see actual videos

Vivax-Metrotech Corporation

3251 Olcott Street, Santa Clara, CA 95054, USA

+1-408-734-3880

SalesUSA@vxmt.com

www.vivax-metrotech.com

A BRIGHT FUTURE

FEATURED IN AN ARTICLE?

Make the most of it!
REPRINTS AVAILABLE:
Electronic reprints

Go To Cleaner.com/order/reprint for articles and pricing

ROOTX® GREASE-X®

GET THE F.R.O.G. OUT
[FATS. ROOTS. OIL. GREASE]

With both RootX® and Grease-X® in your toolkit, F.R.O.G. doesn't stand a chance.

From roots, to fats, oils and grease, RootX® has the products to help you keep municipal lines and laterals clear and flowing, guaranteed.

To purchase RootX®, or to learn more, visit www.RootX.com, or talk to your RootX® representative at 1-800-844-4974.

ROOTX® 30 YEARS
THE RIGHT SOLUTION. RIGHT NOW.

PIPE LINING METHODS AND PROJECTS

By Craig Mandli

» CIPP EQUIPMENT AND MATERIALS

1 // EMAGINEERED SOLUTIONS THE SHOOTER

THE SHOOTER from **EMAGINEERED SOLUTIONS** is a continuous air-inverter for CIPP. **THE SHOOTER 12** has a range of 4 to 12 inches and up to 15 inches with the conversion kit, as well as a knife gate for after the liner tail passes. It comes with either the self-lubricating hand truck or basic non-oiler cart. **THE SHOOTER 24** for 15 to 24 inches is trailer-mounted and comes with a knife gate and remote operating station on the fender. An optional conversion kit expands its range from 6 to 24 inches. Additional equipment offered includes full steam packages with portable dry steam generators, steam hose, A and B stations, water cure flanges and LED UV Y adapters. **541-504-0416; www.theshootercipp.com**



2 // MAXLINER GHOSTLINER

GhostLiner CIPP liner from **MaxLiner** becomes transparent during wet-out and reduces LED light-cure times without sacrificing strength. It offers a faster and higher quality cure due to transparency once saturated and negotiates pipe bends up to 45 degrees. It is a uniquely manufactured synthetic fiber felt with a TPU coating designed to maximize LED light-cure capabilities. Tube forming and seam bonding are achieved by an overlocking chain-stitched seam with an extruded taped joint, creating a high-performance impermeable liner designed for sweeping bends up to 45 degrees and very minimal stretch. **877-426-5948; www.maxlinerusa.com**



» HYDROEXCAVATION

3 // DITCH WITCH WARLOCK W12

The **Warlock W12** from **Ditch Witch** is a PTO-driven vacuum excavator that offers dual 600-gallon saddle tanks and a 12-cubic-yard debris tank, bringing increased capacity and performance to the job site. Available with a 5,000 cfm blower and 27 inches Hg of vacuum power, it helps operators take on bigger jobs and maximize job site uptime. **580-336-4402; www.ditchwitch.com**



4 // DYNABLAST PRATISSOLI KTX SERIES

The **Pratissoli KTX Series** water pump, distributed by **Dynablast**, is designed for hydroexcavation. The **KTX24A** offers 13.5 gpm at 3,625 psi and 1,450 rpm and the **KTX28A** offers 18.4 gpm at 2,900 psi and 1,450 rpm. It has run dry seals with a Kevlar Graphite rope, a 420 stainless steel manifold for protection from cavitation, and a self-lubricating design so that no oiler kit or weekly oiling is required. Its symmetrical crankcase makes it easy to reverse shaft the pump. Internal fins on the aluminum crankcase provide cooling to lower oil temperature. A tapered roller bearing improves lateral loading. The two-bore ceramic plungers are thicker ceramic on the water end to prevent thermal shock. **905-867-4642; www.dynablast.ca**



5 // GAPVAX VHX SERIES

The **GapVax VHX Series** hydrovac is designed for optimal weight distribution, improved safety features and improved performance. The debris body is 7.5 cubic yards, offering a 15,000-pound payload. The low profile (12 feet, 2 inches) makes it suitable for all-around hydroexcavation projects. The vacuum system with single mode wet/dry filtration is quiet, reliable and simple, according to the maker. It includes a 4,000 cfm positive displacement blower, 600 hp transfer case with air-shift engagement and ultra-quiet air injection, and discharge silencers. This filtration design includes a top-loading debris tank, 14-inch stainless steel float-ball shut-off, efficient centrifugal cyclone separators and long-lasting filter bags. It is equipped with a 12 gpm, 3,000 psi water system with optional 200 cfm air compressor system. A full-tilting debris body, over 45-degree dump angle and full-opening tailgate promote fast unloading and easy clean-out. The 8-inch telescoping VHX boom offers a 22-foot reach with 15-degree downward pivot. **888-442-7829; www.gapvax.com**



6 // HOTJET USA VAC'N JET SERIES

The **HotJet USA Vac'n Jet Series** of vacuum trailer jettors are compact and specially engineered to haul equipment and the spoils load, perform hydroexcavation, and clean valve boxes, storm drains and drain/sewer lines. They feature hot and/or cold water operation with a choice of engine options ranging from 23 to 70 hp and gas or diesel operation. They are equipped with premium triplex pumps, a 500-gallon spoils tank, up to 440-gallon water tanks, Gardner/Denver vac/blowers, a 4-ton hydraulic dump and a dual filter centri-clean filter system. They can also be custom-engineered and designed to meet specifications. **800-624-8186; www.hotjetusa.com**



7 // HYDRA-FLEX MACHETE

The **Machete** from **Hydra-Flex** is the go-to nozzle choice for anything hydroexcavation, thanks to its application range and adaptability to various environments. It is built for trenching, belling, holing, sloping, finishing and is safe to use around sensitive underground equipment. Its 15-degree oscillating wedge of water flow helps quickly locate underground utilities without damage. The movement of the stream reduces the risk of undermining while cutting and provides added operational benefits — better ergonomics and less wear and tear on the operator. When it comes to terrain, it was built to take on the most versatile range of ground, including caliche, rock, hard soils and compact soils. It's built with premium materials for incredible durability and increased operational hours. It is designed to be repairable to extend its life even further. **952-808-3640; www.hydrflexinc.com**



