

digDIFFERENT

Think outside the bucket

Paul Pomerleau
Operator
Ted Berry Company

NORTHEAST EXPERTISE

Hydroexcavation education
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and keeping business 22

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Ted Berry Company operator Paul Pomerleau uses the digging wand of a Vactor 2100 to hydroexcavate to a natural gas pipeline on a job site in Augusta, Maine. Ted Berry Company, located in Livermore, Maine, has seen an increase in hydroexcavation services with the natural gas pipeline boom taking place in the Northeast. The company also performs other underground construction services such as pipe bursting. (Photography by Jessica Woodcock)

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AS AN OPERATOR OF THESE MACHINES, IT'S UP TO YOU TO TELL CUSTOMERS ABOUT THE BENEFITS AND EVEN ENCOURAGE OTHER CONTRACTORS WHO INSIST ON USING ONLY BUCKET EXCAVATORS TO AT LEAST HIRE A HYDRO OR AIR EXCAVATOR (PREFERABLY YOURS) TO EXPOSE UTILITIES.

Taking the Education to Your Customers

YOU CAN HELP THE INDUSTRY CONTINUE TO GROW BY SHOWING AND TELLING THE BENEFITS OF DIGGING WITH AIR AND WATER

BY CORY DELLENBACH, EDITOR

I'd like to think the hydroexcavation and air excavation industry in the U.S. is starting to move out of its infancy and into its toddler stage. While the industry is still young and trying to pick up steam and hurdles need to be cleared, more people know about it today than 20 years ago.

One of the industry's biggest hurdles is education: Many contractors and potential customers still don't know the capabilities of hydro and air excavation machines.

Contractors are still digging in deep with the bucket excavators and hitting natural gas and waterlines and putting workers and the general public at risk. Customers think doing anything other than bucket excavation is more expensive, although often that isn't the case. It's time to start spreading the word about the virtues of this industry.

YOU ARE THE EDUCATORS

Hydro and air excavation contractors are safely exposing utilities before other forms of excavation begin. Many contractors use the machines for all their digging needs now.

As an operator of these machines, it's up to you to tell customers about the benefits and even encourage other contractors who insist on using only bucket excavators to at least hire a hydro or air excavator (preferably yours) to expose utilities.

Ted Berry Company, featured this month, took a proactive approach to educating its customers about the technology, how it works and what it can do for a contractor's profit margin.

"Once we were able to educate and show people what can be done, what could be done, and how to apply that to different scenarios, that's when we really started to see the return from a customer standpoint," says Matt Timberlake, president of the company, based in Livermore, Maine.

Easy ways to display the machines' capabilities include showing videos or pictures of work your company has done, taking them to a job site to see for themselves, or even doing a demonstration. The payoff could be huge for your company.

EDUCATION FOR YOU TOO

While it's important to educate customers, it's also important for you and your employees to stay educated

on the industry. There are emerging technologies that could help your business become more profitable.

The Safety First feature in this issue focuses on the communication your crew members might need while working a job site. It can be loud at jobs with trucks operating and traffic flowing. We tell you about wireless headsets that allow workers to communicate freely without having to press buttons — keeping their hands free for the job.

Then, if you turn to the Tech Perspective feature, we share what manufacturers say you should look for when selecting the right nozzle for your machine. Different nozzles allow you to work efficiently in soil conditions from sandy to clay.

Finally, writer Kyle Rogers, in our Machine Shop feature, gives you tips on maintaining the debris tanks and booms on your trucks to keep them operating at a high standard.

CONNECTING WITH THE INDUSTRY

In our In the Trenches column, Barry Wood, CEO of Ontario Excavac near Toronto, talks about a new organization that launched in 2014 in Ontario geared toward hydroexcavators. It's a way for contractors in that area to stay connected about what is happening in the industry and what they can do to help.

There are other ways to stay connected, too — visiting the forums on our website, for example. Each week we post new discussions on the home page at www.digdifferent.com and invite you to join those conversations.

Also, I'd like to hear from you on what your company does to help educate customers about the benefits of this industry. You can email me at editor@digdifferent.com or call me at 800/257-7222. I look forward to hearing from you.

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FIGURING OUT WHAT TO CHARGE

The Art of Pricing

When running your own business, one of the toughest things to determine is what to charge for your services. Minnesota contractor Mike Morehouse says there are several different things a contractor needs to look at to figure out pricing. digdifferent.com/featured

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AN UNCONVENTIONAL APPROACH

ALBERTA'S DR HYDROVAC USES SPARKLING TRUCKS TO BRING IN POTENTIAL EMPLOYEES AND BUSINESS, AND IT KEEPS BUSINESS BOOMING

STORY: KEN WYSOCKY PHOTOS: MIKE RIDEWOOD

From clean trucks to hiring practices to diversification, Dwaine Ruckman likes to take a less conventional approach to business — a strategy that's working just fine for his hydroexcavation company, DR Hydrovac, based in Strathmore, Alberta.

"It's just the way we roll," says Ruckman of the strategies he uses to differentiate his company in the marketplace. "Doing things differently is a niche we've chosen to pursue. I'm not sure I can quantify how it's helped us grow our business, but it definitely hasn't hurt."

Running sparkling-clean hydroexcavating trucks is one of the company's most visible differentiation tactics. "We roll down the road pretty shiny," Ruckman says. "Cleanliness is one of our big things, along with safety, equipment maintenance and proper training. Sure, it's a very dirty business, but you have to be professional.

"Customers comment about our trucks all the time," he continues. "It's such a simple thing, but it creates callbacks (repeat business) from customers. We clean our trucks every day — there's a pressure washer on each truck, so how much does it take to give it a quick spray? Absolutely nothing.



The DR Hydrovac team at the headquarters in Strathmore, Alberta, includes, from left, Gordie Jenkins, Corey Hanna, Thomas Stahl, Cody Helfrich, Dwaine Ruckman, Lucas Ford, Kyle Doucette and Shane Maser.

"IT'S JUST THE WAY WE ROLL. DOING THINGS DIFFERENTLY IS A NICHE WE'VE CHOSEN TO PURSUE. I'M NOT SURE I CAN QUANTIFY HOW IT'S HELPED US GROW OUR BUSINESS, BUT IT DEFINITELY HASN'T HURT."

Dwaine Ruckman

"People may laugh at us for this, but every one of my guys is proud of their truck," he adds. "I always tell prospective employees that we're like a fire department: If we're not out working and our truck maintenance is up to date, we're out polishing the trucks."

Clean vehicles also serve another purpose: They're job recruiting tools. In an industry where good employees are difficult to find, Ruckman says he often gets calls from operators working at other companies, asking if there are job openings at DR Hydrovac. "We rarely have to hunt for new employees because they come looking for us," he explains. "They want to drive a clean truck, too."

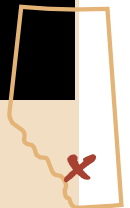
Hiring practices mark another area where the company zigs while other firms zag. While some contractors prefer to hire operators with a minimum level of hydroexcavating experience —10 years, for example — Ruckman prefers to hire good drivers with four or five years of road experience who he can train to be good hydroexcavators.

"I prefer to hire guys without bad truck-operating habits. We prefer to mentor our own guys," he says. "We don't want guys coming in and telling us how to operate our trucks."

New hires spend at least a month in a truck's passenger seat as a swamper (an assistant to the truck operator). That way the company is always developing a pool of assistant operators who not only know how to operate a hydroexcavation truck the DR Hydrovac way, but are also familiar with the company's business practices. "The system has served us well," Ruckman says.

