

digDIFFERENT

Think outside the bucket



TECH PERSPECTIVE:

THE KEY TO DEVELOPING GOOD CCTV OPERATORS
18

Aidan Kelly
Vice President
PSI Plumbing Systems Inc.

Jim Harper
Owner
PSI Plumbing Systems Inc.

DOUBLE DOWN ON DIVERSITY

Expansion of services offered helps to meet customer needs
12

SHOP TALK:

TIPS TO KEEP YOUR HYDROVAC RUNNING AT PEAK PERFORMANCE
22

PRODUCT FOCUS



24

Sonetics[®]

THE TOP 10 MUST-HAVES
WHEN CHOOSING A WIRELESS
TEAM COMMUNICATION SYSTEM



BOOTH
5645

SONETICS eBOOK

Download at soneticscorp.com/get-ebook

Learn what you need to consider and what to avoid as you compare solutions for your crew.

Same Name



but this Changes the Game

THE REDESIGNED **HYDROVAC** BY **VAC-CON**
WILL CHANGE EVERYTHING YOU THOUGHT
YOU KNEW ABOUT THE **X-CAVATOR™**

DON'T MISS THIS STARTING LINE-UP
AT THE **2020 WWETT SHOW**.

 **VAC-CON**
WWW.VAC-CON.COM


wwett 20
BOOTH: 1161

Contents

FEBRUARY 2020

Think outside the bucket

digDIFFERENT

FOCUS: WWETT Show Issue; Pipe Installation, Repair, Inspection and Rehabilitation



FEATURES

24 **PRODUCT FOCUS:** **Pipe Installation, Repair, Inspection and Rehabilitation**

By Craig Mandli

30 **SUCCESS STORIES:** **Pipe Installation, Repair, Inspection and Rehabilitation**

By Craig Mandli

COLUMNS

8 **BELOW THE SURFACE:** **Diversity Is King**

Ways to grow your company could be right in front of you at one of the upcoming industry shows.

By Cory Dellenbach, Editor

18 **TECH PERSPECTIVE:** **Developing a Skilled Team**

Good CCTV operators should be self-motivated and highly trained.

By Traci Browne

20 **SMART BUSINESS:** **Failing Companies**

From starting for the wrong reasons to working with family, there are many things that can doom a construction business.

By Larry Kokklenberg

22 **SHOP TALK:** **Keeping It Running**

Use these troubleshooting tips to keep your hydroexcavator out of the shop and on the job making money.

By Ken Wysocky

IN EVERY ISSUE

10 **@digdifferent.com**

Visit daily for new and exclusive content.

32 **The Latest: Products**

This Issue's Feature: Shaker system keeps hydroexcavator on the job site longer

By Craig Mandli

33 **The Latest: News**

34 **Happenings**

NEXT ISSUE: March 2020

FOCUS: Piercing, Bursting, Tunneling and HDD;
No-Dig Show Issue

- Profile: Harts Services (Tacoma, Washington)
- Tech Talk: Leveling the playing field with technology
- Smart Business: Reasons to put golden handcuffs on your best employees

COVER STORY

12 **PROFILE: PIPE BURSTING** **Double Down on Diversity**

Colorado contractor expands into pipe bursting and provides additional services to meet customer needs in a high-end market.

By Marian Bond

ON THE COVER:

Aidan Kelly, left, PSI Plumbing Systems Inc. vice president, and Jim Harper, owner, stand with one of their trucks at the company yard in Edwards, Colorado. The company, established in 2000, has 15 employees and provides services such as pipe bursting, drain cleaning, plumbing and jetting around the Rocky Mountain region. (Photography by Dominique Taylor)



RAMVAC HX TRUCK SERIES HYDRO EXCAVATOR

- LIGHTWEIGHT DESIGN
- SHORTEST FOOTPRINT IN THE INDUSTRY
- 3, 6, 9, 12, OR 15 YARD DEBRIS BODY
- HEATED COMPARTMENT PROTECTS ALL WATER COMPONENTS
- REVERSIBLE BLOWER AND VACUUM ENHANCER STANDARD
- 12-VOLT WIRING SIMPLIFIES FIELD MAINTENANCE



RAMVAC AX AIR EXCAVATOR

- NO CDL REQUIRED
- SINGLE ENGINE DESIGN
- 6" VACUUM SYSTEM WITH 3000 CFM 18 HG
- 300 CFM 250 PSI AIR COMPRESSOR
- DIG DEEP BOOM STANDARD



DESIGNED AND BUILT WITH
THE CONTRACTOR IN MIND



LEARN MORE ABOUT US:



SALES@SEWEREQUIPMENT.COM . 1.888.477.7611 . WWW.SEWEREQUIPMENT.COM



POWER THROUGH.

MOVE MORE MATERIAL. COMPLETE JOBS FASTER.




Engineered for the rugged Hydro-Excavation industry, Ripsaw™ nozzles help you tear up your competition blasting a 0-degree straight water stream at up to 3,200 PSI. Constructed with stainless steel housing and tungsten carbide wear surfaces, Ripsaw™ nozzles withstand harsh environments and provide longer life than ceramic nozzles. All this allows you to move more material and complete jobs faster.

The largest coast-to-coast inventory of rugged, high-impact Ripsaw™ nozzles can be found at Jack Doheny Company. Dig into our years of knowledge and expertise and be confident because Jack's got your back. Visit dohenycompany.com or call us at 888.936.4369



Stop by and see us at the WWETT 20 show booth 5759.

Advertiser Index February 2020

Boss Industries, LLC 23	Radius HDD 21
Comet Industrial Pumps (A Division of Valley Industries) ... 29	 RAMVAC Vacuum Excavators by Sewer Equipment 5
 Custom Truck One Source 11	 Rival Hydrovac Inc. 17
 Ditch Witch back cover	 Sonetics 2
Fast-Vac/Multi-Vac 33	 Super Products LLC 9
GapVax, Inc. 35	TRUVAC by Vactor Manufacturing, Inc. 19
 Gorman-Rupp Company 7	Vac-Con, Inc. 3
Jack Doheny Company 6	VANAIR 15
John Brooks Company Limited (Dynablast) 31	Vivax-Metrotech Corp. 29
Kuriyama of America, Inc. 27	Classifieds 33
Milwaukee Rubber Products, Inc. 30	Marketplace 34

digDIFFERENT

Think outside the bucket

Published nine times yearly by COLE Publishing, Inc.
1720 Maple Lake Dam Rd., P.O. Box 220, Three Lakes, WI 54562

Call toll free 800-257-7222
Outside of U.S. or Canada call 715-546-3346
Mon.-Fri., 7:30 a.m.-5 p.m. CST

Website: digdifferent.com / Email: info@digdifferent.com / Fax: 715-546-3786

SUBSCRIPTION INFORMATION: A one year (9 issues) subscription to Dig Different™ in the United States, Canada and Mexico is FREE to qualified subscribers. A qualified subscriber is any individual or company in the United States or Canada that partakes in excavation, tunneling, boring, trenching, pipeline rehabilitation, relining or bursting — including manufacturers, dealers, and service companies. Non-qualified subscriptions are available at a cost of \$60 per year in the United States and Canada/Mexico and \$80 per year/\$150 for two years to all other foreign countries. To subscribe, visit digdifferent.com or call 800-257-7222.

ADDRESS CHANGES: Submit to Dig Different, P.O. Box 220, Three Lakes, WI 54562; call 800-257-7222 (715-546-3346); fax to 715-546-3786; or email nicole.maney@colepublishing.com. Include both old and new addresses.

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

ADVERTISING RATES: Call Tim Krueger at 715-550-4402 or email tim.krueger@colepublishing.com. Publisher reserves the right to reject advertising which it considers misleading, unfair or incompatible with the character of the publication.



Tim Krueger

EDITORIAL CORRESPONDENCE: Address to Editor, Dig Different, P.O. Box 220, Three Lakes, WI 54562 or email editor@digdifferent.com.

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

CIRCULATION: 26,089 copies, nine times yearly.

© 2020 COLE PUBLISHING INC.
No part may be reproduced without permission of publisher.



facebook.com/DigDifferent
twitter.com/DigDifferent
linkedin.com/company/dig-different-magazine

THE STRONG SILENT TYPE



wvett
VISIT US AT
BOOTH 1535

» SILENT PUMP. SIZED FOR PERFORMANCE.

Gorman-Rupp Prime Aire® sound-attenuated pumps are engineered to operate much quieter than industry standards. And, they are now available in sizes up to 14" with flows up to 10,000 GPM to handle your toughest bypass and dewatering applications. Features include spill containment environmental base, corrosion-resistant, acoustically treated enclosure and the latest in Tier IV engine-driven technology.

Call Gorman-Rupp at 419-755-1011 or visit GRpumps.com to find a distributor near you.

GR
GORMAN-RUPP
PUMPS

The Pump People®

Diversity Is King

WAYS TO GROW YOUR COMPANY COULD BE RIGHT IN FRONT OF YOU AT ONE OF THE UPCOMING INDUSTRY SHOWS

BY CORY DELLENBACH, EDITOR

When I attended my first Water & Wastewater Equipment, Treatment & Transport (WWETT) Show about seven years ago, most of the products there were portable restrooms, septic trucks and similar equipment.

While there were some vacuum excavators on display back then, I've seen an uptick in the number of vacuum excavators and other trenchless technologies appearing on the show floor.

Now there are vacuum excavation trailers, small trucks and large trucks on display throughout the show floor.

I think there is one big reason for seeing more of these type of machines at the show: diversity. Contractors who want to expand their companies are adding more services. These industries are tied to one another in many ways.

If you're a septic hauler, why not buy yourself a vacuum excavator and do some digging? You're still using a vacuum truck, pulling up material and dumping it. Same the other way around: If you are already doing vacuum excavation, why not take on septic pumping work?

WHY DIVERSIFY?

There are some big reasons why you should consider diversifying your company if you haven't already done so. Those include offering more product variety for your customers, getting into more markets and reducing risk factors as your brand grows.

More Product Variety: This, of course, is for the customers. You want to be that one-stop shop for your customers so they don't get swooped up by a competitor already offering more services. If your customer only has to work with one company, they will. That's because it's

easier for them to have one contact person and one invoice, plus they are familiar with the quality of work being done.

Entering More Markets: Let's say all you're doing right now is vacuum excavation. How many customers could you pick up by offering directional drilling, septic pumping, pipe cleaning and so on? By just offering one service, there are a lot of customers you're not hitting. The more markets you enter, the better it can be for your business.

Reducing Risk Factors: This ties into entering more markets. If you're doing directional drilling and vacuum excavation when the directional drilling industry takes a nosedive, you can still be OK with the vacuum excavation side. However, if you only offer directional drilling, then your company has just closed its doors.

START EXPLORING YOUR OPTIONS

We're jumping into the show season now, with the WWETT Show kicking it off for 2020, followed by CON-EXPO-CON/AGG in March and then the North American Society for Trenchless Technology's No-Dig Show in April.