8 // RIVAL HYDROVAC T7 TANDEM AND T10

The **T7 Tandem** from **Rival Hydrovac** was designed primarily to be loaded with debris and drive within legislated road limits with most types of debris on board. The unit comes standard with a scale that reads real-time weights in the cab and on the wireless remote. The T10 is built with the same features and operating system, but with larger capacities and components. It is for both utility and industrial work and is available in three chassis layouts to meet weight restrictions in a given area. An air compressor option allows for excavating with air when required, while a truck-mounted coring system allows for removal of hard surfaces prior to nondestructive excavating. **403-550-7997; www.rivalhydrovac.com**



PRODUCT FOCUS

9 // SUPER PRODUCTS MUD DOG 700

Mud Dog 700 vacuum excavators from **Super Products** are designed to meet the challenges of compact, urban projects as well as large-scale excavation projects. They offer a compact footprint for excavation in urban environments while maximizing payload and maintaining the power and precision that larger units offer. The unit features a 7-yard debris body and 600-gallon water tank. This model comes standard as a dump body with an electric vibrator offering a 50-degree dump angle with the capability of dumping into a 48-inch container. Additionally, it is equipped with a rear-mounted, extendable, 8-inch-diameter boom that reaches 18 feet, has 270-degree rotation and pivots 10 degrees downward, which minimizes job site restoration and eliminates traffic congestion near roads. **800-837-9711; www.superproducts.com**



10 // TRUVAC TRXX

The **TRUVAC TRXX**, a compact yet powerful vacuum excavator trailer, is engineered to handle a multitude of tasks across various work environments with ease. Its design promotes nondestructive, portable and adaptable solutions for a broad spectrum of applications. It is designed as the ultimate tool for municipal, commercial and residential projects, setting a new standard for safe excavation practices, venturing into territories such as landscaping and plumbing where the bulk and expense of a full-sized truck are neither feasible nor efficient. **815-672-3171; www.truvac.com**



11 // VAC-CON X-CAVATOR

The **X-Cavator** hydrovac from **Vac-Con** includes a cold-weather enclosure for the water systems and control panel as well as an interior area for operator seating and workspace. Unit filtration is based on the Titan combination machine, with a single-cyclone design and final cartridge-style filter. The redesigned boom is lightweight and flexible, rotating 310 degrees around the unit and moving plus 45 degrees and minus 22 degrees vertically. The durable rubber hose material can withstand harsh environments, according to the maker, and has a reach of 26 feet. **904-284-4200; www.vac-con.com**



>> PIPELINE REHABILITATION/LINING

12 // ARIES INDUSTRIES TEST AND SEAL GROUTING SYSTEM

The **Test and Seal Grouting System** from **Aries Industries** reduces setup time and provides efficient hands-on control to quickly seal leaking joints. Grout — pumped to a leaking joint — flows through the leak, sealing the surrounding soil to form an impenetrable barrier. Sixty-gallon tanks and continuous-duty mixers provide high volume to seal large voids. Reels for fast deployment and retrieval, as well as high-power winches, quickly move the packer from joint to joint for high productivity. The unit's 800 feet of color-coded hose allows for long runs. The truck comes with a bench, storage and room to work. The operator tests and seals the joints while working in the control room, where test data and the sealing process are easily viewed, recorded and logged. **800-234-7205; www.ariesindustries.com**



CONTINUED >>

CONNECTION COLLAR SYSTEM



- SEAL MAINLINE & LATERAL CONNECTIONS
- INFILTRATION & EXFILTRATION PROTECTION
- 3-12" T & Y COLLARS AVAILABLE
- SEALED FELT & GLASS FIBER REINFORCED COLLARS
- REHAB PIPES INSIDE & OUTSIDE BUILDINGS
- STRONG & FLEXIBLE PICOTE CUSTOM PUSH RODS
- PUSH AND ROTATE THROUGH MULTIPLE BENDS
- PICOTE MIDI STEAMER FOR STEAM CURING



864-940-0088
sales@picotesolutions.com

picotegroup.com/resellers
picoteinstitute.com

Manufacturing Drain Cleaning Equipment for over 30 years

Drain Cleaning Machines | Cables
Blades | Cable Ends | Handgun Cables | Accessories



TM750



TM50



TM25



Fabricated from high quality wire
Most ends & couplings available
All sizes and lengths
Innecore available



Various shaped and sized blades

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



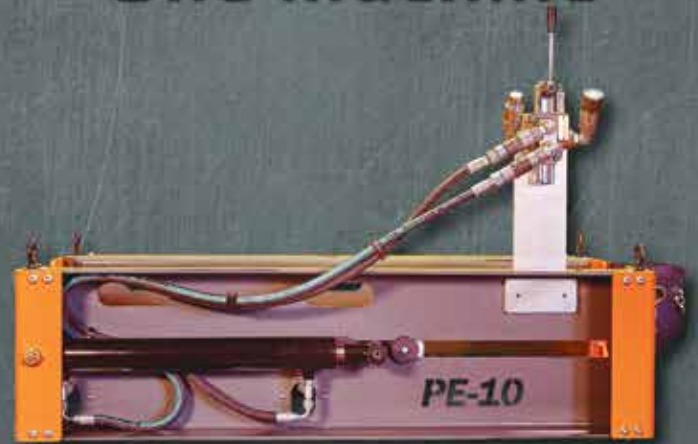
COAST MANUFACTURING

541.684.0743
www.coastmanufacturing.com

SIMPLE TRENCHLESS SOLUTIONS

FOR ANY UTILITY

Pipe Burst
and
Rod Push
with
One Machine



- Push/Pull rate:
13' per minute

- Rod Push/Pipe Burst
up to 3" lines

Simple
Modular
Effective
Efficient
Trenchless Rehabilitation



PE EQUIPMENT

www.pe-equipment.com
406-499-8136

PRODUCT FOCUS

13 // AVANTI INTERNATIONAL AV-100

AV-100 chemical grout from **Avanti International** is used to rehabilitate storm and sanitary sewer systems by eliminating infiltration in manholes, mainlines, joints, laterals and lateral connections, and before or after various forms of CIPP lining. It is injected after lining seals in the annular space between host pipe and liner, and lateral reinstatement, which are the primary sources of infiltration. It is an ultralow-viscosity, chemically reactive gel with a similar viscosity to water. It can permeate anywhere water can travel and has adjustable cure times from seconds to hours, creating an effective, long-lasting water barrier while providing soil stabilization. **800-877-2570; www.avantigrout.com**