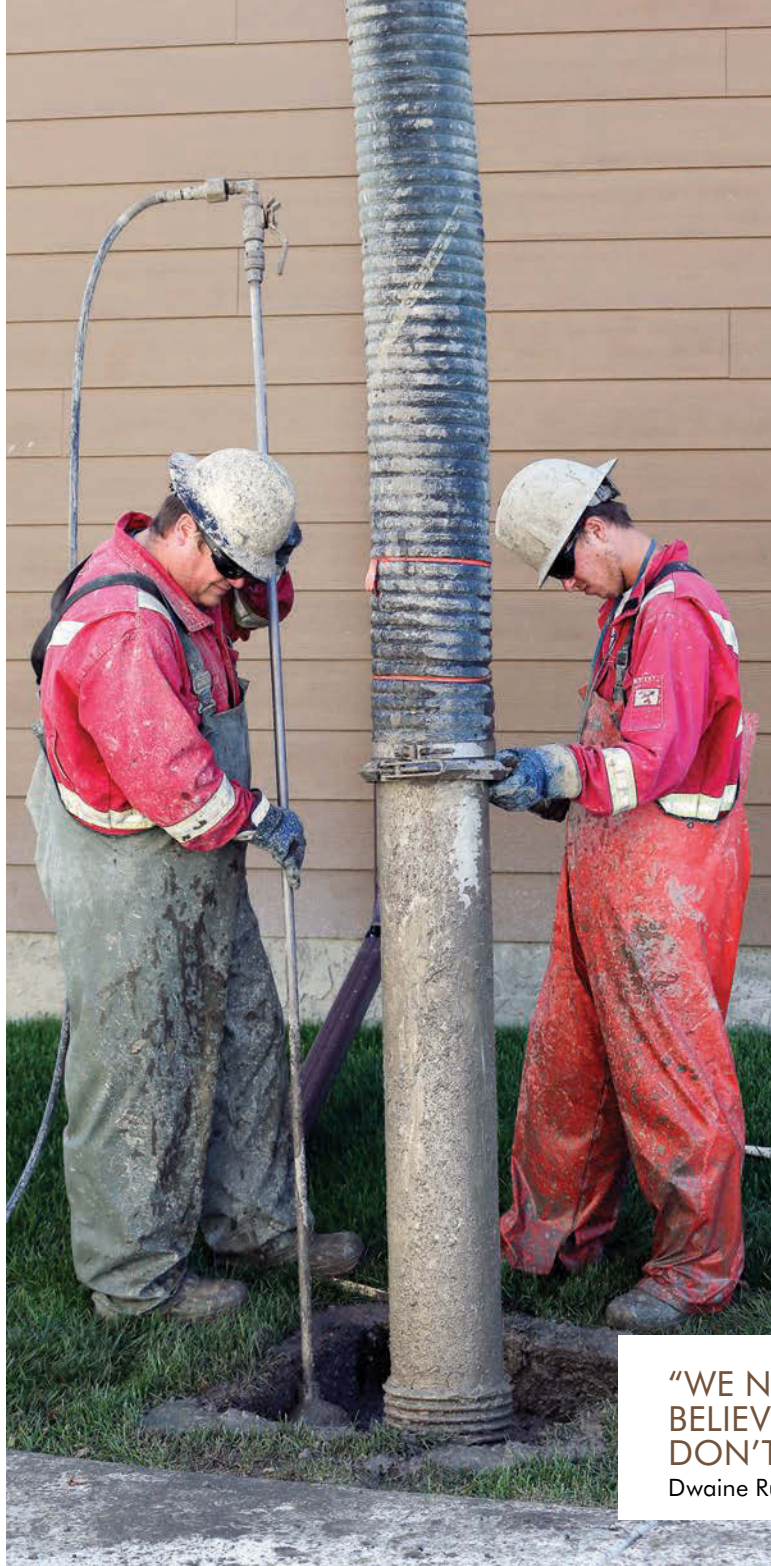
DR Hydrovac Ltd., Strathmore, Alberta

OWNER: Dwaine Ruckman
FOUNDED: 1999
EMPLOYEES: 10
SPECIALTIES: Hydroexcavating, primarily for oilfield pipeline projects
SERVICE AREA: 150-mile radius around Strathmore in southern Alberta
WEBSITE: www.drhydrovac.com



OIL-PATCH ORIGINS

Ruckman does not mind taking risks. In 1996, for example, he quit a job as a dispatcher for a local trucking company and went to work in the Alberta oilfields with no experience other than as a truck driver, lured by the promise of better pay. In 1999, after driving a vacuum truck for three years, his employer offered him a half-ownership of a vacuum truck that Ruckman would operate as a lease operator, a common arrangement in the trucking industry.



DR Hydrovac crew members Corey Hanna (left) and Thomas Stahl expose utility lines on a job site in Calgary.

“They supply the work and you do it and give the owner a percentage of what you make,” he explains. “When a fellow works hard and puts in time for a guy, at some point he (the employer) can’t offer more pay and perks, so you’ve got to offer him a piece of the action or he’ll go to work for someone else.” But in 2001, as business slowed, Ruckman struck off on his own, bolstered by the experience and reputation he’d built.

To avoid competing with his prior employer in the oilfield-services sector working on service rigs, Ruckman decided to focus instead on servicing drilling rigs. From there, he slowly diversified into other related services as market opportunities arose, such as delivering water and hauling contaminated soil. The diversification was helpful in softening the industry’s cyclical ups and



Dwaine Ruckman, owner and operator of DR Hydrovac. The company has 10 employees and primarily handles hydroexcavation projects for pipeline companies serving the Alberta region.

“WE NEVER REALLY GREW CRAZY FAST. I’M A BIG BELIEVER THAT SLOW AND STEADY WINS THE RACE — DON’T TRY TO DO TOO MUCH.”

Dwaine Ruckman

downs, he notes. “When one thing slows down, hopefully other things keep you busy,” he says.

But around 2003, Ruckman again bucked conventional wisdom and decided it was time to focus on one service instead of trying to be more diversified. The core reason? “I felt we could offer our customers a better product,” he explains. “I was worried that by offering many services, we’d end up being good at a bunch of things, rather than being great at one thing.

“It also boils down to the fact that all the industries are different,” he explains. “From a management standpoint, it made more sense (to retrench) because it’s tougher to manage three different types of work, all with different employees. Plus the drilling industry requires you to live on the rigs for three to five weeks at a time, and it’s harder to find employees who are willing to live that way. With hydroexcavating, our employees can come home at night and be with their families.”

So Ruckman decided to focus exclusively on providing hydroexcavating services for oil companies installing new infrastructure, primarily pipelines

that tied together wells and storage facilities. Most of the work involves exposing existing infrastructure, he says, to pave the way for tying in new pipelines. By 2006, business was good enough to justify investing in a second hydroexcavation truck. Today, the company owns four Tornado F4 Slope trucks, made by Petrofield Industries (a division of Empire Iron Works).

“We’re not a rags-to-riches story by any means,” Ruckman points out. “We’ve grown steadily. We never really grew crazy fast. I’m a big believer that slow and steady wins the race — don’t try to do too much. That way you can maintain reasonable cash flow and not put yourself too much in debt. And when you grow too fast, your level of service may not be where it should be because you have too much happening at once.”

CUSTOMER SERVICE COUNTS

Providing service that goes above and beyond customer expectations has been key to the company’s growth. The business has earned a good reputation for solving problems; in fact, Ruckman says many customers call the company Doctor Hydrovac (a play on the initials in the company name). “But we believe DR stands for ‘done right,’” he says.