Take some time to talk to manufacturers and other contractors and see what your options could be for diversifying and strengthening your company. It could be the smartest thing you've done with your business since you started it.

Dig Different will be at all of these shows coming up. If you would like to visit with us, email me at editor@digdifferent.com and let's set up a meeting. You can also call me at 715-350-8436.

Enjoy this issue! ▼



TALK TO MANUFACTURERS AND OTHER CONTRACTORS AND **SEE WHAT YOUR OPTIONS COULD BE FOR DIVERSIFYING AND STRENGTHENING YOUR COMPANY.** IT COULD BE THE SMARTEST THING YOU'VE DONE WITH YOUR BUSINESS SINCE YOU STARTED IT.

Are you ingenious?

Have you solved a tough excavation problem with a creative solution?

Share your story with 26,000+ other professionals.

Send a note to editor@digdifferent.com or call 715-350-8436

Super Products®



CONTRACTOR TOUGH VACUUM TRUCKS

Visit us at Booth #4131
February 18-20, 2020

wwett 20

 Super Products®

Super Products, an Alamo Group Company, is a leading manufacturer of vacuum trucks for a variety of applications.
800.837.9711 | info@superproductsllc.com | www.superproductsllc.com



NEW TECH

Determining If a Tool Is the Right Fit

Technology is constantly evolving, but before immediately purchasing the latest tool on the market, it's important to determine if it's truly the competitive difference-maker you're looking for. This online exclusive takes you through some steps that can help make that determination.

digdifferent.com/featured

OVERHEARD ONLINE

"INEFFICIENCY TYPICALLY IMPACTS A COMPANY IN 10- OR 20-MINUTE INCREMENTS. OVER THE COURSE OF A YEAR, THIS TYPE OF WASTED TIME CAN ADD UP TO THE POINT THAT ALL PROFITABILITY IS SACRIFICED."

The Reasons Construction Companies Fail
digdifferent.com/featured

BUSINESS OWNERSHIP

Can Your Company Function Without You?

For the first few years you were in business, you may have done it all. Success or failure depended 100% on your effort and abilities. Maybe your business is still operated that way for the most part. There are many benefits to maintaining a small operation, but you should also be leery of having a business that has a single point of failure. This online exclusive offers some tips on how to avoid that.

digdifferent.com/featured



ADDING EQUIPMENT

Companies Share Purchasing Strategies

You need certain pieces of equipment to effectively run your business. That part is obvious. But there is a lot to consider in how you go about acquiring that equipment. See if the experiences of the seven companies featured in this online exclusive can spark an idea that you can incorporate into your own business.

digdifferent.com/featured



CUSTOM TRUCK ONE SOURCE PROVIDES HYDRO EXCAVATION, ENVIRONMENTAL, INDUSTRIAL, SEWER CLEANING VACUUM TRUCKS FROM TOP MANUFACTURERS, INCLUDING

TORNADO, X-VAC, AQUATECH, AND MORE

SERVING **TWENTY-SIX** LOCATIONS

CALL US FOR MORE INFORMATION:
877-578-4139

CUSTOM TRUCK WILL BE AT THE WWETT SHOW! STOP BY BOOTH 5861 TO CHECK OUT OUR EQUIPMENT AND MEET OUR TEAM.



CUSTOMTRUCK.COM

OUR UNITS ARE BACKED BY:

24/7 CALL-CENTER SERVICE AND SUPPORT WITH LOCATIONS NATIONWIDE



DOUBLE DOWN ON DIVERSITY

COLORADO CONTRACTOR EXPANDS INTO PIPE BURSTING AND PROVIDES ADDITIONAL SERVICES TO MEET CUSTOMER NEEDS IN A HIGH-END MARKET

STORY: MARIAN BOND PHOTOS: DOMINIQUE TAYLOR

Providing a diverse menu of services is an important part of the business philosophy at PSI Plumbing Systems Inc. “We want to have the flexibility in our grasp to do any type of job that comes our way,” says Jim Harper, owner.

Harper’s company initially concentrated on new construction in the custom home market, but the focus shifted to providing a variety of services, including drain cleaning to residential light commercial and municipal customers.

Today, as a full-service operation with 10 technicians, 35% of business involves drain cleaning, jetting and pipe bursting, with the balance in plumbing, remodel work and HVAC. Its varied capabilities give the company a strong advantage in the marketplace, as it is one of the few local companies offering pipe bursting services.

In 2010, expansion took a new course. Harper and Aidan Kelly, PSI’s vice president, opened a second company, PSI Environmental Services, providing pumping services to their customers. This allows them to deliver

solutions to residential customers on septic systems and to hotels and restaurants for grease collection.

Kelly, an Irish immigrant, has worked in the industry since he came to the U.S. in 1990 and brought both managerial and hands-on experience. He has been with PSI since 2007.

BUILDING THE TOOLKIT

Harper and Kelly attended the 2008 Pumper & Cleaner Environmental Expo (now the Water & Wastewater Equipment, Treatment & Transport Show) in search of more jetting power. After talking to a number of manufacturers, they decided on a US Jetting 4025 (4,000 psi/25 gpm) jetter in an insulated box mounted and enclosed on a 2008 GMC Topkick 5500 diesel. It includes a 600-gallon water tank and dual pullout reels with a 78 hp DEUTZ engine to power the jetter. The truck carries 500 feet of 5/8-inch hose and 1,000 feet of 3/8 inch.

“The reason I thought it important to add a larger jetter was to better serve our commercial customers,”

Aidan Kelly, left, vice president of PSI Plumbing Systems, and Adam Crambell, technician, monitor the pipe bursting equipment (Pipe Genie) during a project in West Vail, Colorado.

Harper says, noting the equipment goes out on six out of 10 calls. He had been using a small cart jetter.

“Ultimately, jetting is repetitive business for us. That is, it’s business that never goes away, as we go into hotels, restaurants and even serve residential customers on a yearly contract basis. Restaurants have to be taken care of. So we do have a lot of contract jetting. We also serve apartment buildings. This service makes everyone feel more secure. Jetting has been a huge advantage for us. In fact, our business with jetting and pipe bursting has helped us grow exponentially.”

PSI crew members also went through confined-space entry training. The training allowed the company to meet its own needs, as well as those of local municipalities and other plumbing companies not equipped for the task, and that has opened additional doors. They are frequently called on to repair water meters in vaults. Confined-space entry is also required when jetting culverts for the Colorado Department of Transportation and when dealing with sewage lift stations.

All PSI technicians receive extensive confined-space entry training and rely on equipment from French Creek Production. The company frequently gets calls from other plumbing companies — as well as light commercial and municipal clients — needing this service.



PSI Plumbing Systems Inc. Edwards, Colorado

ESTABLISHED: 2000

OWNER: Jim Harper

EMPLOYEES: 15

SERVICES: Plumbing, drain cleaning, jetting,
pipe bursting, confined-space entry

SERVICE AREA: Vail Valley and adjoining
cities in the Rocky Mountain region

WEBSITE: www.psvail.com





A background in the business

Jim Harper, owner of PSI Plumbing Systems Inc., derives a great deal of satisfaction from his background in the plumbing industry, beginning with his high school education at Tri-County Regional Vocational Technical High School in Franklin, Massachusetts, where, at 15, he began learning the trade. During his senior year, Harper had a job as he completed his studies. It was one week of school, one week of work throughout the educational process.

"I believe we have lost our way in this country, as there is a huge income gap in the trades," Harper says. "Kids are going to college, racking up huge debt, and they often don't like what they are educated to do. There are so many other areas where you can be successful, but people are missing that boat because there are not enough opportunities or encouragement to go in a different direction."

Harper took the training he received and moved west, ending up in Vail, Colorado, in 1996. He was a co-owner of Peak One Plumbing, and in 2000, he struck out on his own with PSI Plumbing Systems Inc.

"When I was a kid going to that school, I probably didn't appreciate the tremendous opportunity I had been provided," Harper says. "It was unique. I didn't know it at the time. I had great teachers and learned a ton of stuff. Best of all, I found I really loved plumbing."

The team at Plumbing Systems includes, front row, from left, Mike Neubauer, inventory; Rudy Frausto Jr., technician assistant; Tony Burt, plumbing technician; Ramona Ryden, office manager; Aidan Kelly, vice president; Jim Harper, owner/president; Kristiana Perleberg, scheduling and bid job management; Tom Johnson, HVACR manager; Oscar Varela, plumbing and HVACR technician; and Adam Crambell, plumbing apprentice and jetting/pumping technician. Back row, Ron Lovato and Derek Murphy, plumbing technicians.

BURSTING WITH OPPORTUNITY

By 2010, Harper and Kelly were intent on adding pipe bursting to their menu of services. They believed it would provide solutions for problems they were seeing and could help them avoid destruction of driveways, landscapes and large trees in their market area.

The company settled on a Pipe Genie 40-ton unit with a 3/4-inch chain and Honda PowerPak to start doing pipe bursting work.

"We wanted to make sure someone would be available to offer the advice and counsel we might need," Harper says. "We talked with the owner of Pipe Genie and were assured that he would always be available by telephone and would come to our location if we needed him. This was a huge factor for us, and he has always been quick to respond if we have any issues."

Harper says their very first project was, in fact, a brutal job, providing a very fast learning curve and a true test of the support they would receive from Pipe Genie.

The 400-foot bursting job involved three different buildings connected to one lateral. The lines ran under a driveway, shrubbery and trees. Access holes

“ONCE YOU UNDERSTAND HOW THE [PIPE BURSTING] EQUIPMENT WORKS, IT IS PRETTY STRAIGHTFORWARD. THE KEY IS KNOWING WHAT TO LOOK FOR. YOU LEARN IT FAST. WE ALL ENJOY DOING THAT KIND OF WORK. FOR US, IT WAS AN EASY FIT.”

Jim Harper

were dug at each building, along with three more in the driveway. In one section, they ran into a transition from cast iron to ductile pipe, which presented some issues. Ductile iron is difficult to burst because it is thick and solid and will sometimes split rather than shatter, but it can still be accomplished. Support from Pipe Genie got them through, and the crew got a fine education.

Another early pipe bursting job Harper notes as particularly interesting took place on Vail Mountain where an old house was being demolished. The damaged clay and cast iron lateral line had totally failed. This line ran from south to north and was all downhill and under the patio and hot tub of a prominent property. This was a 130-foot job between the house and the downstream manhole, and pipe bursting greatly limited surface disruption.

The company also handled a project involving a 6-inch line that had been compromised. It was broken in many places, with extensive root penetration. They pulled 130 feet of 6-inch HDPE pipe through the existing cast iron waste line without incident.

Typically the company has two technicians on a job and will call in for additional help on larger projects. Technicians are specifically trained for this as well as other disciplines.