14 // FLOW-LINER SYSTEMS NEOFIT+PLUS EXPANDABLE PRESSURE PIPE

Neofit+Plus Expandable Pressure Pipe from **Flow-Liner Systems** is a trenchless technology that creates an impenetrable barrier between drinking water and the existing host pipe. Host pipes (like lead and copper) can leach dangerous levels of toxic materials into drinking water. The Neofit+Plus EPP structural material has been scientifically proven by examining extensive hydrolysis testing, indicating it will last well over 100 years. It often only requires a single small access pit, saving yards, trees, sidewalks and floors from demolition. The speedy process allows for many installations a day and immediate return to service. **800-348-0020; www.flow-liner.com**



15 // FORMADRAIN FORMAPOX 101

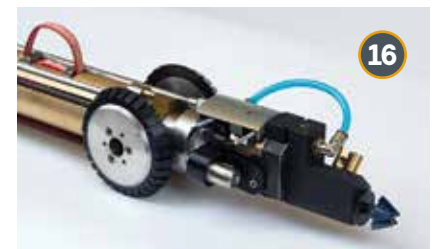
Formapox 101 from **FORMADRAIN** is a durable steam-cured liner that eliminates the mess and cost of traditional dig-and-replace methods. It is made from a watertight, thin, yet extremely strong composite material and a specially formulated resin. The liner is bright blue in color. It is the mainstay of the company's pushed- or pulled-in-place, steam-cured, fiberglass and epoxy underground pipe repair system. It can be used in line sizes from 2 to 48 inches. The repair is so thin that pipes sustain their original flow capacities, even with a liner installed in such small diameters. **888-337-6764; www.formadrain.com**



>> REINSTATEMENT CUTTERS

16 // CUES CURRAHEE CUTTERS 2.0

Currahee Cutters 2.0 from **CUES** provide a number of solutions for pipe inspection and rehabilitation — from clearing blockages, debris, protruding laterals, and roots, to reinstating laterals in a CIPP liner. The cutters function in a range of 5.25- through 12-inch pipe, are equally effective in CIPP or fold-and-form liners and can be installed on a K2 truck-mounted cutter system. The system performs optimally using 1,000 to 1,500 feet of cable and is operated with the CUES gamepad controller. **800-327-7791; www.cuesinc.com**



>> UV CIPP

17 // HAMMERHEAD TRENCHLESS BLUELIGHT LED

The **Bluelight LED CIPP lining system** for laterals and small drainpipes from **HammerHead Trenchless** uses a specially formulated resin that only cures under light in the “blue” wavelength, giving installers a significantly longer working time between liner wet-out and curing. Once installed, the automated curing system pulls the LED light head through the liner, curing the resin almost instantly — up to five times faster than other methods. Instead of waiting hours for the liner to cure, a 50-foot sewer line could be fully cured in under 10 minutes. **800-331-6653; www.hammerheadtrenchless.com**



18 // OMEGA LINER

Omega Liner is a high-strength GRP UV-cured liner for trenchless rehabilitation of water, wastewater and stormwater piping systems. It is constructed with ECR (corrosion-resistant) fiberglass and advanced UV resins, and it uses unsaturated polyester or vinyl ester resins for environmentally conscious projects. It is offered for both circular and noncircular pipes from 6 to 66 inches, has a 6-month shelf life, conforms to ASTM F-2019, and meets and exceeds ASTM F-1216. Factory training and support is available, with a small equipment footprint and increased efficiencies. **605-558-1020; www.omegauvpipe.com**



19 // PIPELINE RENEWAL TECHNOLOGIES SPEEDYLIGHT+

SpeedyLight+ from **Pipeline Renewal Technologies** uses UV light to cure felt or GFRP liner for trenchless rehab of 2- to 24-inch pipes at speeds up to 4.92 fpm. It can line 90-degree bends as well as transitions and verticals. Resins used with LED UV cure are free of styrene and amines (and the odor) so projects are less disruptive to communities and businesses. Integrated cameras show what's happening underground, giving operators the ability to control the speed and accuracy of the cure. There are no working time considerations, as you turn the light on and off any time to stop or start the cure. The system has a 328-foot reach. **866-936-8476; www.pipelinert.com**



RTX SERIES PLUNGER PUMPS



RTX INDUSTRIAL PUMPS

1450 N version 30x80mm solid shaft.
8-40 GPM at 1500-4350 PSI ratings.
Note: Available in 1750 RPM.



RTX HYDRAULIC DRIVE PUMPS

Available in 44C-F50 flange & 90C-F54 flange.
44C-F50 8-24 GPM at 1750-4350 PSI ratings.
90C-F54 8-40 GPM at 1450-7250 PSI ratings.



RTX STAINLESS STEEL PUMPS

1450 N version 30mm solid shaft.
RTX-SS-100.100N 26 GPM at 15000 PSI.
RTX-SS30.500 8 GPM at 7250 PSI.
Note: Available in 1750 RPM.



A.R. North America Inc.
140 - 81st Avenue Northeast, Fridley, MN USA 55432
TEL: +1.800.893.4235 | FAX: +1.800.331.2762
www.arnorthamerica.com | info@arnorthamerica.com



PIPE LINING METHODS AND PROJECTS

// By Craig Mandli

SWIFT AND SILENT SEWER REHAB UNDER APARTMENT COMPLEX



PROBLEM / The wastewater pipes under an apartment complex in Hollywood, Florida, had to be repaired. There was 68 feet of 6-inch pipe that required rehabilitation with only one access point available.

SOLUTION / Pipelining Technologies rehabilitated the wastewater pipes in the building using **BRAWO SYSTEMS** equipment. **BRAWO SYSTEMS** provided on-site technical support for the installation of the **BRAWOLINER** using the Magnavity SX light-curing system. The wastewater pipes to be rehabilitated were first thoroughly cleaned to ensure optimum adhesion of the liner. The liner was inverted into the pipe through the single access point. The liner was cured using special lighting technology.