A can-do attitude that embraces problem-solving also keeps the phone ringing, he notes. “We’re always willing to adapt and we’re not afraid to try new things,” Ruckman says, noting that the company recently completed a job that required tunneling under a utility vault for 30 feet. “We don’t want to be that guy where the minute a job sounds a little out of the norm, he says, ‘Sorry we’re busy,’” he notes. “We take those jobs head-on. If you’re not learning something new every day, you’re really not moving ahead. Sometimes you’ve got to be a little ingenious and forward-thinking.”

As for the company’s future, Ruckman envisions more slow and steady growth coupled with a focus on cost-effective operations and productivity-enhancing investments. A good case in point is the company’s recent construction of a 6,000-square-foot office and shop that includes four service bays and — of course — one wash bay. The company had been renting a cramped 4,000-square-foot facility, Ruckman says. *(continued)*



DR Hydrovac owns four Tornado F4 Slope hydroexcavators.

Tornado hydrovac trucks put new spin on dumping debris

When Dwaine Ruckman, owner of DR Hydrovac in Strathmore, Alberta, got into the hydroexcavating business in 2003, he wanted a truck that would be as safe as it was durable and productive. He found just what he was looking for in the Tornado F4 Slope, built by Petrofield Industries (a division of Empire Iron Works).

The truck includes an unconventional debris tank design; it sits at a slight angle atop part of the water tank, which creates a floor that slopes toward the truck’s rear. This enables efficient debris dumping with a hydraulic sweep. Moreover, overhead obstructions don’t come into play because an operator doesn’t raise the tank to empty it, Ruckman says. “There’s less hydraulics on board and no subframe for a hoist, so the truck is lighter, too,” he points out.

DR Hydrovac owns four Tornados built on chassis made by Peterbilt Motors (model years 2013 through 2015). Each truck features a 5,400 cfm blower, made by either Roots Systems (Howden Roots) or Hibon; a triplex water pump (25 gpm/3,000 psi) made by Cat Pumps; a 10-yard debris tank; a 2,000-gallon water tank; a 26-foot-long extendable boom with a 342-degree coverage radius; a 740,000 Btu boiler (to heat water used to excavate frozen soil); an Eaton Fuller transmission; and a 23-foot-deep digging capacity.

The large debris and water tanks increase productivity by minimizing trips for water refills and dumping debris. Moreover, the four trucks also include three drive axles in the rear, rather than two, which allows the units to legally carry more

weight without violating highway weight regulations. “They also give us more traction on soft ground and less compaction,” Ruckman adds. “In our line of work, you can end up working on some pretty soft ground. We sometimes work on pipelines that cross private farmland right-of-ways, so they’re looking for less disturbance.”

Ruckman says he specs blowers that will generate enough power to get jobs done; anything more is just overkill. “Bigger blowers equal more weight, and engines have to work harder to operate them so you use more fuel,” he explains. “At the end of the day, is that better? You can’t charge customers any more money just because you have a bigger blower (than what’s generally needed), so we’d rather spend less on fuel. However, if I come across something that requires a bigger blower, we’re not afraid to mount one on. If I see a market for something, we’ll build it and make it go.”

The company aims to sell its hydrovac trucks after four to five years, while they still hold good resale value. Because the company sometimes sells used trucks to companies in the United States, the value of the American dollar versus the Canadian dollar can factor into the timing, too. “Sometimes we sell a truck just because it helps us buy the next one,” Ruckman notes.

But no matter when the company decides to sell a truck, it always gets top dollar. Why? A comprehensive maintenance program. “When we’re not running the trucks, we’re checking them over front to back to make sure they’re running right,” Ruckman says.

Crew member Mark Wurz cleans the vacuum hose after clearing a water main. DR Hydrovac owner Dwaine Ruckman requires trucks to be cleaned daily, as he feels it helps draw in business and new employees.



“CLEANLINESS IS ONE OF OUR BIG THINGS, ALONG WITH SAFETY, EQUIPMENT MAINTENANCE AND PROPER TRAINING. SURE, IT’S A VERY DIRTY BUSINESS, BUT YOU HAVE TO BE PROFESSIONAL.”

Dwaine Ruckman

The building also does double duty as a marketing tool, thanks to its location just off the Trans-Canada Highway. Moreover, a water-fill station located inside the building saves the company time and money, he points out.

“Before, we bought water from water treatment plants and filled up at overhead bulk water-fill stations,” Ruckman explains. “That took maybe a half-hour of travel and 15 minutes of loading time. Now we can load a truck in five minutes with our high-pressure system. This does not decrease our water costs, but with one less stop for our drivers during the day, they get home to their families quicker. And with less time spent on the job, we lower payroll expenses, too.”

Doing things differently — that’s just how DR Hydrovac rolls. ▼



Mark Wurz (left) and Gordie Jenkins clear a water main in Irricana, Alberta, with the long reach of one of the company’s Tornado F4 Slope hydroexcavators.

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Fight for the Industry

ONTARIO ALLIANCE WORKING WITH GOVERNMENT ENTITIES TO SUPPORT HYDROEXCAVATION OPERATORS IN THE PROVINCE

BY BARRY WOOD

Significant investments in all types of infrastructure have seen a multitude of projects across our province, and the hydroexcavation industry has been at the forefront of this work.

Hydroexcavation is a safe, cost-effective, reliable, all-seasons means of excavation to build, maintain or perform repairs on buried infrastructure. Ontario's utility companies, transit operators, road authorities, municipalities and the Government of Ontario itself have come to rely upon this technology for its many merits.

The HydroVac Alliance of Ontario (HVAO), in operation since July 2014, has over 40 member companies, representing over half of the hydroexcavators in operation in Ontario as well as manufacturers and dealers. We are a group of industry members, large and small, coming together to share best practices and, most critically, to speak as a group on issues of common interest.

THE FOCUS

From the outset, the focus of HVAO's work has been to ensure that the government of Ontario's policies, as they pertain to hydroexcavators, are informed by industry expertise. The need to do so was, and remains, urgent. In its 2014 budget, the Ontario government announced a plan to make changes to the Highway Traffic Act to modernize the treatment of road building machines. Hydroexcavators as well as mobile cranes, concrete pumpers and others will be affected by Ontario's plan to make changes in this area.

The government's plan carries the risk of potentially significant operating cost increases for both hydroexcavator operators and the industry's stakeholders. The government's budget proposal means new licensing requirements, increased fuel costs and potentially a range of operating restrictions. The impact on our businesses and our customers could be severe.

In summer 2014, we had seven founding members and a significant challenge facing us in the form of the government's budget initiative. With planning and a significant time and monetary commitment by our executive members, a good deal has changed since then. Membership has grown: HVAO now has more than 40 firms, including 11 executive committee members. Just as critically, we have established the HVAO as the responsible voice of the hydrovac industry.

OUTREACH CAMPAIGN

HVAO embarked on a comprehensive outreach campaign to the Ontario Ministry of Transportation (MTO) as well as a number of other government ministries that would be impacted by the traffic act changes affecting the use of hydroexcavators in the province. Our goal is to ensure that any government policy changes affecting hydroexcavators recognize the unique attributes of the machines and the important role they play. Policy changes may happen from time to time, but we believe these changes must be fully informed.

The relationship we have sought to develop with government reflects the values we have as an organization — namely that HVAO member companies are responsible businesses that share a commitment to safety and to the communities in which we work. We have not sought to be contrary or confrontational but instead have engaged in constructive and informed conversation.

In this context, while it is not our first choice, we have recognized and accepted that increased registration fees and fuel costs are likely in our future. At the same time, we have argued strongly that other possible changes the government is considering will produce unnecessary costs and interfere with the maintenance and building of infrastructure.