Adam Crambell feeds a video camera (RIDGID) through a pipe as he watches the video monitor to check for blockages in the lines during a jetting service call.

“Once you understand how the equipment works, it is pretty straightforward,” Harper says. “The key is knowing what to look for. You learn it fast. We all enjoy doing that kind of work. For us, it was an easy fit.”

He says their customers, once they understand the process, are open to the concept and particularly like the 100-year warranty on the pipe.

FULL HOUSE

Sixty percent of PSI’s business is residential, with the balance in light commercial and municipal work and some subcontracting with other plumbers. Its market area is a 100-mile radius and includes the towns of Vail, Edwards, Aspen, Gypsum and Silverthorne, and they operate out of two facilities in Edwards and Gypsum with a combined 7,100 square feet of office, warehouse and yard space.

Performing at high altitudes and in harsh winter conditions requires a stable of capable vehicles, including four Hackney-bodied Dodge and Chev-

The Biggest Advancement in PTO Underdeck Systems in 50 Years!

In 1972, Vanair® invented the PTO shaft-driven, vehicle mounted, rotary screw air compressors. Today, we continue to advance the industry with our newly-designed underdeck power system. The innovative features we’ve developed, include:

Patent Pending FailSafe™ Dual Sensor Redundancy System

Patent Pending ThermalGuard™ Weather Protection Kit

UltraLife™ 6000 Hour Air/Oil Separator Element

Advanced Separation Tank

Redesigned V-TEC® II Display and Compressor Control System

New Brushless Fan Cooler Package

No other manufacturer offers these advanced technologies, ensuring the highest reliability and lowest life cycle cost for your fleet. These innovative features, plus the weight and space reduction, ease of use, and greater mobility you’ve come to expect from the Vanair® underdeck PTO make it the perfect choice for increased uptime.



Call 800-526-8817 to arrange a demonstration. Learn more at vanair.com/news



Aidan Kelly jets a clogged 300-foot lateral line during a pumping and jetting service call to Mountain Beverage in Gypsum, Colorado (US Jetting).

“THE NO. 1 THING IS GETTING THE RIGHT PEOPLE ON THE BUS, OTHERWISE YOU WILL NOT GO ANYWHERE. PEOPLE SHOULD NOT BE AFRAID TO PAY GOOD MONEY, BECAUSE IF YOU DO, YOU GET THE RIGHT PEOPLE, AND THE BUSINESS WILL GROW ITSELF.”

Jim Harper

“We are a team working together as we encounter situations and problems that need to be solved — coming up with a game plan — and getting the job done,” he says.

Harper commends not only the technicians in the field, but the office staff as well. “We have found the right people, and the office runs very smoothly.

“My philosophy is that we look for experience, and right at the top is also attitude,” he says. “The No. 1 thing is getting the right people on the bus, otherwise you will not go anywhere. People should not be afraid to pay good money, because if you do, you get the right people, and the business will grow itself.”

Harper says providing a wide menu of services offers a distinct advantage: “There are always going to be downtimes for one or the other type of equipment. Drain cleaning is not always busy, but there might be a pipe bursting job. The same thing with jetting or other types of work.

“In the final analysis, it’s our diversity that always pulls us through.” ▼

A pipe bursting head is about to be pulled through a pipe to break it up during a job near Minturn, Colorado.



rolet trucks and vans, along with several other heavy-duty service vehicles outfitted for PSI’s needs.

Many of the systems they service in their 24/7 operation go back to 1962 when Vail was founded. A lot of infrastructure has deteriorated, and they frequently see root infiltration from aspens seeking a water source. Pipes are typically clay and ductile iron, along with some SDR plastic.

Inspection is handled primarily with Pearpoint (USA) and RIDGID camera systems, along with the Gvision 2000 system from EPL Solutions. RIDGID SR-20 locators and cable machines from RIDGID and Spartan Tool round out the equipment inventory.

TYING IT ALL TOGETHER

For Harper, the most satisfying element of operating his business is working with the great people on his team.

Featured products from:

DEUTZ Corporation
770-564-7100
www.deutzamericas.com

RIDGID
800-769-7743
www.ridgid.com

EPL Solutions Inc.
714-453-9760
www.epls-usa.com

Spartan Tool
800-435-3866
www.spartantool.com

Pearpoint (USA)
800-688-8094
www.pearpoint.com/en-us

ST Engineering Hackney, Inc.
800-763-0700
www.hackneyservice.com

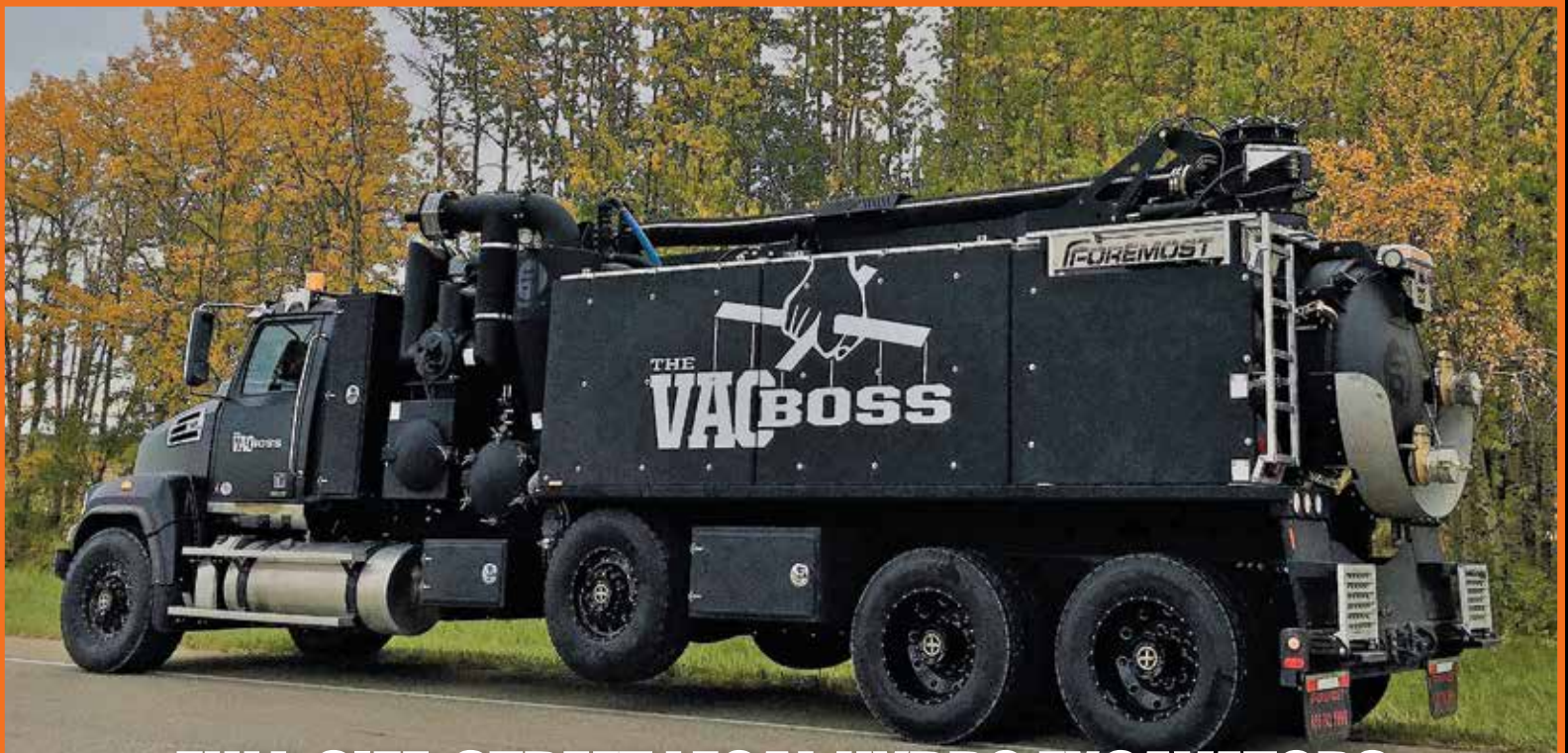
Pipe Genie Manufacturing
877-411-7473
www.pipegenie.com

US Jetting
800-538-8464
www.usjetting.com

COST EFFECTIVE. EFFICIENT. LIGHTWEIGHT.



MID-SIZE, STREET LEGAL HYDRO EXCAVATORS



FULL-SIZE, STREET LEGAL HYDRO EXCAVATORS



RIVAL™
HYDROVAC

1-844-GO-RIVAL

Rival Hydrovac Inc.
Box 5, Major, SK SOL 2H0
rivalhydrovac.com



At the core of being a good CCTV operator is not only being savvy with technology, but also savvy enough to adapt to changing conditions.

“YOU NOT ONLY HAVE TO BE SAVVY WITH TECHNOLOGY, BUT YOU NEED TO BE SAVVY ENOUGH TO ADAPT.”

Matt Timberlake

Developing a Skilled Team

GOOD CCTV OPERATORS SHOULD BE SELF-MOTIVATED AND HIGHLY TRAINED

BY TRACI BROWNE

A couple hallmarks of good CCTV inspection operators are resourcefulness and an abundance of common sense when it comes to solving safety issues and problems with equipment. But how do you find — or rather, develop — workers with this skill set? What does it take to become a CCTV operator?

Initiative is one of the key traits to look for in an operator, says Matt Timberlake, president of Ted Berry Co. “You not only have to be savvy with technology, but you need to be savvy enough to adapt. You need to be a continual learner. That’s at the core of the really good CCTV operators out there.”

While a good salary and the promise of working with robotics may attract people to sewer and water systems, CCTV inspection operator is by no means an entry-level job. “You shouldn’t be a CCTV operator unless you know how sewer systems function and how manholes work and don’t work,” Timberlake says. Once those basics are covered, CCTV inspection training can begin.

Michael Kerr, NASSCO training director, says a good CCTV inspection operator has a desire and ability to learn and is a self-motivated individual. He says that today’s inspection operators not only need to be skilled at manipulating the robot, but they must also interpret what they are seeing.

GRADUAL TRAINING

Both Timberlake and Kerr suggest a gradual training program: one where a candidate is working alongside an experienced operator to get to know the equipment and to observe how the operator codes.

Once trained on the robotics, Timberlake sends his operators for NASSCO Pipeline Assessment and Inspector Training certification programs. Opera-

tors can then work independently on smaller-diameter pipe to build experience until finally they become what he refers to as the “elite crews” of pipe inspection — the operators who are inspecting 100-plus-inch pipes.

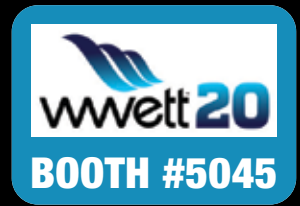
Steve Sebastian, national training manager for EnviroSight, says that as robots progress and are equipped with better cameras and sensors for other data, the information they gather combined with software analysis helps minimize variances in operator perception. Meaning, the software will be able to accurately determine if a pipe is 30% blocked or if it’s more like 50%. Better accuracy could mean the difference between a relatively inexpensive repair and a costly pipe replacement. However, that level of sophistication will require more skill and training for the operators.