RESULT / By using only one access point and not having to carry out any demolition work, the tenants of the apartment complex were hardly disturbed at all. The entire refurbishment was completed in a very short time. After cleaning, it took under 60 minutes for the work to be completed. The use of light to cure the liner meant that the rehabilitated wastewater pipe could be put back into operation quickly. **240-796-5007; www.brawosystems-usa.com**

USING A RECYCLER COMBINATION UNIT IN A LARGE-DIAMETER PIPE



PROBLEM / A West Coast municipality was in the planning stages of replacing a 52-year-old, 568-foot, 36-inch trunk line that fed the city wastewater treatment plant due to the need for more capacity. The city had been unable to clean this pipe with traditional methods due to heavy contamination of debris and grease.

SOLUTION / The **Kaiser Premier AquaStar** was utilized on this line to demonstrate the recycler's ability to operate without running out of cleaning water. The AquaStar worked the line nonstop for 5 hours utilizing a step-clean method every 50 feet, successfully cleaning 450 feet of pipe. The recycler processed over 22,000 gallons of recycled fluid for cleaning with only a single 700-gallon freshwater fill-up. The end-of-day offload was approximately 8 yards of decanted, compacted material from the bottom of the pipe. As an unforeseen benefit, every time the floor cleaner nozzle broke into new material there would be a release of hydrogen sulfide gas. This sparked a revelation by the municipality that the \$750,000 annual spent on product for chemical mitigation of hydrogen sulfide could be reduced by investing in an AquaStar due to its ability to stay on task for extended periods and clean all the material out of the pipe.

RESULT / The municipality was finally able to clean this difficult pipe instead of the costly replacement of the trunk line and reduce the cost and use of chemicals. **970-542-1975; www.kaiserpremier.com**

CONTINUED >>



THE PROFESSIONAL'S CHOICE

TROJAN

WORLDWIDE INC.™

PROFESSIONAL GRADE EQUIPMENT THAT GETS THE JOB DONE!
THERE'S NO JOB OUR EQUIPMENT CAN'T HANDLE!



C100-512SL



TWR2000 TRAILER JETTER



COLT



PONY



STALLION



VISION-HD 1080P

DIGITAL LOCATOR

WE BUILD OUR EQUIPMENT BASED ON THREE SIMPLE CONCEPTS:

DURABILITY, RELIABILITY, & POWER

Sewer Cables **IN-STOCK** For All Major Brands



REPAIR CENTER

We REPAIR all major brands of sewer & drain cleaning machines, jetting, and inspection equipment.

-Free quotes

-Fast turnaround

800-392-4902

TrojanWorldwide.com

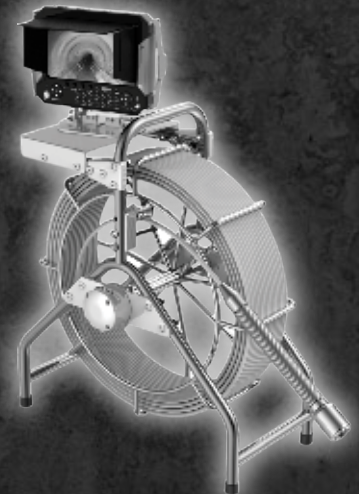
3306-C Ella Blvd, Houston, TX 77018



FORBEST PRODUCTS CO.

WELCOME TO THE FORBEST HD ERA

High Definition Imaging, with the same Affordability, Customization and Service you are used to.



Western USA:

44130 Old Warm Springs Blvd, Fremont, CA 94538

www.ForbestUSA.com

Eastern USA:

810 Interchange Blvd, Newark, DE 19711

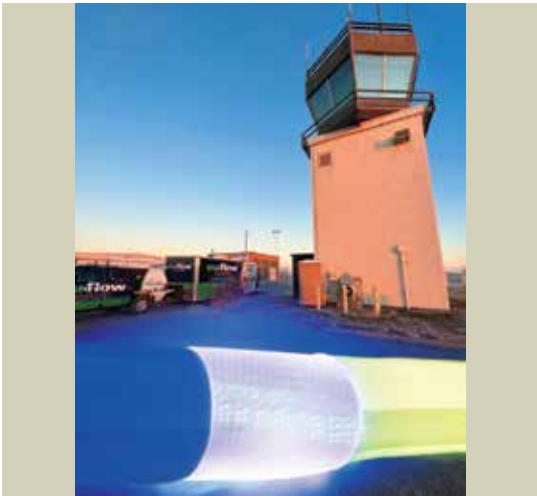
TF: 1 877 369 1199 P: 510 226 7988

Canada:

44 E Beaver Creek Rd, Unit 6, Richmond Hill, ON L4B 1G8

TF: 1 877 369 1199 P: 905 709 6226

UV LIGHT SHINES THROUGH AT FAA TOWER



PROBLEM / The FAA tower at a regional airport in Nebraska faced severe issues with persistent sewer smells disrupting staff and operations. An inspection revealed a significant leak in the risers due to a crack on the third floor, allowing sewage to seep down, threatening the building's integrity and the health of the staff. Pipe replacement would have required a multi-day shutdown, significantly impacting airport operations.

SOLUTION / Seeking a more efficient solution, airport staff reached out to **NuFlow Nebraska**, known for its noninvasive pipe rehabilitation expertise. A comprehensive inspection found 45% of the system was compromised by heavy scale buildup and corrosion. NuFlow Nebraska proposed **NuCure UV CIPP** lining technology to minimize disruption and ensure a durable repair. The project, executed in harsh winter conditions with temperatures dropping to -10 degrees F, showcased the versatility of NuCure UV technology. The UV light curing process proved to be both efficient and effective. Once the liner was in place, the UV lights were activated, curing the resin in a rapid 10-minute cycle. The UV method accelerated the project timeline and ensured a consistent, high-quality cure. The system also allowed the team to prepare liners in advance, enabling a calm and controlled installation despite the extreme cold.

RESULT / The project was completed in only two days without disrupting day-to-day operations at the airport. Impressed by the efficiency, the airport plans further rehabilitation using the technology, ensuring smooth operations and a healthier environment for staff. **866-430-2134; www.nuflow.com**

LINING METHOD A FIT FOR METRO AREA'S SEWER REHAB



PROBLEM / A major metropolitan area in the southwestern United States was looking for alternatives to traditional rehabilitation methods that would specifically reduce or eliminate environmental impact, provide more consistent results and handle lining through unconventional access points. This particular municipality had the issue that sanitary lines did not terminate at a manhole, but rather cleanouts.