Barry Wood

WE ARE A GROUP OF INDUSTRY MEMBERS, LARGE AND SMALL, COMING TOGETHER TO SHARE BEST PRACTICES AND, MOST CRITICALLY, TO SPEAK AS A GROUP ON ISSUES OF COMMON INTEREST.

PLAN FOR THE FUTURE

To its credit, the government appears to be listening. In August 2015, it deferred implementation of its 2014 budget measure by one year to January 2017 to allow more time for further consultations with industry.

That time is needed because there remains many issues to work out. How those issues are resolved will affect HVAO member companies and our customers. The treatment of existing hydroexcavators is one example of the remaining issues. Hydroexcavators operating today in Ontario were acquired under existing rules. Those rules allowed the design, length, width and capacity of our existing machines to vary. That rule may go away with these new rules.

More fundamentally, we continue to be concerned about the operating regime in the future. Hydroexcavators are, according to independent statistics, the safest method of excavation around vulnerable underground infrastructure. It is in nobody's interest to see the cost of hydroexcavation services increase to the point that other, less safe forms of excavation are used.

We are entering a critical phase of consultations with the MTO regarding the traffic act changes affecting our industry. We have a degree of confidence that other ministries are aware of the adverse consequences of poorly conceived changes. The HVAO has crafted what we consider to be fair and reasonable positions across many issues. The HVAO will work diligently to make the case for these positions.

The HVAO requires ongoing support in this crucial phase from the hydroexcavation sector and other affected stakeholders in order to achieve the sought after win-win outcomes. Please help us by joining the HVAO today!

ABOUT THE AUTHOR

Barry Wood, the CEO of Ontario Excavac, is the chair of the HydroVac Alliance of Ontario. He can be reached at 416/749-0005 or bwood@excavac.ca. For more information on HVAO, go to www.hvaontario.com. ▼



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Finding the Right Tools

MANUFACTURERS OFFER MANY NICHE NOZZLES FOR CONTRACTORS TO CHOOSE FROM, DEPENDING ON THE JOB

BY MARYBETH MATZEK

When looking at what nozzle attachments to go with, a hydroexcavation or air excavation contractor has many choices, and none of them are easy ones. Contractors need to take into account what will work with their equipment and soil conditions, for example.

As technology advances and operators get more precise about what they are looking for, manufacturers are responding with a broad array of products, says Jim Zylstra, sales and marketing manager for Ring-O-Matic, which released its new nozzle, the Viper, in 2015.

“Nozzles keep advancing to be more specialized to meet customers’ needs,” he says.

The Viper combines the power of water to excavate a hole with a vacuum that pulls the debris out of the hole. “It takes what was once a two-man job and makes it a one-man job since you only need one person, instead of one doing excavating and one doing the vacuuming of the debris,” Zylstra says. “It’s a cleaner method and safer since there’s no debris flying around.”

KEEPING DEBRIS OUT

Keeping debris out of the nozzle is an important factor in many nozzles on the market. Water Cannon modified its turbo nozzle with a spring that keeps tension against the top of the nozzle and keeps dirt from getting in.

“What really kills nozzles so they don’t have a long life is that the dirt gets in there,” says Mark Williams, Water Cannon’s national sales and product manager. “The new nozzle can be used in all kinds of soil, which is important.”

SEVERAL OPTIONS AVAILABLE

When picking nozzles, operators have a lot to consider, including how many gallons per minute they plan to push through the nozzle and the machine’s pressure, Williams says. “If you know that, we can figure out the size of nozzle that you will need,” he says.

NozzTeq uses orbital rotation on the inside of its nozzles to clean out holes. “We’ve made it so our nozzles are rebuildable and last longer,” says Scott Paquet, president and CEO. “We can replace the rotor on the inside that does all the work and it can then last three to 12 months, depending on how often it’s used and what it’s used for.”

As the nozzle works, it circles around and gets faster, creating a cone shape that clears the dirt out of the way, Paquet adds. “As technology advances, the nozzles work faster, allowing operators to get their work done more quickly,” he says.

Fifteen years ago, Belinda Bain and her company, California Hazardous Services, were on a job site having difficulty digging using available hydroexcavation tools. She and her crew went back to the shop and fabricated a water ring with six jets boring inward to cut the soil and six jets boring outward to get the tube



“AS TECHNOLOGY ADVANCES, THE NOZZLES WORK FASTER, ALLOWING OPERATORS TO GET THEIR WORK DONE MORE QUICKLY.”

Scott Paquet

down. The new tool bore down 10 feet in one minute and the crew completed the job. The Soil Surgeon was born.

CHANGES STILL COMING

While the Soil Surgeon has remained relatively the same since Bain first invented it, she recently developed another model, the Soil Surgeon Model X2. Once again, the idea came from a tough job — working on storm drains near the ocean. Bain redesigned the Soil Surgeon’s water ring with the tips now boring upward, outward and downward to clean the entire drain by just inserting the tool and maneuvering it up and down.

“These new storm drains have screens in them that get caked with dirt and sludge,” Bain says. “The traditional way of cleaning them is very tough as the space is very small. ... With the Model X2, you drop it into the bottom of the drain and vacuum out all of the debris that you have cleaned off walls and the filter.”

Zylstra says his company did a lot of research into current nozzles on the market as well as customers’ needs as it developed the Viper. Zylstra says its nozzle has long durability since it’s made with stainless steel and carbide.

“Operators need to consider so many factors with picking a nozzle, such as the depth of the hole needed, the soil type and durability,” he says. “Getting the answers to those questions will help with the selection.” ▼

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Paul Pomerleau, an operator with Ted Berry Company, uses a Vactor 2100 hydroexcavator and its digging wand to excavate to a natural gas pipeline for inspection in Augusta, Maine.

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NORTHEAST EXPERTISE

TED BERRY COMPANY BRINGS HYDROEXCAVATION TO NEW ENGLAND'S RAPID EXPANSION OF BURIED NATURAL GAS SYSTEMS

STORY: PAUL NICOLAUS PHOTOS: JESSICA WOODCOCK

Ted Berry Company's foray into hydroexcavation came about by sheer necessity. Called into an industrial facility in a support role roughly 20 years ago, the web of utilities wound around the one that needed repairs was so extensive that it just couldn't be physically excavated.

"We ended up using a vacuum truck," says Matt Timberlake, president of the Livermore, Maine-based company. "To some extent, it even surprised us."

At the time, the technology was in place for it to be used in this manner, but it just wasn't a common method. "That's kind of the mother of most inventions is figuring out how to use the same thing to do something different," he adds. "Vacuum trucks have been around a long time. This was just a different way to use it."

Since then, the path leading even deeper into the field of hydroexcavation has been long, winding and filled with plenty of hurdles. Many of the challenges have wound up boiling down to education, Timberlake says, pointing out that the lack of general awareness and then the slow, gradual acceptance of these newer methods presented the largest obstacles along the way.

"Typically, people didn't know the technology existed, and even if they did know it existed they surely didn't understand the capabilities," he explains. "Once we were able to educate and show people what can be done, what could be done, and how to apply that to different scenarios, that's when we really started to see the return from a customer standpoint."

"TYPICALLY, PEOPLE DIDN'T KNOW THE TECHNOLOGY EXISTED, AND EVEN IF THEY DID ... THEY SURELY DIDN'T UNDERSTAND THE CAPABILITIES."

Matt Timberlake

DAMAGE PREVENTION

In recent years, the expansion of natural gas production in the Northeast region, which has grown rapidly in the company's home state of Maine, has provided significant work. While in general this has been a positive dynamic that is lowering energy costs and creating plenty of construction jobs, Timberlake says it has also presented some new dilemmas.