EnviroSight uses a support network all across the U.S., and those partners are responsible for training the end user. Sebastian says the company’s approach is to teach operators the basics of the equipment and give them a few weeks to put that training into use in real-life scenarios. Local support is what makes this layered approach to training possible.

“We don’t want to overwhelm them with the fancy stuff until they are capable of handling the basics,” Sebastian says.

Once the operator has the basics down, the trainer comes back to cover the reporting software and other functionalities of the robot.

Given the fact that these robots are significant investments for drain cleaning companies, it’s no wonder resourcefulness and common sense are traits to look for. Also, let us not forget that CCTV inspection operators are not just responsible for their equipment, but they are also responsible for crew and public safety. ▼



DIG SAFE. DIG SMART.

Introducing TRUVAC[®] Brought to you by Vactor[®] Manufacturing, Incorporated

Safe-digging is smart digging, and our TRUVAC line of vacuum excavators were built to meet even the most stringent safe digging challenges. But TRUVAC vacuum excavators aren't just built to be safe. They're built to be tough. Precise. Fast. And armed with so many smart features you'll never look at vacuum excavation the same way. They're built by Vactor Mfg., Inc., and they've been building the finest sewer cleaners, vacuum excavators, and industrial vacuums for decades.

That's why digging with TRUVAC... **IS DIGGING SMART.**



DIG STRONG. DIG FAST. DIG RIGHT. DIG SMART.

©2020 Vactor Mfg., Inc. All Rights Reserved.

When it comes to quality engineering, innovation and reliable service, no other vacuum excavators can match TRUVAC.

Learn more at truvac.com



Failing Companies

FROM STARTING FOR THE WRONG REASONS TO WORKING WITH FAMILY, THERE ARE MANY THINGS THAT CAN DOOM A CONSTRUCTION BUSINESS

BY LARRY KOKKLENBERG

The Small Business Administration identifies a huge failure rate among startup companies:

- Roughly 20% fail in the first year.
- Roughly 50% fail within five years.
- Roughly 66% fail within 10 years.

Construction companies have an even uglier track record. Roughly two-thirds go out of business within five years. The owners of those failed companies tend to point fingers at external factors such as insurance, taxes, politics, an inability to get enough workers, etc. But those factors aren't really the cause of company failures, which is why the competitors down the street seem to be handling them just fine.

In reality, the real causes of construction company failure are within the control of the company owner. That doesn't mean these causes are always easy to fix. It takes planning, discipline and hard work. But nonetheless, they are controllable.

There is long list of reasons for failure, but here are a few of the more consequential:

STARTING THE BUSINESS FOR THE WRONG REASONS

Many companies don't start out with a strategic business plan. The owner simply wants to be his or her own boss. Sometimes a friend says, "Let's start our own company and make a lot of money." The problem is that nobody gets rich quick in the construction industry. There are only two entities that are in the business of making money: the Department of the Treasury and counterfeiters. Construction companies are in the business of serving customers.

Starting a construction company should be based on a legitimate opportunity, such as little competition in a growing market area.

The owner should also have a clear vision for what he or she wants the company to be, along with a road map toward profitability. Having a strategic road map will also help new companies avoid another common cause of failure: trying to grow and diversify too quickly.

POOR COMPANY CULTURE

Nobody wants to go to work in a war zone. When that's the type of culture that exists, people just put in the bare minimum. This culture often leads to higher employee turnover, sloppy work, higher workmen's comp claims, and financial losses.

The unfortunate truth is that many construction companies do not have a great culture. Leadership must identify what employees want, what the company wants and how to get there. It takes commitment and time, but it can be done.

POOR HIRING

There's a saying I like: "When you just hire a pair of hands, you never get a head."

For long-term success, companies must hire people with the desire and ability to grow with the company and help lead. Warm bodies aren't enough.

This can be harder to do when hiring out of a union hall. But even in that circumstance, it's probably better to pay any show-up costs and ask for a more qualified employee.

That's far less costly than carrying an employee who continues to perform substandard work or has a bad attitude.

POOR FINANCIAL SYSTEMS

This is a big bullet point under the broader topic of capital and financial management. Many construction companies can't track if they're making or losing money until the very end of the year. Companies that fail to bill for all of their work because they are so busy completing projects and doing estimates for new projects aren't going to succeed.

Good financial systems are an absolute must so that those types of things do not happen. Accounting software can help, but it won't solve everything. A good accountant or in-house financial manager may be advisable — one who will provide detailed accounting at least every few months.

INEFFICIENT OPERATIONS

Inefficiency rarely happens in big, easily identifiable chunks. Inefficiency typically impacts companies in 10- or 20-minute increments.

A good example is a seven-person crew standing around on a job site waiting for a truck to show up. Over the course of the year, this type of wasted time can add up to the point that all profitability is sacrificed.

POOR CUSTOMER SERVICE

A lot of companies do not listen to their customers very well. Companies just focus on completing the work according to the contract. If they get paid, they assume all is good. But remember, construction companies are in the business of serving customers, and that includes good customer service.

FAMILY-RUN CORPORATIONS

These businesses have an even higher failure rate than the typical company. Family-run businesses have a unique set of challenges that generally hurt future generations more than the current generation. This is a complex issue with many facets to consider.

ABOUT THE AUTHOR

Larry Kokkelenberg, Ph.D., is a principal in *Organizational Trainers & Consultants*, a dynamic consultancy serving both the public and private sectors. ▼

Want to Learn More?

For more information, attend the educational session called **Top Ten Reasons Why Construction Businesses Fail** on Thursday, March 12, from 1-2:30 p.m. at CONEXPO-CON/AGG in Las Vegas.

— MORE TIME —
DRILLING
— LESS TIME —
SCREWING AROUND.
(SORRY)
ABOUT THAT



with the
TOUGHEST TOOLS
KICK-ASS
CUSTOMER SERVICE
AND THE INDUSTRY'S
LARGEST INVENTORY
— OF HDD TOOLS —
RADIUS WILL KEEP YOU
UP AND RUNNING.

SHOP TALK

Vacuum excavators handle a ton of work every year, but keeping up with maintenance on the machines can go a long way in ensuring they last for your company.



Keeping It Running

USE THESE TROUBLESHOOTING TIPS TO KEEP YOUR HYDROEXCAVATOR OUT OF THE SHOP AND ON THE JOB MAKING MONEY

BY KEN WYSOCKY

No matter how well a hydroexcavator is engineered and built, the rigors of working under difficult and demanding conditions take their toll. As such, some downtime is inevitable.

But savvy operators with the ability to troubleshoot problems can get their machines up and working again, without suffering significant losses in revenue and job site productivity.

With that in mind, here are some common problems operators encounter while running hydroexcavators and what can be done to solve them and keep the productivity train rolling.

Mike Selby, southeastern regional sales manager for Vac-Con, and Dave Barr, sales manager at Presvac Systems, who have a combined 60 years' experience in the industry, share their best tips for troubleshooting in the field.

LOSS OF VACUUM

This is typically caused by debris clogging a hose, a tear in a hose or dirty filters. "Most machines have a vacuum gauge," Selby explains. "If it shows elevated vacuum while it's not working, you have a hose restriction. If you have low pressure while working, you usually have some kind of tear or hole in the hose. Or the suction filters that protect the blower from carry-over contamination are clogged."

To fix clogged hoses, booms or turrets, shut down the machine and check out each one. "Blockages are most likely to occur where the hose has vertical to horizontal to vertical transitions," Barr says. "Prioritize the most likely location of the problem and move down to the least likely location. When you find the clog, move the hose out and give it a shake to loosen the debris."

To help prevent clogged hoses, Barr suggests using the following rule of

thumb regarding hose diameter: The hose should be three times the size of the material being vacuumed. If it's 2-inch-diameter gravel, for instance, use a 6-inch-diameter hose.

If the hose, boom and turret are clear, then examine the cyclone separators. If they're clogged, lighter materials remain in the airstream longer and carry over into the filter, which is final protection for the blower. The remedy for this is to clean or replace the cyclones and/or filter, Barr says.

"IF SOMETHING FAILS ON A NOZZLE AND YOU DON'T HAVE A REPLACEMENT, THEN YOU'RE DONE — DEAD IN THE WATER."

Mike Selby

Selby recommends having several extra separators on hand. While one is getting cleaned and washed, another can replace it and the truck can keep working. "If the cyclonic separators get full, material can't settle out," he explains. "So you need to keep the separators clean. Some have a removable receptacle at the bottom that can be pulled out and dumped."

Operators should also carry extra filters to replace clogged filters. To minimize downtime, consider cleaning filters in between dump cycles, Selby advises.

If a hose is torn, use duct tape to stop air leakage. "You have to remember that material is running through the hose at 150 to 200 mph, and sands and rocks can eventually abrade a hose," Selby says. "Wrapping a hole with duct tape is a quick field fix that'll at least get you through the day until you have time to replace the entire hose. Trying to keep working with just a duct-tape patch only delays the inevitable total-hose failure."

“AS YOU CREATE VACUUM, THE HORSEPOWER DRAW INCREASES. BUT IF YOU HAVE HIGH VACUUM AND LOW REVOLUTIONS PER MINUTE, THE TORQUE GOES UP ... AND THE DRIVE SHAFT CAN ONLY HANDLE SO MUCH TORQUE.”

Dave Barr

NO WATER FLOW

Presvac hydroexcavators are equipped with triplex plunger water pumps, in which water first passes through a strainer. A clogged strainer will stop water flow, which results in a hammering or banging noise, Barr says.

“The solution is to shut down the system, then check the water-supply line and the strainer to make sure they’re clear. When you start up again, be sure to open the drain valve to make sure everything flows properly and that there’s no air in the water-supply line.”

Selby also points out that some nozzles are more fragile than others. As a result, they’re more prone to clogging with whatever material is being excavated.

Fixing that requires taking apart the nozzle, which isn’t always feasible out in the field. “So carry extra nozzles,” he suggests. “If something fails on a nozzle and you don’t have a replacement, then you’re done — dead in the water.”

LOSS OF WATER PRESSURE OR FLOW

Several things typically cause loss of water pressure, including a worn or improperly sized nozzle tip or an unloader that’s stuck open or set improperly, Barr says.

Resolve the first two issues by replacing the nozzle tips. As for the unloader, which regulates water pressure, it needs to be disassembled and cleaned. “Usually there’s sand or particulate stuck inside the seats of the valve,” Barr says. “Because it’s a high-wear item, it’s designed to be maintained in the field.”

Furthermore, operators need to ensure the water pressure is set properly for the type of nozzle being used. “You have to size the nozzle according to the pressure. We have an adjustable unloader you can set from 1,200 to 3,500 psi.”