SOLUTION / After assuring the owner of the system that **Thermoform** could handle the specific requirement, Thermoform Liner from **Warrior Trenchless Solutions** was selected for a 6,000-foot sanitary pilot project. With an installation partner already secured, the project began in June of 2023 and completed later that summer.

RESULT / The pilot project was a success and the municipality was 100% satisfied with the results. Thermoform liner was added to its Standards and Specifications and included on a four-year, \$10.5 million job order contract that was awarded in the fall of 2023. Just over one year later, the contracting partner has surpassed the 40,000-linear-foot mark for installations and is gearing up to add additional lining crews. **716-601-7760; www.thermoformliner.com**



TRIC®

For trenchless replacement of pipes from 2" to 14" diameter, including upsizing, TRIC puts the most power and value in the smallest package. Call or visit our web site or social media to learn more.

888.883.8742
www.trictools.com
[instagram.com/trictoolstech](https://www.instagram.com/trictoolstech)

WE WON'T BE BEATEN ON SEESNAKE PRICING



THE CABLE CENTER
1-800-257-7209

LARGEST
FACTORY-AUTHORIZED
REPAIR CENTER OF SEESNAKE

FULL CATALOG OF RIDGID
REPAIR PARTS AND ACCESSORIES

24 ^{***HR***} ***TURNAROUND***
ON REPAIRS

NO
SALES TAX
ON OUT-OF-STATE
SALES

THE CABLE CENTER 1/2 OPEN - M-F, 7AM-3:30PM CST St. Louis, MO • 314-993-3099 • www.TheCableCenterInc.com

PRODUCT SPOTLIGHT

COMPACT DRAIN CLEANER PACKS A PUNCH

By Craig Mandli

Small, portable handheld drain cleaners are useful on the job site. But they simply don't have the power a larger cable machine provides when you need to clear especially stubborn blockages. The Mini Gator Boss from Gator Drain Tools provides a happy medium.

The Mini Gator Boss is smaller in size but not in power, according to Gregg Tattersall, vice president of sales for Gator Drain Tools.

"The Mini is priced within reach of any plumber or drain cleaning contractor," he says. "Plus, all Gator Drain Tools equipment features flexshaft cables and attachments that are interchangeable with other units on the market and field repairable, so if you already have other Gator units, all accessories will work."

Featuring a convenient hand switch, a built-in motor offering 900 to 3,000 rpm, 75 feet of 8 mm flexshaft cable, an adjustable speed controller, and a 120-volt power supply, Tattersall refers to the tool as "the ultimate machine for versatile drain cleaning."

"It's a powerhouse for 2-, 3- and 4-inch-diameter pipes, with a variety of cleaning, sanding and reinstatement heads available," he says. "It really is a go-to solution for any job."

According to Tattersall, the Mini Gator Boss is suitable for lateral cutting, drain cleaning, reinstatement of branch lines and high-speed flexshaft cleaning to descale cast iron pipe. In addition to 8 mm cable,



the tool is available with 50 feet of 10 mm flexshaft cable. Tattersall says that, despite a lower price point and smaller size, the Mini Gator Boss is built to the same standard as the company's larger machines.

"The Mini Gator Boss is our most robust tool next to the Boss 2.0 that comes with a built-in motor to drive the shaft," he says. "Our reputable management team designs tools with a combined 50 years of on-site drain cleaning and pipe-lining experience."

Despite Gator Drain Tools being relatively new to the drain cleaning market, that experience has plenty of customers convinced.

"Feedback on Gator Drain Tools and our flexshaft drain cleaning systems has been very well received by the industry," Tattersall says. **866-428-6721; www.gatordraintools.com**

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

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



T&T TOOLS

T&T Tools, Inc.

Fax: 800-521-3260

Email: sales@mightyprobe.com

800-521-6893

www.MightyProbe.com

MADE IN THE USA | 30 YEARS OF EXPERIENCE | FAMILY BUSINESS

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

YOUR SOURCE FOR RIDGID®



SeeSnake® TruSense™
Camera Reel



CS12x Digital
Reporting Monitor*



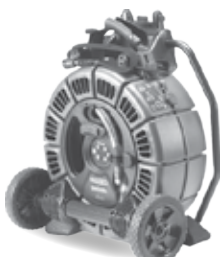
Flexshaft
K9-102, K9-204



SeeSnake® Compact M40
Camera System



CS65x Digital
Reporting Monitor*



SeeSnake® MAX
rM200 Camera
System
*With Wi-Fi



microDrain Reel



CS6xVersa Digital
Recording Monitor*



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
Ryan: 719-243-3539

CALL TOLL FREE: 888-947-8761

5037 NW 10th • Oklahoma City, OK 73127
www.centralwinnelson.com

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

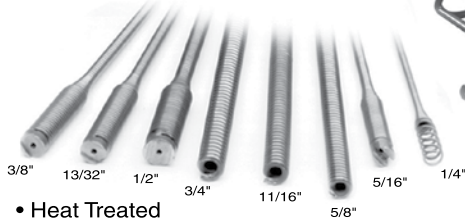
And they have for over 50 years

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



- 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

INDUSTRY NEWS

PPI announces new board of directors

The Plastics Pipe Institute announced its new board of directors, effective as of June 1. PPI is the major North American association representing the plastics pipe industry. The returning board members are Gary Morgan of Borealis, chair; Jim Johnston of McElroy Manufacturing, vice chair; Doug Keller of LyondellBasell, past chair; Kate Olinger of Uponor, treasurer; Dell Doyle of Dow Chemical Company, advisory council representative; and David Fink, PPI staff representative. Members of the board serve for two years and then move up to the next position.



Gary Morgan

REHAU and Equipco partner to serve western Canada

REHAU and manufacturers representative of Equipco announced an expanded partnership that fortifies support in the mechanical and plumbing market throughout western Canada. Equipco began representing REHAU polymer-based solutions for mechanical and plumbing systems in British Columbia, building upon their existing partnership in Saskatchewan and Manitoba.

Vacuum Truck Rentals converts fleet to Vacall units

Vacuum Truck Rentals, headquartered in Richland, Mississippi, has converted its entire fleet of vacuum and jetting rental units to Vacall brand AllJetVac, AllExcavate, AllJet and AllVac machines. Vacall machines are designed, manufactured, sold and supported by Gradall Industries in New Philadelphia, Ohio. Gradall is wholly owned by the Alamo Group.