Matt Timberlake replaced his father as president of Ted Berry Company in 2015. His grandfather founded the company in the 1970s.

The rapid rise in construction can lead to a number of risks. There is always the potential to damage other utilities such as water, sewer, storm, power and cable lines, and some utilities are just plain difficult to locate; sewer laterals are often constructed of materials that can't be easily traced such as clays or plastics. Being able to go through and safely install small-diameter gas mains along the edge of a public right-of-way without posing any immediate or long-term risk to the public is a very real issue.

To tackle these difficulties, Ted Berry Company has worked hand in hand with a number of contractors, municipalities and gas utilities to develop a comprehensive damage prevention program. "Damage prevention is continuing to be more of a focus in the underground industry," he says. "In order to

Vacuum versatility

Matt Timberlake is a firm believer that no single piece of equipment will make or break you, and that everything depends upon people and their ability and commitment. Even so, he does acknowledge that Ted Berry Company's 2008 Vactor 2115 combination sewer cleaner/hydroexcavator is something special.

It rises to the top among an impressive list of company-owned equipment that includes seven vacuum trucks (five Vactor Combos, one Guzzler Classic and one Super Products), five mainline CCTV trucks (four Aries and one CUES), about 50 service trucks, a fleet of about 20 large-diameter hydraulic pumps ranging from 6 to 12 inches, two pipe bursting teams that are set up with static and pneumatic equipment ranging in size from 2 to 36 inches, and a Reline America UV CIPP system.

Although this is just one of many vacuum trucks owned by the company, it is versatile enough to allow multiple revenue streams to be generated by just one crew. The truck is a 15-cubic-yard combination Vactor with typical jetting configuration of 100 gpm at 2,500 psi with a multi-flow system. It also has a PD blower with an 8-inch Vactor suction boom.

To add additional capabilities to the truck, there was a full hydroexcavation package installed. The auxiliary high-pressure pump, high-pressure reel, and boiler — coupled with standard Vactor features — make this truck a critical component in a diverse fleet of service equipment, according to Timberlake.

"It's kind of the Cadillac option," he says. "It's got all the bells and whistles. Without that we can't inspect pipe, and without that we can't rehab pipe. It is kind of the foundation; the company is really built around it."

The truck is used on a combination of large-diameter sewer flushing projects and vacuum excavation projects for power utility companies, natural gas distribution companies and general contractors installing new gas lines. Beyond that, it's put to use when water and wastewater utilities call Ted Berry Company in for digging around broken or damaged mains during emergencies.


truly have a damage prevention program, you have to know where the utilities are, you have to know what they are, you have to know the sizes, the types, the depths, and what's in them.

"Unfortunately, there are very few parts of the country where you can walk out onto any given street and all of the other utility owners in that area know exactly where their pipes are, exactly how deep they are and exactly what size they are," he adds. "Oftentimes what they'll do is paint a blue or yellow or red mark on the ground and say, 'We've got pipes down there somewhere.'"

From Timberlake's vantage point, the result is that a lot of money goes down the drain. "The money spent in utility management in the United States is just absolutely wasted," he says, explaining that every time a backhoe shows up to fix a sewer lateral and hits a gas main or every time a sewer main is damaged while repairing a water main, there are valuable resources used to repair the damage done. "If a utility spends \$100,000 a year on repairing damaged utilities that are struck during excavation, that's \$100,000 that could have been spent putting in new utilities or upgrading or rehabilitating."

VITAL WORK


With vacuum excavation, there's an ability to be much more efficient in terms of identifying where utilities are and getting their depths and sizes and types. Oftentimes that can be done before a project begins and the heavy exca-



Paul Pomerleau sits roadside in Augusta, Maine, performing hydroexcavation work with the company's Vactor 2100 machine.

"ONCE WE WERE ABLE TO EDUCATE AND SHOW PEOPLE **WHAT CAN BE DONE, WHAT COULD BE DONE, AND HOW TO APPLY THAT** TO DIFFERENT SCENARIOS, THAT'S WHEN WE REALLY STARTED TO SEE THE RETURN FROM A CUSTOMER STANDPOINT."

Matt Timberlake



Ted Berry Company operators Matt Bronish and Matt Therriault work inside a pipe bursting pit in Saco, Maine, with a McElroy 618 HDPE pipe fusion machine. The company is bursting existing 15-inch pipe with new 16-inch HDPE.

“SO FOR US TO BE ABLE TO TAKE A VACUUM TRUCK AND SAY THAT **WE ARE HELPING PREVENT CATASTROPHIC EVENTS AND INJURIES AND LOSS OF LIFE** — I NEVER WOULD HAVE THOUGHT 20 YEARS AGO THAT OUR WORK WOULD HAVE HAD THAT TYPE OF SIGNIFICANCE.”

Matt Timberlake

vation work starts. By accurately locating, documenting condition, mapping and exposing buried utilities, construction can take place with reduced risk to both on-site workers and the general public.

“Oftentimes there’s only so much real estate underground where a sewer line, a waterline and a gas line can all fit,” Timberlake explains. “Once we identify where those lateral crossings are, we can then use the hydroexcavation equipment, vacuum down, expose the sewer lateral, and then have the directional drillers coming by at that point confirm that they have cleared it and have adequate separation required for the area. Then once they’re by, that very small keyhole can be backfilled.”

Taking place throughout Maine over the course of the last three years — and still ongoing — Timberlake says that in terms of both size and importance, this natural gas work is the most significant vacuum excavation job the company has ever been involved in because the results can be catastrophic if the work is not carried out carefully and effectively.

If a gas main blows up, there can be significant property damage and personal injury, and the loss of life is not uncommon. “So for us to be able to take a vacuum truck and say that we are helping prevent catastrophic events and injuries and loss of life — I never would have thought 20 years ago that our work would have had that type of significance,” he adds.

RELATED SERVICES

Ted Berry Company offers an array of underground construction services that tie into hydroexcavation as well. “We do a tremendous amount of pipe bursting,” Timberlake says, noting that they’ve been handling this type of work for 15 years. Last fall when the company took on the pipe bursting of a

municipal water main in an extremely congested city street, they had to contend with about 30 critical utilities that surrounded the 3,000 feet of pipe.

After identifying where the pipe was located and where those other 30 utilities intersected, they cut 24- by 24-inch sections out of the asphalt, vacuumed down, and exposed the utility they were going to burst along with the other utilities. They were able to measure the sizes and separation and see what type of pipe it was. They were also able to determine that there were eight utilities in a close enough proximity that there was a risk of damaging them.

“Because we identified them and because we knew what the separations were, we were able to modify our burst plan, we were able to leave those exposed while we burst through or under that adjacent area, and by removing the soil there’s no soil to expand,” Timberlake says. “In turn we took the risk, we identified it, and we used a vacuum truck to make it go away.”

In order to remain up to date with new and evolving industry trends such as this rapid growth of natural-gas-related construction work, Timberlake says training is crucial. There’s been such a significant expansion of the buried natural gas system that somebody who was proficient at working in an area five years ago may not have had a wealth of experience working around natural gas. “Now because those natural gas systems have come in and grown and expanded, they have to have a different level of proficiency than they did five years ago,” he says.

Ted Berry Company has an internal training and mentoring program that begins with the use of the vacuum excavation equipment, including two hydro-

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“OFTENTIMES THERE’S ONLY SO MUCH REAL ESTATE UNDERGROUND WHERE A SEWER LINE, A WATERLINE AND A GAS LINE CAN ALL FIT.”

Matt Timberlake

excavation trucks and two CCTV units that have mainline to lateral launching capabilities. “So it starts with understanding and being competent in operating the equipment,” Timberlake says. “However, that in and of itself is not enough. They then have to be proficient in underground utility construction and best practices.”