BROKEN BLOWERS

There’s not much anyone can do in the field to repair a blower. But Barr points out that operators can minimize blower issues by not running the hydroexcavator at high vacuum while the engine is running at low revolutions per minute. This can occur when a hose gets clogged while cycle-loading heavy materials, such as sludge.

“As you create vacuum, the horsepower draw increases,” he explains. “But if you have high vacuum and low revolutions per minute, the torque goes up ... and the drive shaft can only handle so much torque.”

To avoid this, Presvac hydroexcavators feature a velocity-control valve that allows the operator to reduce load velocities as needed, he says.

If the blower isn’t working because carry-over debris has locked it up, an operator can try to physically turn the blower backward to work the material out. To do this, turn off the machine, then manually turn the blower in the opposite direction than it normally rotates, Selby says.

“You need to put a big pipe wrench on the drive shaft in order to get it to spin backward. The drive shaft is easily accessible.”

MAINTENANCE MATTERS

Performing routine maintenance and listening for unusual noises can go a long way toward minimizing repairs and keeping small issues from becoming bigger issues.

“An ounce of prevention is worth a pound of cure,” Selby says. “If you do periodic maintenance as recommended by the manufacturer, the machine should at least last through its expected life cycle of roughly 10 years.” ▼

WHAT?
STOP THE SCREAMING!

STOP SETTLING ON HIGH ENGINE SPEEDS TO OPERATE YOUR UNDERDECK AIR COMPRESSOR!

NOW WITH DUAL B-CAN PERFORMANCE!

BOSS® Industries underdeck air compressor systems consistently have had the lowest RPM/engine speeds in the industry!
Less RPM's mean more fuel savings, less wear and tear on your vehicle, not to mention less noise!
Contact a BOSS Distributor today to learn how to *stop the noise!*

Air Compressors • Generators • Welders • Tool Lifts • OEM Packages • Vapor Recovery • Gas Boosters

vwvett
BOOTH
4746

BOSS
engineered AIR/POWER systems

BOSSair.com | 800/633-6567

BY CRAIG MANDLI

Casing/Piping/Tubing

RELINER/Duran Modular Manhole Invert Channel System

RELINER/Duran Modular Manhole Invert Channel Systems use molded fiberglass flumes with smooth sewer pipe interfaces to rehabilitate inverts without flow interruption. The field-installed modular components bolt together inside the manhole and serve as the form for a new concrete bench. They eliminate the inconsistencies associated with field-formed concrete channels. The full-depth lined channels are high-flow and easy to clean and maintain. Standard 8- and 12-inch-depth channel sections fit through a 24-inch manhole frame and will accommodate 6- through 12-inch pipes. Larger sizes are available. Parts are selected based on the unique configuration of each manhole.

800-508-6001; www.reliner.com



Excavating Equipment

Ditch Witch RT80 trencher

The RT80 trencher from Ditch Witch offers a narrower footprint and a modular design to fit and function in small, urban environments. The narrower, more modular design is ideal for heavy-duty trenching, vibratory plowing and microtrenching in confined urban and residential areas where larger machines cannot maneuver as freely. With the typical residential street lane having a width of 11 feet, the RT80's footprint of just over 6 1/2 feet gives operators plenty of room to work without disrupting the surrounding area. The trencher is powered by a 74.5 hp DEUTZ Tier 4 diesel engine. It delivers a static load rating of 35,407 pounds and a wide-axle rating of 39,000 pounds.

800-654-6481; www.ditchwitch.com



Horizontal Directional Drilling

Akkerman 1525B/D

The 1525B/D hydraulically driven high-pressure pump from Akkerman is used for effective pilot tube and other pipe jacking operations particularly on larger-diameter bores. The large, 525-gallon tank offers in-tank agitation for continuous mixing, independent agitation, or agitate and pump to maintain optimal mud viscosity. It displaces a Marsh Funnel viscosity as high as 50 seconds with pump flow up to 10 gpm at 2,500 psi. It is powered by a 20.7 hp diesel engine with an 8-gallon fuel tank. Like its 325-gallon counterparts, it is simple, safe and reliable. There are few moving parts, no belts and a shrouded agitator. The stepped platform makes it easy for operators to access and fill the tank.

800-533-0386; www.akkerman.com



Hydroexcavation Equipment

Dynablast HV420F-12VRED

The Dynablast HV420F-12VRED hydrovac water heater produces 420,000 Btu with an output temperature of 175 degrees F at 5 gpm, making it suitable for colder climates and improved digging in clay-filled areas. All models come with ETL certi-



fication for safety, which also includes certification on the coil for higher efficiency and heat transfer, a stainless steel target plate for increased coil life and a design with serviceability in mind with momentary override control. A 19-by-19-inch footprint makes it suitable for compact installations.

905-867-4642; www.dynablast.ca

Easy Kleen Pressure Systems Wildcat Heaters

Wildcat Heaters high-pressure, oil-fired hot-water/steam heaters and hydraulic pump systems from Easy Kleen Pressure Systems are designed for reliability and efficiency and are installation-ready for vacuum trucks and hydroexcavators. A full range of heater options includes dry steam, redundancy packages, Schedule 80 and 160 stainless steel or A53 boiler pipe, fine-tuned temperature and flow-control systems. All coils are manufactured in-house, with CRN boiler-approved coils now available. Heaters can be designed for mounting in a cabinet or supplied as a completed cabinet unit. They are CSA and ETL approved. Hydraulic pumping systems are available.

800-315-5533; www.easykleen.com



Enz USA HydroX nozzle

The HydroX nozzle from Enz USA is available in 3/8-inch NPT or 1/2-inch connecting threads, and it can function at up to 5,000 psi with flow as low as 8 gpm. It combines a powerful, oscillating water jet with the high removal rate of debris. A tungsten carbide front jet ensures a longer life than ceramic jets can offer. For quick and easy maintenance, a repair kit is available. Due to the nozzle's simplicity, repairs can be made quickly and efficiently in the field with little downtime. For the operator's safety, a plastic cover provides protection against harsh and sensitive environments.

888-369-8721; www.enz.com



GapVax HV33

Designed to safely transport water and debris in urban areas, the GapVax HV33 is shorter, smaller and more compact than its predecessor. It is 30 feet long overall on a medium-duty chassis and includes a 600-gallon water tank, 6-cubic-yard debris body, 6- or 8-inch top-mounted telescoping boom with a 14- to 17.5-foot reach, 4,000 cfm power and an inverted, full-opening tailgate.

888-442-7829; www.gapvax.com



HotJet USA Vac 'n Jet Series

The HotJet USA Vac 'n Jet Series of vacuum trailer jettors are rugged and compact; are engineered to haul equipment and spoils loads; can clean valve boxes and storm drains; and can hydroexcavate and/or clean drainlines and sewer lines. They offer hot- and/or cold-water operation with a choice of engine options ranging from 13 to 66 hp and gas or diesel operation. They are equipped with premium triplex pumps, a 500-gallon spoils tank, 200-gallon water tank, Gardner Denver vac/blowers, 4-ton hydraulic dump and centri-clean filter system. They can also be custom-engineered and designed to meet specifications.

800-624-8186; www.hotjetusa.com



Hydra-Flex Ripsaw

The Ripsaw rotating turbo nozzle from Hydra-Flex blasts a 0-degree water stream at up to 3,200 psi while rotating at a high speed to provide an 18-degree cone of coverage. Its cone-shaped flow pattern is ideal for potholing applications. The heavy-duty, high-impact nozzles are constructed with stainless steel housings and tungsten carbide wear surfaces to withstand harsh environments

and provide long life. Repair kits are available for extended life and lower operating costs. Select from traditional coating (blue) or upgrade to the heavy-duty coating (green), a formulation designed for use in extreme environments. Greater impingement allows users to complete jobs faster or use a smaller nozzle size while getting the same impact as nozzles with higher flow rates.



952-808-3640; www.hydralflexinc.com

Imperial Industries Hydro 3600 Hybrid Excavator

The Hydro 3600 Hybrid Excavator from Imperial Industries offers compact power and versatility, with capabilities that include digging trenches to locating fiber optic cables and clearing debris. It provides direct applications for septic hauling, utilities maintenance and emergency response situations. It can be operated by one person. Units are available in code and noncode.



800-558-2945; www.imperialind.com

NozzTeq MONRO-JET

The MONRO-JET hydroexcavation nozzle from NozzTeq combines the power of a solid-stream pencil jet with the large coverage of a fan jet. An orbital design increases performance at a lower gallons-per-minute rate and pressures as high as 36,250 psi, allowing the operator to move faster when hydroexcavating and cleaning surfaces or sewer lines. It can be used for other types of surface cleaning such as concrete, steel, castings and large surface areas including line removal from runways. It can be modified for internal cleaning of sewers and pipes of all types.



866-620-5915; www.nozzteq.com

Presvac Systems hydrovac

The Presvac Systems hydrovac is designed for versatility and cold-weather operation with optional full compliance with Department of Transportation specifications for collection or transportation of hazardous materials. The high-vacuum blower allows extraction of all types of soils, gravel, rock, clay, water and silt material, with knockout features in the debris tank minimizing carryover. Modular filtration configured to blower size provides blower protection and minimal maintenance, according to the maker. It comes with a heavy-duty, 8-inch boom that extends up to 25 feet with six-way hydraulic power and wireless controls for all boom functions, a soft-start water pump, vacuum breaker and truck engine speed.



800-387-7763; www.presvac.com

RAMVAC Vacuum Excavators by Sewer Equipment HX-12

The HX-12 hydroexcavator from RAMVAC Vacuum Excavators by Sewer Equipment has a 12-yard debris box and a standard 4,400 cfm blower designed to match the performance of larger blower machines while delivering fuel economy. Its directional discharge system allows the off-loading of debris back into the excavation site without the mess of dumping the tank and lets operators easily blow obstructions out of the dig tube without having to shut down vacuum operations. It is a true all-weather vacuum excavator, as all major water components, including plumbing, water tanks and water pump, are housed within a temperature-controlled environmental chamber to avoid water system freezing when working in subzero temperatures. It includes a long-range wireless remote, NEMA 4 electrical system, a 900,000 Btu water boiler and a three-stage cyclonic filtration system.



877-735-4640; www.ram-vac.com

Rival Hydrovac T7 Tandem

The T7 Tandem hydrovac from Rival Hydrovac was designed primarily to be loaded with debris and driven within legislated road limits with most types of debris on board. The unit comes standard with a scale that reads real-time weights both in the cab and on the wireless remote to confirm weights prior to travel. It is operator-friendly, and the operating system is engaged through one PTO switch. The remainder of the operation occurs from the rear panel or the wireless remote. The components are high performance, and the unit will dig at levels competitive to large units, according to the maker.