Sioux Chief acquires Real-Tite Plugs

Kansas City, Missouri-based Sioux Chief announced the acquisition of Real-Tite Plugs. Family-owned Sioux Chief has been in business since 1957 and manufactures thousands of plumbing products in the U.S. Real-Tite Plugs, established in 1981, has been manufacturing U.S.-made expandable cleanout plugs that seal cleanouts with missing or damaged threads. They have a low-profile, flush face and are approved for permanent installation in PVC, ABS, or cast-iron cleanout tees. Effective immediately, contractor customers can place their orders for Real-Tite Plugs, along with specific Sioux Chief items, directly on the new Real-Tite Plugs E-Shop from Sioux Chief at www.real-titeplugs.com. **c**

LIKE WHAT YOU SEE?

GO ONLINE TODAY FOR A
FREE SUBSCRIPTION,
CLEANER.COM

COLE Publishing Inc. | 800-257-7222



Cleaner

HAVE A STORY IDEA?

Email us at editor@cleaner.com

RAT OUT YOUR ROOT PROBLEMS



3/4", 1", 1 1/2" nozzles come in kit form.

- Uniquely designed nozzles for big sewer line headaches - roots and encrustations in all sorts of pipe.
- Interchangeable heads: chain rotor or cable rotor.
- Simplified service means extra uptime.



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



www.rootrat.net

MADE IN THE USA

This is what it would look like if we printed cleaner.com thousands of stories, products and ideas



Get access to everything we can't fit in the magazine. Additional stories, videos, news briefs and other great information that lets you get the most out of *Cleaner*.

www.cleaner.com

BLACKHAWK

Trenchless Superstore

Since 2013, we've been providing the Best Pricing, Products, Service & Selection.

BlackhawkTechSupply.com ♦ 910 W Wilson St. Batavia, IL 60510



Pipe Lining Materials

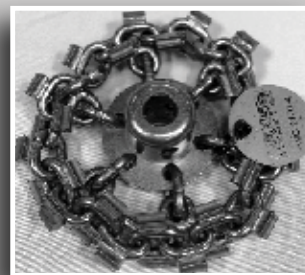
- Epoxy & UV Resin
- Stitched Scrim
- 4-D
- SuperFlex
- Flex
- Imperliner
- Scrim Transition Liners
- Cal-Tube
- Remote Start Material
- Accessories



Point Repair

- Packers
- Patch Kits
- Bulk Material
- Premium 3P Silicate in easy to use no-mess bottles
- Starter Packages
- Accessories

Example: 4"x4' Winter Patch Kit \$225



Pipe Cleaning

- High-Speed Cable
- Chain Knockers
- Reinstatement Tools
- Machines

RENSSI
DRAIN CLEANING EQUIPMENT

SPECIAL:
Free standard shipping on orders over \$5000 (lower 48 states)

Call for knowledgeable support and fast shipping!


ONLINE STORE COMING SOON

630-326-9061

Think outside the box

Sign up to learn how *Cleaner* serves owners, managers and contractors of residential and commercial drain and sewer maintenance, cleaning and repair businesses, along with industrial high-pressure cleaning services.

It's FREE.

SEND A FREE* SUBSCRIPTION OF CLEANER TO: 

Contact Person _____

Company Name (optional) _____

Job Title (optional) _____

Address _____ City _____

State/Province _____ Zip/Postal Code _____

Phone _____ Phone Extension (optional) _____

Fax _____ Cell Phone (optional) _____

Email _____

What services does your company provide (categories)?
 Cleaning Plumbing Inspection Municipal/Industrial Rehabilitation/Relining
 Location/Detection Waterblasting Pumps Trucks Safety
 Other _____

What is the approximate population of the area in which you provide service?
 1-10,000 10,001-50,000 50,001-100,000 100,001-200,000
 200,001-500,000 500,001+

What is your annual equipment budget?
 \$1-\$50K \$51K-\$75K \$76K-\$150K \$151K-\$250K \$251K-\$350K \$350K+

How many vehicles do you currently have in service?
 1-5 6-10 11-15 16-20 21+

How many employees do you supervise or work with at your facility?
 1-3 4-6 7-9 10-12 13-15 16+

FAX this form to 715-350-8456
MAIL this form to COLE Publishing, P.O. Box 2707, Eagle River, WI 54521

*U.S., Canada and Mexico only
CLE1024

SUBSCRIBE ONLINE at www.cleaner.com



Cua Claws
A Simple Solution for Slippery PVC Pipe -
23 Years of Service
We resurface all makes of steel transport wheels
CALL JERRY AT 714-697-8697
www.cuaclaws.com



- PRODUCT SOLUTIONS FOR:
- Weeping Leaks
 - Gushing Leaks
 - Void Filling / Soil Stabilization
 - Concrete Repair and Resurfacing
 - H₂S Resistant Coatings and Linings



*I&I Solutions:
When there's a need,
we bring you MORE.*

primeresins.com

EASY-KLEEN
PRESSURE SYSTEMS LTD.
MANUFACTURER OF HIGH PRESSURE CLEANING EQUIPMENT

WOLVERINE
DRY STEAM GENERATORS

DRY STEAM GENERATORS



20/30/40/50 BHP
Up To 2,000,000 BTU
Curing
Thawing
Degreasing
Degassing
Melting
Cleaning & Restoring
Prepping Surfaces
for Paint
Purifying
Weed Control

YouTube
www.youtube.com/easyklean
1-800-315-5533
www.easyklean.com - sales@easyklean.com

EASY-KLEEN
PRESSURE SYSTEMS LTD.
MANUFACTURER OF HIGH PRESSURE CLEANING EQUIPMENT

VAN PACK JETTERS
12 GPM @ 3500 PSI



OPEN JETTER TRAILERS GROUNDHOG JETTER



20 GPM @ 4000 PSI
ENCLOSED JETTER TRAILERS (Hot Water)



VACUUM TRUCK HEATERS
440,000 BTU to 4,000,000 BTU



YouTube
www.youtube.com/easyklean
1-800-315-5533
www.easyklean.com
sales@easyklean.com

AMERICAN JETTER.COM

Up to 67% MORE EFFICIENT



51T Trailer Jetter Hot or Cold
18 GPM @ 5000 PSI / 20 GPM @ 4000 PSI
76 HP Kohler EFI
FREE Shipping/Delivery



58 Trailer Jetter Hot or Cold
10 GPM @ 4000 PSI
38 HP Kohler EFI
Free Shipping/Delivery

866-944-3569

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

OUR BEST SELLING DRAIN LINE JETTER!