Although much of the training is handled internally, he says Dig Safe — a not-for-profit clearinghouse that notifies participating utility companies of plans to dig — has an arm called M.U.S.T. (Managing Underground Safety Training) with a coalition throughout New England that conducts annual best practices training. “That M.U.S.T. training in the Northeast has proven to be very good because it pulls together utility owners, contractors, utility locators and regulators with a goal of working on damage prevention,” he says.

FUTURE OUTLOOK

When he considers the biggest advantages of hydroexcavation, Timberlake says there are several that rise to the top of the list. “In terms of prioritized benefits, efficiency is probably the biggest one,” Timberlake says. “Because most people make their decisions based on money, you’ve got to start with efficiency. We can perform the same work faster.”

From his perspective, the ability to better manage the primary risks associated with excavation is also crucial. “Those primary risks are hitting another utility and doing damage to it, and the risk of people being injured in a trench,” he says. “Those are the greatest risks to any excavation company anywhere on the planet, and if what we can do is manage out that risk of striking another utility by using a non-mechanical method, we have not entirely eliminated that risk but we have substantially reduced the possibility of damaging another utility.”

Health and safety is another key benefit. Most best practices and regulatory agencies require a tolerance zone around a pipe where it must be hand excavated, Timberlake explains, and in New England that tolerance zone is 18 inches. Within 18 inches of a pipe, it has to be hand excavated, which means you have employees in a trench, in a ditch, and while they’re physically moving that material away from the pipe, that’s where the greatest risk presents itself. He mentions a recent death as the result of a broken water main as a case in point.

“With a vacuum truck we can do all that work from above ground with a remote control in a controlled setting,” he says. “Once the pipe is exposed and isolated, then the employees enter a safer trench, typically a drier trench, and they’re going to be in it for a shorter amount of time.”

As the industry’s equipment continues to evolve, Timberlake says it’s worth keeping an eye on the accessories such as pipes, tubes and wash nozzles. “I think where a lot of the improvements are going to be is in the accessories because to some extent figuring out how to build a vacuum truck has kind of already been done,” he says. “They’ll always continue to improve them, but a lot of it is the usability of it and building in new widgets that improve efficiency and safety.

“One of the biggest things we look at now with nozzles, for example, is if we can use a highly efficient nozzle that allows us to do the same amount of work in less time and burn less fuel, then spending the extra money to buy that efficient nozzle all of a sudden becomes worth it.”

Beyond the equipment, Timberlake remains excited to see the continued acceptance of hydroexcavation used as part of a standard of practice. Years ago it may have been viewed as a niche, he says, but not anymore. “That’s really when you know something has value,” he adds. “If it truly has value, it will grow in acceptance, and it will grow in value.” ▼



Operator Eric Gemelli operates the HammerHead HB100 static pipe bursting system to lower bursting rods into a pit. Looking on are operator Matt Bronish (in pit) and company president Matt Timberlake.

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WATER MAIN REPAIR IN STOW, OHIO

The Utility Pipe Finders crew served as a sub-contractor on a water main replacement project in Stow, Ohio, throughout August 2015. Company President Connor Orban says what was supposed to be a three-day job turned into a three-week job after the city and the primary contractor, HM Miller Construction, learned what the company's Premier CV-series hydroexcavators were capable of doing. Crews were initially hired to vacuum drilling mud from HM Miller's directional drill installing the new lines, but Utility Pipe Finders was soon asked to excavate for utility locations near where the waterline work was taking place. Orban notes that the difficult part of the job was the soil conditions where crews were faced with digging through rocky conditions at times. "We learned to use different types of high-pressure jet nozzles to move the rock a lot easier." For more on this project, go to www.digdifferent.com/featured. ▼



Let us show off your project!

Send photos of a current project (hydroexcavation, trenching, tunneling, directional drilling, utility locating, pipe bursting or similar nontraditional excavation) showing your equipment and crew on site.

Include name, company name, mailing address, phone number and details (what you are doing, equipment used, time expected on the project and anything difficult or unique about it). Email to editor@digdifferent.com or mail to Editor, Dig Different, P.O. Box 220, Three Lakes, WI 54562. We look forward to hearing from you.

A Clearer Way to Communicate

HEADSETS BOOST JOB SITE SAFETY AND PRODUCTIVITY WHILE KEEPING HANDS FREE FOR WORK

BY MARYBETH MATZEK

Communication on a construction work site is vital to not only getting the job done, but getting it done safely. With construction sites known for being loud places, talking with other co-workers isn't easy, so more companies are looking to wireless headsets as a solution.

Technology advances make headsets easier to use than ever before, says Matt Cannell, director of marketing for Sonetics Wireless Headsets. Sonetics uses a proprietary DECT7 wireless technology in its headsets, providing users



"WE KEEP FOLKS IN CLEAR COMMUNICATION AT ALL TIMES, LOWER THE LOUD NOISES, REMOVE THE NEED FOR SHOUTING AND THE JOB ENVIRONMENT SUDDENLY GETS MORE CALM, MORE PRODUCTIVE AND MORE ENJOYABLE."

Matt Cannell

with clear audio that is full duplex, which means workers can talk to each other as if they were on a conference call.

"There's no buttons to push, just put on the headsets and talk to each other," he says, adding that the headsets pair to a wireless base station. Each station has five headsets, and users can have five separate channels on the base so they can have secure conversations as needed. "It's completely secure and encrypted so users can trust that they won't be picking up frequencies from other technologies and they won't be overheard on someone else's channel."

A VITAL TOOL

Cannell says work site communication is vital for both safety and worker productivity.

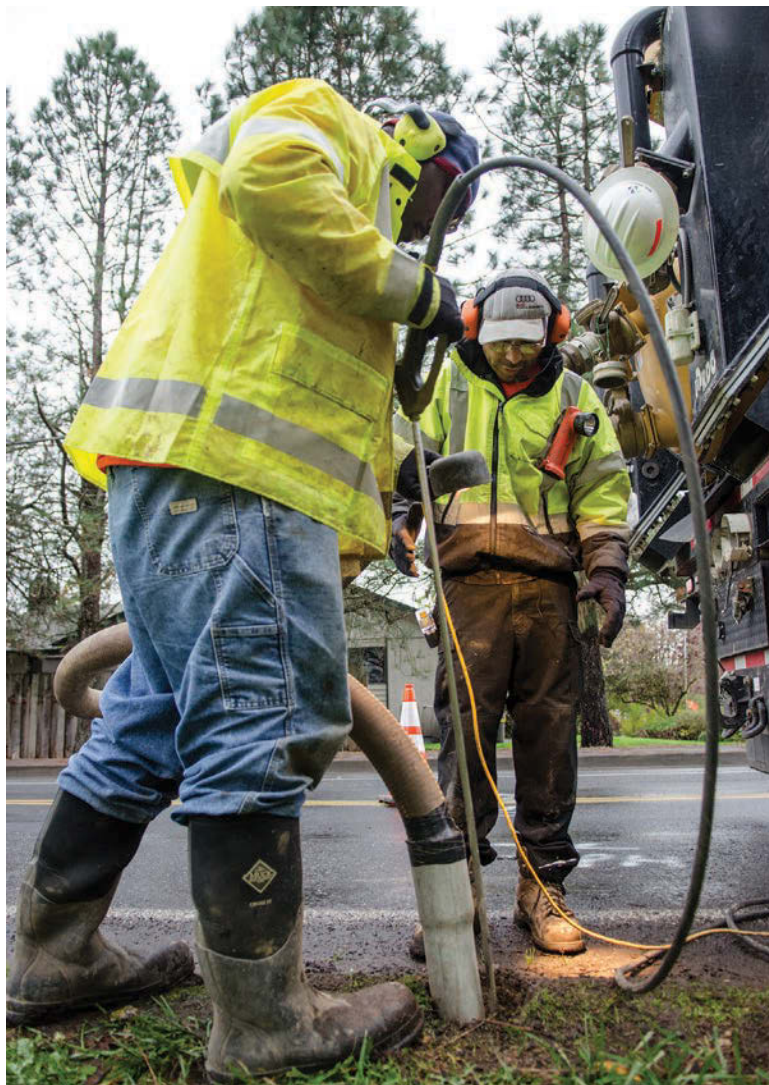
"The No. 1 factor for on-the-job accidents is communication breakdown. When you've got multiple bodies on a job site and heavy equipment or operations that require precision and attention, a user can't afford to miss hearing instructions, signals or warnings," he says. "But when instructions are missed, not only are risks increased, productivity goes down because either you have to stop what you're doing to make sure the crew hears you over the equipment, or mistakes are made and you have to correct operations, resulting in duplicate efforts and slips in schedules."