403-550-7997; www.rivalhydrovac.com

Soil Surgeon hydroexcavating tool

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



949-363-1401; www.soilsurgeoninc.com

Super Products Mud Dog

The Mud Dog hydroexcavator from Super Products is designed for operator convenience and consistent performance in the harshest environments. It is available with an air excavation option, which allows the operator to always choose the best application, water or air, for the job. It is available with 12- or 16-yard debris capacity. Each model comes standard with tilt ejection unloading, which provides a safe dumping solution, and is equipped with a rear-mounted boom that can reach 27 feet and has 335-degree rotation.



800-837-9711; www.superproductslc.com

Tornado Global Hydrovacs F4 ECOLITE

The F4 ECOLITE from Tornado Global Hydrovacs has a 12-cubic-yard mud tank and holds 1,550 gallons of freshwater. The unit is more than 7,000 pounds lighter than the company's older models and offers more than double the payload. The boom has a 342-degree rotation and a 26-foot reach. The smaller F3 ECOLITE is a 10-cubic-yard, 1,250-gallon tandem-axle unit that more than doubles older payload capacities. It features an 8-inch boom and 3,800 cfm blower.



877-340-8141; www.tornadotrucks.com

Transway Systems Terra-Vex HV38

The Transway Systems Terra-Vex HV38 has a 12-yard debris tank with onboard scales for efficient hauling and off-loading, complete with a 26-foot-by-8-inch telescopic boom. It has a one-touch-operated hydraulic half-door with a 3,800 cfm at 27 inches Hg hydraulically driven blower. Water pressure is achieved with a hydraulically driven triplex pump, delivering 10 gpm at 3,600 psi from a 1,000-gallon HDPE baffled water tank. The water is heated with a 420,000 Btu diesel-fired burner for cold-weather operation.



800-263-4508; www.transwaysystems.com

(continued)

TRUVAC by Vector Paradigm

Designed for utility, municipal and contractor customers involved in the installation, maintenance and repair of underground water, sewer, gas, electric and telecommunications lines, the Paradigm subcompact vacuum excavator from TRUVAC by Vector can dig holes with water or air; vacuum, contain and dispose of drill mud; power pneumatic, hydraulic or electrical tools; and provide transport and storage of replacement parts, equipment and tools. The truck's Park-n-Dig design minimizes time between job site arrival and excavation, including the ability to dig up to 6 feet without additional pipe and hose. The air compressor powers utility tools such as jackhammers and tampers. The truck offers tool storage space, including a long-handle toolbox. The truck can tow up to 20,000 pounds.



800-627-3171; www.truvac.com

Vac-Con X-Cavator

The X-Cavator from Vac-Con is designed to be powerful, durable, efficient and easy to operate. It features a hydrostatic drive using the chassis engine for vacuum, eliminating the need for PTO, clutch and gearbox operation. It is available with water systems up to 4,000 psi and a mobile, wireless remote-control system for chassis engine revolutions per minute, boom, automatic vacuum breaker, dump controls and hydraulic door locks from up to a half-mile away. The boom rotates 270 degrees.



904-284-4200; www.vac-con.com

Vacall AllExcavate

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



800-382-8302; www.vacall.com

Inspection Equipment

CUES MPlus+ XL

The CUES MPlus+ XL push system is designed for easy operation with an all-in-one setup and flexibility by quick removal of the control unit to be used separately. It includes a coiler configuration and pan-and-tilt camera for mainline and larger pipeline applications up to 500 feet. It integrates video observation coding, observation coding interface and digital recording. The lightweight system includes large, durable wheels for portability and a balanced footprint for stability. It is manufactured to handle rigorous field use.

800-327-7791; www.cuesinc.com



Envirosight ROVER X

The ROVER X inspection crawler from Envirosight lets an operator control inspections, view and record digital video, log observations, generate reports, and link directly to asset management software. All these capabilities are packed into a simple, three-piece layout, with no CCU or other components to clutter the workspace. Twelve-wheel options — plus camera lift, carriage and illumination accessories — mean it transforms in seconds to inspect any size line. The crawler is six-wheel drive with proportional steering to navigate past obstacles and has overlapping wheels to climb offsets. Powerful motors and a geared six-wheel drivetrain maximize travel range. It is built on an expandable digital backbone, with the ability to add side scanning and laser profiling, view data from onboard sensors, automate tasks with macros and measure defects on screen. Its firmware updates automatically to the latest features.



866-936-8476; www.envirosight.com

Pearpoint (USA) P540c

The Pearpoint (USA) P540c offers an intuitive graphical user interface with built-in user manual, a full-size QWERTY keyboard and a choice of six different languages at launch. Context-sensitive, ATM-style buttons on both sides of the display provide access to the easy-to-use menus while an additional seven buttons offer direct control of the most-used functions. It has the capability to use the newly designed command module with any reel system. This will provide customers the flexibility of having multiple rods for different uses while only needing one command module.



800-688-8094; www.pearpoint.com

Subsite Electronics Private Eye II

The Private Eye II mainline inspection system from Subsite Electronics comes enclosed in a Pelican waterproof and crush-proof case. Weighing just 30 pounds, it provides extreme portability without sacrificing field durability. It is a suitable solution for easements, off-road manholes or any hard-to-get-to location. It is also suited for smaller municipalities or contractors needing the power and capabilities of a full mainline inspection system in a mobile package. It is compatible with all the company's mainline cameras and tractors. When combined with the compact portable reel loaded with single-conductor cable, it can inspect 4- to 200-inch-diameter pipelines up to 1,000 feet in length.



800-767-1974; www.subsite.com

Vivax-Metrotech vCam-6

The vCam-6 HD inspection system from Vivax-Metrotech includes features such as text writer, voice-over, locatable sonde and traceable pushrod as standard equipment. The standard reel is available with 200, 300 or 400 feet of pushrod and choices of 1.3- or 1.8-inch self-leveling HD camera. The system includes a daylight-viewable control module with a 9.7-inch HD LCD monitor, distance counter and internal rechargeable batteries with five-plus hours of battery life. Video recording and JPG-format pictures can be saved to the internal 1 TB hard drive. The control module has built-in Wi-Fi to stream live video and snapshots to smartphone apps or directly to a computer for recording to the hard drive.



800-446-3392; www.vivax-metrotech.com



Slither® Sewer Jetting Hose

tigerflex®



Applications:

- Septic handling
- Liquid and dry chemical & fertilizers
- Construction
- Sewer cleaning, water jetting leader hose

Tiger™ Green/Tiger™ Red/Tiger™ Yellow/Tiger™ Blue

- Superior EPDM compounds - longer life; more durable; superior chemical resistance.
- Superior Flexibility - 22% more flexible! Easier to handle off trucks, especially in cold weather!
- UV and weather resistant exterior.
- Specially designed abrasion-resistant helix – slides over and around objects; easier to handle and work with.

Piranha® Slither® Jetting/Lateral Line Hose

- Ultra Slick polyether-urethane cover design.
- Maneuvers around and through difficult bends.
- Makes lateral line sewer cleaning jobs easier.



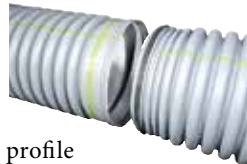
Kuriyama of America, Inc. 360 E State Parkway | Schaumburg, IL 60173
847.755.0360 | fax: 847.885.0996 | email: sales@kuriyama.com | www.kuriyama.com

Pipe - PVC, Polypropylene, Polyethylene

Advanced Drainage Systems HP Storm

HP Storm from Advanced Drainage Systems is a high-performance polypropylene pipe for gravity-flow storm drainage applications. It couples advanced polypropylene resin technology with a dual-wall profile design for performance and durability. The smooth interior wall offers additional strength as well as smooth flow. It has an extended bell that adds an additional factor of safety within each joint. It meets or exceeds typical standards for pipe stiffness and joint integrity, and it meets ASTM F2881 and AASHTO M330 for the respective diameters. It is approved for use by the Army Corps of Engineers, Federal Aviation Administration, and American Railway Engineering and Maintenance-of-Way Association.

800-821-6710; www.ads-pipe.com



Pipeline Rehabilitation/Lining

Applied Felts hybrid liners

Applied Felts hybrid liners combine fiberglass reinforcement with traditional felt liner material to provide strong, robust liners. These hybrid liners perform and install in the same manner as non-reinforced liners with the benefit of reduced thickness, delivering significant resin savings and ensuring a close fit and faster install. AquaCure RP, PS and PW fiberglass-reinforced liners provide strong physical and mechanical properties that meet or exceed ASTM and NSF 61 testing standards. The company's traditional felt liners come in a variety of coating options for polyurethane, polypropylene or polyethylene.

276-656-1904; www.appliedfelts.com



Perma-Liner Industries vertical connection lining system

Perma-Liner Industries' vertical connection pipe lining system offers a way to approach and repair vertical pipelines in residential and commercial markets, making the process easier in less time. The system cures in one hour using a compact, electric steamer or vacuum pump. The system offers uniform thickness throughout. The host pipe does not need to be dry prior to installation, which lessens the installation and cure time. The materials come in kit form, eliminating measuring and waste, and an experienced crew can easily install five or more per day.

866-336-2568; www.perma-liner.com



Picote Solutions Dual-Color Epoxy Brush Coating System

The Dual-Color Epoxy Brush Coating System from Picote Solutions allows technicians to rehabilitate pipes from 1.25 to 12 inches for drains, sewers, water pipes, electrical conduits, and heat and air-conditioning ducts by brush casting a coating. The coating resin forms a pipe inside the original pipe that is a tested, safe and environmentally friendly product. The new pipe is dampproof, corrosion-resistant, wear-resistant and non-corrosive. It is ASTM and NSF certified (NSF/ANSI 61-5). It is a 100% solids epoxy, and the method allows for clear visual verification during the application process. Apply to small areas or all drains in multistory buildings. The system is practical and easily fits in tight places.