HOTJET II
10GPM @ 4000 PSI • 35HP VANGUARD
Cleans 2-12" Drains with Hot OR Cold Water



TRAINING AND FREE WAREHOUSE NOZZLE INCLUDED!

HotJetusa
1-800-624-8186
WWW.HOTJETUSA.COM
OVER 30 YEARS BUILDING QUALITY EQUIPMENT
PRICES SUBJECT TO CHANGE - CALL FOR CURRENT PRICING

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

Cleaner



f
X

RIDGID EQUIPMENT & TRAINING FULL SERVICE AND SALES

CERTIFIED REPAIR CENTER



APEX CIPP
4545 Samuel Street
Sarasota, FL 34233
apexcipp.com 941-300-0441

CLASSIFIEDS

see photos in color at www.cleaner.com

BUSINESSES

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

DRAIN/SEWER CLEANING EQUIPMENT



2015 Western Star 4700 Vactor combo truck, 96,400 miles, 10,549 engine hours, Detroit DD13 12.8L 450HP. Allison 4500 RDS trans, telescopic boom w/ rotation, articulating hose reel, Roots 827 blower, Linde hydrostatic pump, 205-gallon water tank.

For more information and pricing call **Erika 508-316-0979** or email erika@truaxcorporation.com

C10

CCTV trucks & jet vacs for sale. ALL REASONABLE OFFERS CONSIDERED! Go to www.spands.net for details and photos OR call **708-475-7117**

C11

Spartan 1065 drain cleaning machine, cleans 4-6 inch sewer, auto feed/retriever. 1,035 foot 3/4-inch cable. Good condition. Asking \$1,200. William 772-335-2224.

(C10)

JET VACS



1995 Vactor 2100 combination machine w/ newer HR42 blower, 1,500-gallon debris body, 1,500-gallon fresh water tanks, 500' jet hose, hand gun for hydroX, 6 aluminum vac tubes, debris body flusher, International 530, 8-speed Eaton Fuller transmission, 145,097 miles, 6,879 hours. New steel debris body insert.\$28,000

Call Eric @ **570-336-1088. PA**

C12



Vactor 2116 on 1991 Ford L8000 173k miles. Vactor 2-stage fan, 100 gpm @ 2,000 psi pump. 1,300-gallon aluminum water tank, 16-yard stainless steel debris body and hydraulic rear door. 7.8L L6 Ford turbo diesel. Cummins 6BT diesel rear auxiliary engine. Allison automatic transmission.\$42,999 OBO

860-274-7338 CT

C10

2024 Freightliner 114SD cab & chassis with a Vacall AJV1215 combination Jet/Vac unit - 12 cubic yard debris & 1,500-gallon water - Roots 824 blower with General 87 GPM @ 2,000 PSI water pump. Stock #14143 (Coming in November) www.vacuumsalesinc.com (888)VAC-UNIT (822-8648) (CBM)

JETTERS - TRAILER



The **HotJetII®** is a best-selling hot- and cold-water drainline cleaner featuring a 35hp Vanguard engine by Toyota and delivering 10gpm @ 4,000psi that cleans drains up to 300' and 12" in diameter. The HotJet II® is American made using nonproprietary parts for affordability and ease in serviceability making its return on investment truly impressive. Prices subject to change. Financing available. Contact us for current pricing and availability

800-624-8186;
sales@hotjetusa.com;
www.hotjetusa.com

CBM

2023 US Jetting 4018-300 Jet Trailer. Stock# 14107. www.vacuumsalesinc.com (888)VAC-UNIT (822-8648) (CBM)

PIPELINE REHABILITATION

Never used Lightray LR3 system, 5' 3" packer, 5' 4" packers, push rod assembly, 100' of 3" liner, 100' 4" liner. All controls. This is a complete never-used system. \$25,000. 817-825-6545. TX (C10)

CCTV/Grout Truck and Equipment for sale in Minnesota. Truck, Packers & Jet Trailer. Please contact for more information. Kemp 218-838-9708 or Joy 218-838-9700. (C10)



2023 22' Perma-Liner Heat Assist Lateral Trailer, lightly used, single owner-operator. Closing business, great starter package to get your existing crew running or maybe start up yourself.\$60,000

Contact **Hubert Thompson**
603-630-1856 or
hubertthompson31@gmail.com. NH

C10



Inversion drum for trenchless pipe lining. Used, in good condition. \$2,500, buyer will be responsible for freight. Contact us if you have any questions

707-433-8053
admin@unplugu.com. CA

C10

POSITIONS AVAILABLE

The Plumbers Plumber, LOCATED IN SOUTHWEST FLORIDA, a trusted name in plumbing since 1980, specializes in cast-iron drain pipe cleaning, re-lining and under-slab drain repairs. We're committed to delivering top-notch service to our clients and are looking to expand our team with a skilled expert in small diameter pipelining. ****Job Description:**** We are seeking an experienced professional in small diameter pipelining to join our team. The ideal candidate will have a deep understanding of the latest pipelining techniques, materials and equipment. You will be responsible for assessing, repairing and re-lining pipes with a focus on precision and quality. Please call or text 239-340-3840 or email drainexpert@gmail.com, pay is negotiable based on experience. (C11)

RENTAL EQUIPMENT

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

Dynamic Repairs - Inspection Camera Repairs: 48-hr. turn-around time. General Wire, Ratch, Ridgid, Electric Eel, 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)

TV INSPECTION



RapidView/IBAK Premium 4k high definition dual fiber trailer system - 14' enclosed trailer with side door and dual rear doors, trailer has heat and air, lateral launch, Orpheus HD and Orion 3 HD cameras, SI manhole inspection camera (would be \$99,000 if purchased separately). Mainlite portable self-contained system minus camera (would be \$57,000 if purchased separately). Pressurized wash-down system. Powered retractable rear canopy. Demo unit with very low usage. Unit is physically located in Shakopee, MN.