Before headsets were common on construction sites, most crews used hand signals or shouting to communicate with each other. Those methods weren't the most reliable and instructions weren't always clearly interpreted, which is a huge issue if individuals need to react quickly in a safety situation, Cannell says.

"Another big benefit is stress relief. When crews are shouting or trying to interpret hand signals, if things don't happen quite as intended, the stress goes up," he says. "When the 'all-stop' is called, when the headsets are on, everyone hears it. This sometimes can be a matter of seconds to react or someone could get injured or even killed."

Operators using vacuum excavators communicate with wireless headsets (Sonetics). The headsets allow workers at construction sites to communicate easily and keep their hands free.

Headsets not only help improve communication, they can also protect workers' ears from construction site noise. The many pieces of construction equipment on job sites com-



PHOTOS COURTESY OF SONETICS



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“WHEN YOU’VE GOT MULTIPLE BODIES ON A JOB SITE AND HEAVY EQUIPMENT OR OPERATIONS THAT REQUIRE PRECISION AND ATTENTION, A USER CAN’T AFFORD TO MISS HEARING INSTRUCTIONS, SIGNALS OR WARNINGS.”

Matt Cannell

“If users need to hear equipment warnings, signals or even traffic, they are not cut off from their surroundings. This is critical for users who deal with traffic or highly dynamic environments where situational awareness cannot be sacrificed,” he says.

Loud noises can also be stressful on the body, and by lowering the sound levels, Cannell says it makes the work site less hectic.

“We keep folks in clear communication at all times, lower the loud noises, remove the need for shouting and the job environment suddenly gets more calm, more productive and more enjoyable,” he says.

ADDED MOBILITY

Wireless headsets are also replacing another construction site staple — two-way radios. Cannell says the headsets allow workers to talk and work at the same time.

bine to create significant noise volume levels, which over time can lead to hearing loss.

DIFFERENT LEVELS OF NOISE SUPPRESSION

Sonetics’ headsets include 20 dBA of hearing protection and automated noise suppression, which means if an employee is standing next to a loud piece of equipment, the noise will be canceled out and the user will just hear what other members of the crew are saying. The headsets also include listen-through technology, which allows users to let in the right amount of environmental noise, Cannell says.

“A lot of guys and gals depend on two-way radios on the job site, but the challenge is either they can’t hear the radio when it’s clipped to their vest, or when they do hear it, they have to push a button to communicate back,” he says. “That’s tough when your hands are tied trying to work or operate equipment. The headsets have no buttons to push, no interruptions.”

That last piece is essential because if two workers push the button on a two-way radio to communicate at the same time, they can lock out the channel.

“That means nothing gets communicated, and if that’s when there’s an all-stop, it can be a real challenge,” Cannell says.

EXPANDING OPTIONS

Workers can also integrate their portable radios with their headsets or add Bluetooth technology so they can connect to cellphones or listen to music while working. The headset works just like any Bluetooth device — as a call comes in, the user is prompted and can push a button to take the call. During the call, the worker is locked out of the wireless conversation so it’s kept private, Cannell says.

“When the call is done, they push that same button again and hang up the phone and they’re back live in the conversation with the headsets,” he says.

The standard Sonetics headset works for 24 hours and can be charged from zero percent to full strength in just four hours.

When it comes to the headsets’ range, they typically work up to 1,600 feet, Cannell says.

“If users need more range or want to integrate their portable radios, they can plug those in to the com hub or headset and push-to-talk over the radio. This gives users who need more range an easy way to go further,” he says.

For workers who just want a personal headset and don’t need or want a mic boom for talking, there is a style available that provides the high level of hearing protection with the listen-through technology, Cannell says. ▼

Whom Should You Trust With Your Money?

WHEN IT COMES TO MANAGING YOUR RETIREMENT FUNDS, KNOW THE DIFFERENCE BETWEEN A FEE-ONLY FINANCIAL PLANNER AND A COMMISSION BROKER

BY ERIK GUNN

Your business is growing, and you're earning enough money to set aside and begin building some wealth.

Sticking it in your mattress is just an old cliché, banks don't pay much interest, and while the broker down the street may help point you to a great stock pick, that's still just a piecemeal approach to managing your money for the long term.

So when it comes to gaining the big-picture perspective, where do you turn for advice? If you're hiring a professional to help you protect and grow your personal wealth, you have a couple of basic choices.

Many people simply turn for investment advice to that same (successful, we hope) broker, buying or selling stocks or other securities based on that person's recommendations. The broker might even offer a big-picture approach, helping choose investments that are more secure as you age, so the downside risk to your nest egg declines as retirement nears.

There's no doubt that many such professionals try to do their best to make fair and thoughtful decisions for their clients. And since they're paid largely on commission with each trade or within mutual fund charges, it's easy to feel like their service is practically free. It's not, of course. Commissions themselves amount to something, however small. But there are bigger reasons to consider an alternative approach: the fee-only financial planner.

IF YOU'RE HIRING A PROFESSIONAL TO HELP YOU PROTECT AND GROW YOUR PERSONAL WEALTH, YOU HAVE A COUPLE OF BASIC CHOICES.

PAID FOR TIME, NOT FOR TRADES

The term means just what it says. Fee-only planners get paid *not* for buying or selling investments on your behalf, but for reviewing your financial assets and goals and making recommendations accordingly. Those recommendations are based on their knowledge of the investment markets and their understanding of your particular circumstances.

Yet how they're paid just scratches the surface when it comes to really understanding the difference, says Michael Haubrich, financial advisor based in southeastern Wisconsin and member of the National Association of Personal Financial Advisors (NAPFA.org).

"The bigger distinction is not the compensation, but what it really is, is the person you're dealing with acting as a fiduciary?" Haubrich points out. To put it in plain English — is the professional required under the law to act in the client's best interest?

The traditional stockbroker is governed by the federal Securities Exchange Act passed in 1934. That law requires the broker to fully inform clients about the "suitability" of an investment, including pointing out the risk that any particular investment might wind up becoming worthless.

A separate law passed in 1940 sets a higher standard for *registered investment advisors*, a group that includes fee-only planners; they are obliged to tai-



lor their advice to the client's best interest. Simply disclosing risk and advising investors to consider the suitability of a particular investment isn't enough.

"We do a deep dive into what the client's objectives are and what their risk tolerance is," explains Haubrich, whose business is Financial Service Group Inc. "We can be held liable if we can't demonstrate that the advice we give is in the best interest of the client."