219-440-1404; www.picotesolutions.com



(continued)

Pipeline Renewal Technologies SpeedyLight+

SpeedyLight+ from Pipeline Renewal Technologies is an LED-based UV solution for CIPP that cures at speeds ranging from 0.66 to 3.3 feet per minute. Because it's compatible with felt (as well as invertible glass fiber), it can cure 90-degree bends in lines as small as 4 inches, as well as other challenging geometries like transitions and verticals. Free of styrene and amines (and the associated odor), UV-based cure technologies raise fewer objections from the public and a crew. The single-part vinyl ester resin requires no mixing and eliminates shelf life and working time challenges. It uses LED lamps to cure, drawing half the power of traditional UV technology while providing a more powerful cure. The integrated camera lets operators monitor the curing process in real time for optimal quality control. The highly portable design allows for access from even the most remote sites, curing up to 328 feet of liner in pipe 4 to 12 inches. **866-936-8476; www.pipelinert.com**



Reed Pump Stick

The Pump Stick cordless water transfer pump from Reed provides a portable, job site-friendly way to remove water. Applications for the battery-operated liquid transfer pump are numerous. It can be used with the operator's own 18- to 20-volt battery by replacing the battery adapter plate with one designed for common, slide-style batteries. It has a hard shell, aluminum main body shaft; and to protect the impeller, choose from multiple screens, strainers and filters to find the right application. It comes with a 2-foot hose, with 4- and 7-foot hose extensions, plus a hose coupling available. Its long, slim design allows the operator to place the pump deep into small cavities. It can lift water up to 12 feet. A comfort grip handle at the top brings the pump to 4 feet for operational ease. **800-666-3691; www.reedmfgco.com**



Warrior Trenchless Solutions Thermoform

Thermoform from Warrior Trenchless Solutions is a PVC-alloy structural pipe lining system designed for the trenchless rehabili-

tation of failing sewer and culvert pipes. It is an environmentally friendly, styrene-free thermoplastic. There are no harmful emissions, and it does not rely on any chemical reaction during installation. Factory-controlled production with rigorous material testing ensures a consistent quality product that conforms to and exceeds the expected standards. The material is highly flexible, allowing it to expand and fit tightly to the host pipe, including changes in shape and dimensions. It is produced in sizes ranging from 4 to 36 inches in diameter, and the wall thickness can be varied according to the application. All installers must be accredited and audited to ensure the highest-quality work possible. **716-601-7760; www.thermoformliner.com**



Trenchless Pipe Replacement

HammerHead Trenchless WT212-3D

The WT212-3D wet-out table from HammerHead Trenchless has a three-drive roller system and no-shim gap control that combine to deliver highly accurate and uniform resin saturation for quality CIPP installations. The latest CIPP curing methods, such as LED curing, require consistency in resin depth and saturation. The three-drive design of the unit powers rollers to reduce liner wrinkling. The smooth, automated operation delivers uniform wet-outs time after time. In addition, a quick-locking gap mechanism allows users to calibrate gaps between 5 and 15 mm, with more precision than shim-calibrated designs, to eliminate thickness variations in resin. **800-331-6653; www.hammerheadtrenchless.com**



Pow-R Mole Trenchless Solutions Model P1-6RT

The P1-6RT mechanical rod turner from Pow-R Mole Trenchless Solutions integrates with the PD-6 Thrust Boring Machine and P1 Pusher Box to help install sewer pipes on grade and more accurately steer the bore to the target. It eliminates the need for pipe wrenches to turn the rods, making steering safer and more productive. It creates 4,500 ft-lbs of torque, allowing the operator to steer the boring machine up to 200 feet. Quick-disconnect hoses allow for fast and easy removal of the unit. **800-344-6653; www.powrmole.com ▼**



"There are different ways to excavate soil. Most people think you're just spraying water on the ground, but it's a science — there's a right way to do it.

"We're here to stay. We've got a good **reputation**, and that makes me want to work even harder. The guys and I all have something to prove."

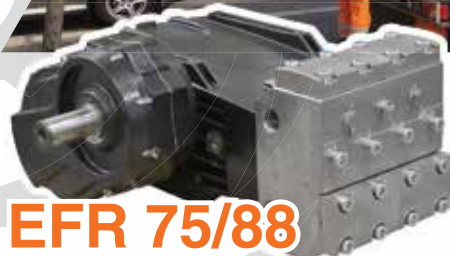
Mike Morehouse, Owner
Davids Hydro Vac
White Bear Lake, Minn.

Read what **matters** to contractors
in every issue of *Dig Different*.



Subscribe for FREE at
digdifferent.com

**THE NEW STANDARD
IN HYDRO EXCAVATING**



EFR 75/88
23.0 GPM | 3,625 PSI



EF 75/88
19.8 GPM | 4,060 PSI

www.CometPump.com

CometPump@CometPump.com

800-864-1649

PROUD SPONSOR



**VIVAX
METROTECH**

Call us to schedule an on-site no obligation demonstration (800) 446-3392

Locate and Inspect - Fast, Easy, and Accurate!

- Create detailed cross bore inspection records
- Internal logging with cloud data analysis
- Real time distortion alerts
- Internal calibration checking



Inspect pipes for cross bores from 2" to 4" up to 150 feet in length with the **vCamMX-2 Inspection Camera System**.



Locate buried utilities, marker balls, sondes and camera systems with the **vLoc3-Pro Receiver and 5-Watt Transmitter**.



Locate gas transmission and distribution lines with **VM-810 Utility Locator**.

Vivax-Metrotech Corporation

3251 Olcott Street, Santa Clara, CA 95054, USA

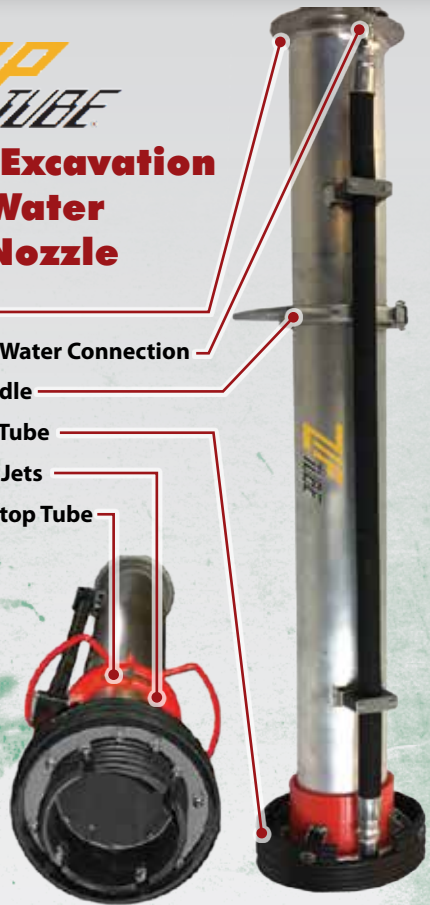
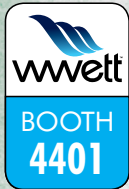
Toll Free: 800-446-3392 | Phone: +1-408-734-1400 | Email: sales@vxmt.com | www.vivax-metrotech.com



**ZIP
TUBE**

**A Hydro Excavation
Suction/Water
Erosion Nozzle**

- 6" or 8" Flange
- 1" F.P.T. Female Water Connection
- Adjustable Handle
- Splatter Safety Tube
- 12 Replaceable Jets
- Rubber Bump Stop Tube



**Kanaflex
180AR**
• Heavy Duty
Abrasion
Resistant
Suction Hose
• Sizes: 2" - 12"

**Kanaflex
KanaVacU**
• Polyurethane
Flexible
Suction Hose
• Dry Materials

**Kanaflex
KanaBoom
Lite**
• Polyurethane
Lined High
Abrasion
Resistant
Wet & Dry
Suction Hose

**TEXCEL
Tex-Comm
(GREEN MONSTER)**
• Heavy Duty
Abrasion
Resistant
Suction Hose
• Sizes: 2" - 12"

Mention this ad for an
exclusive discount!

Success Stories: Pipe Installation, Repair, Inspection and Rehabilitation



BY CRAIG MANDLI



**Trailer-mounted vacuum
fits needs of small community**

PROBLEM

Hydroexcavation in tight spaces is a challenge for large trucks. The city of Carmi (Illinois) Water Department needed a unit that could fit in tight areas to locate waterlines in a small neighborhood. The city knew the waterline location based off of maps and electronic sensors but were unable to hit the pipe when using a probe. A vacuum truck couldn't turn into the neighborhood, and heavy equipment would cause too much damage to private property.

SOLUTION

They chose the **Elastec PACS 2000 trailer-mounted vacuum system**. Workers were able to cut a small hole into the ground, clear roots and expose the waterline in mere minutes. It was discovered that a root as big as the line itself was running parallel to and directly on top of the waterline. This is why it could not be located by probing, and it also meant that using heavy equipment would have been very dangerous to the integrity of the utility.

RESULT

The system immediately saved the team many man-hours on site, heavy-equipment hours and logistics, thousands of dollars in cleanup and remediation, and potentially tens of thousands in utility repair. "We would have spent a minimum of four hours on this site," says Curt Hale of the city of Carmi Water Department. "With the help of this PACS 2000, we were only there about an hour. And that's only because there were a lot of roots around the pipe, which is another issue on a job like this. If you were to use a backhoe to grab the roots and start ripping, it would pull that cast iron pipe out of the ground." 618-382-2525; www.elastec.com ▼

WHAT'S TRENDING IN ALTERNATIVE EXCAVATION?

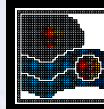
FIND OUT.

Visit digdifferent.com

Dynablast

A DIVISION OF JOHN BROOKS COMPANY LIMITED

Exclusive Canadian Distributor for over 30 Years



Pratissoli
A BRAND OF INTERPUMP GROUP S.p.A.



WATER PUMPS

- Female Spline
- Bell Housing
- 5 - 20 GPM
- up to 5800 PSI
- PA Accessories



HOT WATER HEATERS

- 420,000 to 900,000 BTU
- Steam & Non-Steam
- 12v & 120v
- Schedule 80 Coil
- High Pressure Schedule 160 Coil



UNLOADER VALVES & SAFETY VALVES



HYDROVAC

1-905-867-4642 | www.dynablast.ca



WEQ

WASTEWATER EQUIPMENT FAIR

Nissan Stadium | Nashville, TN

2 DAYS
OF LIVE
EQUIPMENT
DEMOS!



September 29 & 30, 2020 | www.weqfair.com

BROUGHT TO YOU BY:

Pumper Cleaner **PRO** installer MUNICIPAL SEWER WATER tpo I&I Plumber digDIFFERENT

THE LATEST: Products



1. Vanair Start-All Jump Pack portable jump starters

Vanair's Start-All Jump Pack portable jump starters are built to safely deliver fast starts to a wide variety of vehicles. A high-output premium lithium-ion battery provides maximum performance and longevity, while proprietary Protect-All technology enables the Start-All Jump Pack units to safely transfer instantaneous energy to the battery. The models provide safety features for worry-free jump starting, including reverse polarity, low-voltage protection, short circuit overheat protection and overdischarge protection. Integrated heavy-duty cables with large metal clamps for maximum safety and protection are included on all models. **800-526-8817; www.vanair.com**

2. VMAC 6-in-1 multifunction power system

VMAC released its 6-in-1 multifunction power system with a Caterpillar engine, which is now available to Cat dealers and other customers across North America. The VMAC multifunction includes a rotary screw air compressor, generator, welder, battery booster/charger, PTO with optional hydraulic pump and integrated cold-climate kit. It has a C1.1 industrial diesel engine that utilizes lower engine speeds, reducing noise, and is easy to maintain due to single-side servicing. The C1.1 also requires less maintenance and only needs to be serviced every 500 hours. **800-738-8622; www.vmacair.com**

3. Cat Pumps hydroexcavating pumps

For over 50 years, Cat Pumps has been manufacturing long-lasting and low-maintenance triplex pumps. With dedication to zero-defect manufacturing, ease of service and availability from stock, Cat Pumps designs and builds high-pressure pumps and systems to the highest quality standards for the hydroexcavation industry. Popular models include the Model 3560 with 25 gpm, 3,000 psi or 20 gpm, 4,000 psi; Model 3570 with 30 gpm, 3,000 psi; Model 660 with 10 gpm, 3,000 psi; and Model 56 with 5.5 gpm, 3,500 psi or 8 gpm, 2,500 psi. **763-780-5440; www.catpumps.com**

4. McElroy DataLogger 6

The DataLogger 6 from McElroy brings productivity improvements and new features that allow users to document and analyze more of their job sites. These enhancements in Version 1.15 include Optimized Cooling, which reduces the minimum cool time based on a new formula that is compliant with ASTM F2620. The formula includes the ambient temperature, pipe temperature, weather conditions, heat soak time and pipe wall thickness for each joint. In addition, the update includes the ability to capture pressure tests in the field. **918-836-8611; www.mcelroy.com ▼**

This Issue's Feature:

Shaker system keeps hydroexcavator on the job site longer

BY CRAIG MANDLI

In the vacuum excavation industry, finding efficiency means increased profits. The **Vermeer XR2 vacuum excavator** has found one of those efficiencies, as the vacuum excavator comes equipped with a shaker deck that separates liquids and solids, allowing contractors to stay on the job site longer, work efficiently and reduce disposal expenses.