612-741-3321

C10



2021 Ford F550 16' cube van, 6.7L diesel Cummins, 7.5HDKAT-41934T generator, heat, A/C, 19-gallon water storage tank, 25' retractable wash down hose, ARIES VL5000 data display, ARIES PC1500 master control system-multi conductor, PR2200 combined TV and LETS cable reel and much more!

Call **Erika for more information and pricing 508-316-0979 MA**
Erika@truaxcorporation.com

C10

“IF YOU INVEST TIME AND ENERGY

into your people to train them
and make them better employees,
you’ll always get a better outcome.

**IF THEY KEEP GETTING BETTER,
THEY’LL STICK WITH YOU.”**

LEVI TORRES
High 5 Plumbing
Golden, Colorado



Read what **matters** to contractors in every issue of **Cleaner**.
Subscribe for FREE at cleaner.com



2008 Freightliner MT55 TV inspection 18' van with IBAK sewer camera system. Former municipal possibly upgraded in 2016. 6.7L Cummins engine, 97,000 miles, work box & an operation booth are powered by shore or diesel generator with 5,300 hours. Unit includes working camera, numerous extra camera & tractor parts.\$64,995 PLUS TT&L.

Call Ken 210-260-1702 TX
for sales information.
www.buckettrucksales.com

C10



CUES C550 Inspection Trailer. Less than 40 hrs on unit, 1,000 ft reel, has both transporters 4" thru 36" capability. Lab top with G-Net advanced. One owner-operator. Great unit for your start up CCTV business or just looking to inspect without tying up a vehicle in the fleet. Note: Push Cam in photo not included. This is brand new equip.\$130,000. NH

Call: Hubert Thompson
603-630-1856 or
hubertthompson31@gmail.com
for any additional questions
and or inquires.

C10

2008 F450 gas cctv and lateral launcher RST, 2 tractors and 2 cameras, 83k miles, clean truck inside and out. Jorge Beltrán: cell - 626-250-1182, email - jabeltran425@gmail.com. CA (C10)

Used, refurbished EnviroSight RCX90 standard definition pan tilt zoom camera head. Camera head has been gone through at a factory authorized repair center and has been upgraded to the latest camera module with the latest software. All seals have been replaced and camera head holds air pressure. Please contact Brian for more information and pictures. brian@neverestequipment.com. CO (C10)

CAMERA OPERATORS, STOP SPINNING YOUR WHEELS IN GREASY PIPE! Aftermarket gritted polymer wheels, steel carbide wheels, gritted and treaded tracks, tow cables, kiel sticks and more. Fitting Aries, CUES, EnviroSight, Ibak, Rausch, RST, Schwalm & IDtec. **ORDER TODAY** at www.TruGritTraction.com; info@trugrittraction.com; 407-900-1091 (CBM)

NEED TRACTION? We make aftermarket gritted/gripping pads for all chain-driven camera transporters. Custom fabrication secured to a high-quality, nickel-plated carbon-steel chain that doesn't stretch. Also have non-gritted pads, wheels, and tires for all different brands. Pad samples upon request. **Pipe Tool Specialties LLC:** 888-390-6794; Fax 888-390-6670; pipetoolspecialties.com or email pts4422llc@gmail.com (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)

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



Save the Date!

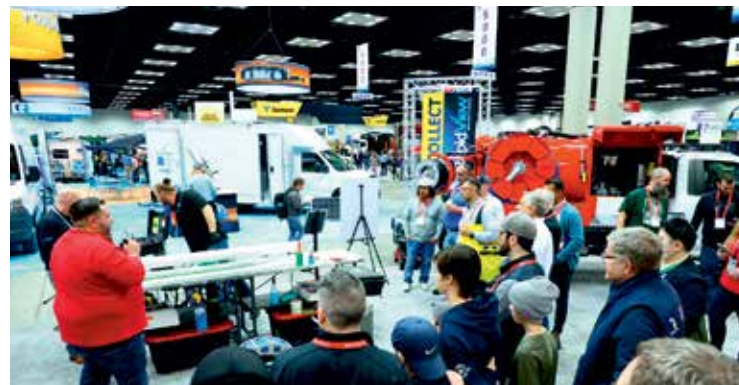
CONFERENCE: February 17-20

EXPO HALL: February 18-20

Indiana Convention Center



The logo for WWETT 25 features a stylized blue wave graphic above the text "wwett™ 25". The "w" and "e" are lowercase, while "t" and "25" are uppercase.



STEP INTO THE FUTURE OF SEWER INSPECTION WITH US

CAN-EX TECH'S

ZIPCAM 360

Brought to you by
GapVax



SCAN TO
FIND OUT
MORE!!



GapVax®

GAPVAX HAS THE EXCLUSIVE DISTRIBUTORSHIP OF THE ZIPCAM 360
FOR THE UNITED STATES!

- CARRY OUT YOUR PACP INSPECTIONS AT A FRACTION OF THE COST!
- THE REDESIGNED WORKFLOW FROM ZIPCAM 360 HELPS YOU MAKE THE MOST OF THE TIME OF YOUR TEAMS IN THE FIELD
- 360-DEGREE VIDEO RECORDING: CAPTURES 99% OF DEFECTS
- EASY TO USE BY OPERATORS, REGARDLESS OF THEIR LEVEL OF EXPERIENCE
- GREAT ADDITION TO YOUR TEAM!!

CALL TODAY TO SCHEDULE A DEMO!! 888-442-7829

WWW.GAPVAX.COM



JOHNSTOWN, PA

GAPVAX IS A LEADING
MANUFACTURER OF
CUSTOM-BUILT
COMBINATION JETVACS
AIR MOVERS
HYDRO EXCAVATORS
JETTERS
RECYCLE JETVACS
SKID MOUNT VAC UNITS
AND MORE!

MACHINES
AS THAT
HARD
AS YOU DO



OFTEN IMITATED
**NEVER
DUPLICATED**



Count on Genuine Spartan Cable

Manufactured in Michigan on our new, state-of-the-art cable production line from the highest quality iron ore on the planet, our cable is specially heat treated for the ultimate consistency and galvanized with zinc for an added barrier of protection. Genuine Spartan Cable outperforms and outlasts the competition, even in the most demanding jobs.



LOOK FOR THE LABEL

Did you know?

Only Genuine Spartan Cable manufactured by Spartan Tool comes with the Sparshine label. When in doubt, look for the label!

SPARTANTOOL.COM
800.435.3866