Material excavated with the XR2 is fed through an onboard deceleration tank that exits through an air lock onto a shaker deck, where solids and liquids are then separated. The solid material is moved by conveyor toward the rear of the machine where it is discharged and can be carried away or left on the job site, depending on the material. Used slurry water is pumped into one of the four XR2 holding tanks for disposal. This concept allows contractors to carry 1,500 gallons of water to the job, work longer on the job site and reduce transport weights.

"Soft excavation methods are effective at reducing utility strikes, which have spurred the growth of the vacuum excavator market," says Adam Bates, product manager at Vermeer. "However, DOT truck and trailer weight restrictions can impact the amount of material that crews can transport over the road, and the design of the XR2 helps teams get more hours of production."

The unit is capable of delivering up to 150 minutes of wand time at a rate of 10 gpm. The adjustable pressure wand has a maximum output of



3,000 psi for challenging conditions but can be dialed back when working in sensitive areas. The 6-inch-diameter hose produces up to 3,400 cfm of suction for maximized digging performance. The excavator's 21-foot boom provides 260 degrees of swing, and the unit has a reverse flow feature to dislodge large chunks of material from the hose. All of these functions can be controlled through the unit's fully functional remote.

"The XR2 was developed after listening to contractors talk about the limitations associated with traditional hydroexcavators," Bates says. "Contractors understand the soft excavation advantages of hydroexcavators, but they also felt limited by the production of many units because of weight concerns and water storage capacities."

The XR2 has four 500-gallon liquid storage tanks designed with sloped bottoms, so slurry can be efficiently pumped out before freshwater is replenished. Freshwater and dirty-water tank levels can be viewed anytime from the control station located on the side of the hydroexcavator.

800-837-6337; www.vermeer.com

THE LATEST:

News

AEM Hall of Fame inducts Andringa of Vermeer

The Association of Equipment Manufacturers announced the newest inductee to the AEM Hall of Fame, Mary Andringa of Vermeer. The AEM Hall of Fame recognizes individuals whose innovations, ideas and leadership have advanced the off-road equipment manufacturing industry and contributed to its success in the past and into tomorrow. She is chair of the board at Vermeer after filling roles as CEO, co-CEO, president and chief operating officer. Her level of passion and commitment have made her a voice of change and innovation not only at Vermeer, but in the industry and community.

WWETT Show slated for Indianapolis in February

From Feb. 17 to 20, the Water & Wastewater Equipment, Treatment & Transport Show will take place at the Indiana Convention Center. With new dates for 2020, the four-day trade show has over 100 education sessions and also offers business opportunities, collaboration with industry professionals, a slate of live demonstrations, exposure to cutting-edge technology trends, and the latest product launches across multiple industry segments. ▼

Visit digdifferent.com daily for exclusive news, features and blogs.



Pioneers in vacuum technology
EST- 1981

- » Complete Safety Package
- » Many Options Available
- » Custom Built Vacuum Trucks, Roll-Offs and Hydro Excavators to Meet YOUR needs

Sales@Fast-Vac.com
www.fast-vac.com
21209 Durand Ave., Union Grove, WI 53182
800-558-2280 • 262-878-0756 • f: 262-878-4019

SHORT PRODUCTION TIMES!

How'd you handle that **tough excavation problem?**

Share your story with 26,000+ other professionals.

Send a note to editor@digdifferent.com or call 715-350-8436

SEE WHAT'S INSIDE




digDIFFERENT

News
Stories
Directories
Classifieds
Forums

DigDifferent.com

CLASSIFIEDS

EQUIPMENT & TOOLS



2016 Vac-Con Model IFXP4212M-HE/1300 hydroexcavator on a Freightliner 114SD. 25,000 miles, automatic transmission. Roots 827 blower. 12-yard debris body, 1,300-gallon water tank. 410,000 BTU diesel-fired boiler. 20gpm/4,000psi water system. Rear-mount telescopic boom, wireless remote. \$269,000 No FET

908-203-0999 D02

2011 Vac-Con V390LHA combination cleaning truck. Low miles, great condition. 1998 Vactor 2110-36PD ex-city owned, low miles. See more photos and details of these units at www.empireequip.com. Contact Craig at 714-639-8352. (CBM)

2014 Freightliner 114SD with a VacAll AJV1215; 12-yard debris body, 1,500-gallon water, combination vacuum/jetting unit. (Stock# 052R). www.VacuumSalesInc.com (888) VAC-UNIT (822-8648) (CBM)

2007 Volvo with a Vactor 2115 combination unit. (Stock# 5903C). (888) VAC-UNIT (822-8648); www.vsirentalillc.com (CBM)

Request for bids: Single-engine combination sewer and catch-basin cleaner. The Assistant General Manager of the Brunswick Sewer District (BSD), Brunswick, Maine will receive sealed bids until 2:00 p.m., Monday, February 3, 2020 at the Brunswick Sewer District Office, 10 Pine Tree Road, Brunswick, Maine for the furnishing of a single-engine combination sewer and catch-basin cleaner. Bids will be opened and publicly read aloud at date and time specified. The full RFP can be found here: <https://drive.google.com/open?id=1Vl3uBTdjCNzYpZNC1Syvyb67Xx6Ks7Ad>. (P02)

2013 Western Star vacuum truck. Too much to list, call now! 972-938-1905 (P02)

2012 Freightliner Vactor 2112. Vactor pump. 18" Roots blower. 972-938-1905 (P02)


RENTALS

Liquid vacs, wet/dry industrial vacs, combination jetter/vacs, truck & trailer mounted jetters. All available for daily, weekly, monthly, and yearly rentals. **VSI Rentals, LLC, (888) VAC-UNIT (822-8648) www.vsirentalillc.com** (PBM)

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

wwett20 Visit us at our Booth: 6315

VAN PAK 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

EMCO, Inc.

8" Flat Flange Hose End




Excellent Impact/Abrasion Resistant
For Wet and Dry VAC
Patent Pending

218-428-6927
ggevik@emcotrack.com

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

wwett20 Visit us at our Booth: 6315

WOLVERINE
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

We're Everywhere You Are.



Cleaner.com

Happenings

CALENDAR

- Feb. 10-11**
Horizontal Directional Drilling Academy: Mastering Crossing Applications, Talking Stick Resort, Scottsdale, Arizona. Visit www.hddacademy.com.
- Feb. 17-20**
Water & Wastewater Equipment, Treatment & Transport (WWETT) Show, Indianapolis Convention Center, Indianapolis. Visit www.wwettshow.com.
- Feb. 27-29**
National Utility Contractors Association (NUCA) Annual Convention & Exhibit, Loews Ventana Canyon Resort, Tucson, Arizona. Visit www.nuca.com/convention.
- March 10-14**
CONEXPO-CON/AGG, Las Vegas Convention Center, Las Vegas. Visit www.conexpoconagg.com.
- March 24-26**
Common Ground Alliance (CGA) Excavation Safety Conference & Expo, Palm Springs Convention Center, Palm Springs, California. Visit www.cgaconference.com.
- March 26-28**
Mid-America Trucking Show, Kentucky Expo Center, Louisville, Kentucky. Visit www.truckingshow.com.
- April 5-9**
North American Society for Trenchless Technology (NASTT) No-Dig Show, Colorado Convention Center, Denver. Visit www.nodigshow.com.
- May 15-21**
ITA-AITES General Assembly and World Tunnel Congress (WTC), Kuala Lumpur Convention Centre, Malaysia. Visit www.wtc2020.my.
- May 19-21**
NUCA Washington Summit, Holiday Inn Washington Capitol, Washington, D.C. Visit www.nuca.com/summit.
- May 31-June 3**
Electric Utility Fleet Managers Conference (EUFMC), Williamsburg Lodge and Conference Center, Williamsburg, Virginia. Visit www.eufmc.com.

Dig Different welcomes your contributions to our Happenings column. To recognize members of your team, please send notices of new hires, promotions, service milestones, certifications or achievements. We also invite your national, state or local associations and organizations to post notices, news items and learning opportunities. Send contributions to editor@digdifferent.com. ▼

DOWN & DIRTY

What's Your Story?

Dig Different welcomes news about your tough excavation, pipe bursting, trenching, boring or tunneling job for the Down & Dirty column.

editor@digdifferent.com | 715-350-8436

BETTER BY DESIGN



281-884-8658
LA PORTE, TX



888-442-7829
JOHNSTOWN, PA

QUALITY. POWER. PERFORMANCE.

YOUR #1 CHOICE MANUFACTURER OF COMBO JETVACS • HYDRO VACS
AIR MOVERS • JETTERS • RECYCLE JETVACS • SKID MOUNT VAC UNITS

GAPVAX.COM

MWEA
JOINT EXPO & OPERATORS DAY
FEB 4 & 5, 2020
LOOK FOR MTECH!

wwett20
NEW SPOT BOOTH 1661
PLUS WWETT LIVE WITH NOZZTEQ
FEBRUARY 17-20, 2020

PARTSEXPRESS
FULL PARTS & ACCESSORY
DEPARTMENT
TO MEET YOUR NEEDS

#BESTTRUCKSINTHEBUSINESS

EFFICIENT ON THE JOB. AND YOUR WALLET.



 **Ditch Witch®**

VISIT US AT WWETT
**BOOTH
#4443**



The Ditch Witch® HX30G is the ideal, economical vac for expanding your business and still meeting your bottom line. The outstanding suction and water pressure, plus an innovative low-profile design lets you take on more jobs.

Learn more at ditchwitch.com