Based on information collected from the client, a fee-only planner might recommend a particular stock, but she or he won't get paid differently based on whether the client decides to follow through on the recommendation. As a consequence, the planner has no incentive to push any particular investment.

METHODS OF PAYMENT

Of course, the planner gets paid in some way — and typically up-front, so their services cost more at the outset. Some planner fees are structured on the basis of hourly charges or through a system of retainers that cover a certain amount of service before they must be renewed — just as business lawyers typically are.

Most planners, though, set their fees on the basis of a percentage tied to the total value of the assets managed for the client. A 2013 survey by the trade publication *Investment News* found that fees go down as the assets under management go up; for \$100,000 to \$500,000 in assets, expect to pay about 1.5 per-

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cent per year; people with \$5 million under management paid on average less than 1 percent per year.

That brings up another wrinkle in the ever-evolving investment advisor world, Haubrich notes.

Many brokerage houses, recognizing the concerns people may have about the objectivity of advice coming directly from a securities dealer, are establishing separate arms staffed by advisors paid ostensibly solely on the basis of a percentage charged against the assets they're managing, like fee-only planners.

He points out, however, that those advisors often get some form of additional commission relating to investments that are conducted through their employers, distinguishing them from the true fee-only planner.

"From the consumer's point of view, they all look the same," Haubrich observes. "They all wear suits, they all wear ties." But when it comes to the way they're actually paid — and the incentives that might influence their advice — "that is not a subtle difference."

Wall Street, he notes, has been lobbying heavily to derail proposed federal Labor Department regulations affecting businesses marketing investment platforms for company 401(k) defined contribution pension plans. The feds are arguing those firms should be held to the fiduciary standard — serving participants according to their best interests — rather than the less strict disclosure and suitability standard; the industry behind those plans, of course, would prefer a less strict standard.

THE BIGGER PICTURE

Finally, fee-only planners do a lot more than simply tell you what stocks or bonds to buy or sell.

Indeed, as more and more average people are getting comfortable with discount, do-it-yourself brokerage services, and as even more complex financial advice is starting to become automated in the form of online calculators that help people begin to understand the big picture of their own financial condition, some fee-only planners are offering a more comprehensive approach.

Haubrich, for example, views himself these days as helping clients with "life transitions."

"We're financial life planners," he says. "We really focus on the client's life, where they want to go and what they want to do in their life. Then we align their resources, not only their financial resources but their career assets, to make sure there's good alignment to help them get through whatever life transitions they're in now."

That can include not just giving advice about investments but connecting clients with other sources of guidance such as work and career counselors and other kinds of advisors.

Such broadly based advice may be a lot more than you're looking for, of course.

Still, if you're in the fortunate position to have assets in need of management, it behooves you to think carefully about what sort of advice you want and how you want to pay for it.

ABOUT THE AUTHOR

Erik Gunn is a magazine writer and editor in Racine, Wisconsin. ▼

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MANUFACTURERS DIRECTORY 2016



MANUFACTURER	MODEL NAME	Style	Debris Body Capacity (cu. yards)	Debris Door (dimensions)	Debris Door (dump angle)	Water Tank Capacity (gallons)
 Ditch Witch 1959 W. Fir Ave., Perry, OK 73077 tf: 800-654-6481 f: 580-336-3458 www.ditchwitch.com info@ditchwitch.com See ad page 60	FX20	Trailer	0.75		45 deg	80 gal
	FX25	Trailer	2.5		45 deg	80 or 200 gal
	FX30	Trailer	2.5 or 4		45 deg	80, 200 or 300 gal
	FX50	Trailer	2.5, 4, or 6		45 deg	200, 300, or 500 gal
	FX65	Trailer	2.5, 4, or 6		45 deg	200, 300, or 500 gal
	MV800	Trailer	4		45 deg	100 gal
	FXT30	Truck	2.5 or 4		45 deg	200 or 400 gal
	FXT50	Truck	2.5 or 4		45 deg	200 or 400 gal
	FXT65	Truck	2.5 or 4		45 deg	200 or 400 gal
See ad page 59 GapVax Inc. Contact: Kate Blair 575 Central Ave., Johnstown, PA 15902 814-535-6766 tf: 888-4GAPVAX f: 814-539-3617 www.gapvax.com kdoyka@gapvax.com	HydroVax	Chassis	12 1/2 or 15	70" w/full open door	50 degree	400-1,200
 Hi-Vac Corporation Contact: Marty Bolde 117 Industry Rd., Marietta, OH 45750 p: 740-374-2306 tf: 800-752-2400 f: 740-374-5447 www.x-vac.com sales@hi-vac.com	X-6	Chassis	6	67"	90 degree	500
	X-12	Chassis	12	67"	90 degree	1,140
	X-15	Chassis	15	67"	90 degree	1,425
 LMT Inc. Contact: Mike Fenneman 1105 SE 2nd St., Galva, IL 61434 p: 309-932-3311 tf: 800-545-0174 f: 877-471-2564 www.vaxteel.com info@vaxteel.com See ad page 33	Smart-Dig HX-4000	Chassis	6	60"	90 degree	400
 Premier Contact: Warren Lindgren 2550 East Bijou Ave., Fort Morgan, CO 80701 p: 970-542-1975 www.poequipment.com sales@poequip.com See ad page 27	CV Series	Chassis	13	36" x 48"	25 degree floor	1,600 - 2,400
	Urban X	Chassis	6	24" x 27"	47 degree floor	600
 Presvac Systems Contact: David Siphkema 4131 Morris Drive, Burlington, ON L7L 5L5, Canada p: 905-637-2353 tf: 800-387-7763 f: 905-681-0411 www.presvac.com sales@presvac.com	Presvac Hydro-Excavator	Chassis	14.5	78"	80 degree	1,200

	Standard Water Pump (gpm & psi)	Standard Blower (hg & cfm)	Filtration Type	Boom Size	Degree of Rotation	Offloading Type	Controls Location	Wireless Y/N	Accessories Available	Other
	2.6 gpm, 3000 psi	543 cfm	washable polyester	N/A		tank mounted at angle for gravity dump	curbside	N		
	4.0 gpm, 3000 psi	543 cfm	washable polyester	14 ft.	270	full open rear door and tank lift	curbside	Y		
	4.2 gpm, 3000 psi	500 cfm	washable polyester	14 ft.	270	full open rear door and tank lift	curbside	Y		
	5.1 gpm, 3000 psi	1027 cfm	washable polyester	14 ft.	270	full open rear door and tank lift	curbside	Y		
	5.5 gpm, 3000 psi	1215 cfm	washable polyester	14 ft.	270	full open rear door and tank lift	curbside	Y		
	4.0 gpm, 3000 psi	543 cfm	washable polyester	N/A		full open rear door and tank lift	curbside	N		
	4.2 gpm, 3000 psi	500 cfm	washable polyester	14 ft.	270	full open rear door and tank lift	curbside	Y		
	5.1 gpm, 3000 psi	1020 cfm	washable polyester	14 ft.	270	full open rear door and tank lift	curbside	Y		
	5.5 gpm, 3000 psi	1215 cfm	washable polyester	14 ft.	270	full open rear door and tank lift	curbside	Y		
	5-40 gpm 3,000 psi	28" hg 5,250 cfm	wet/dry single mode	25 ft. reach from center	270	dump, sludge pump, auger or pressure off	driver's side & curb side	Y	winterization lighting tool boxes racks cabinets	lift axles, tube or hose trays, tube storage, automatic transmission, water heater (boilers), heated pump enclosures
	12 gpm 3,000 psi	16" hg 2,100 cfm	cyclone and inlet filter	6 ft.	270	45 degree dump	right side	Y	winterization lighting tool boxes racks cabinets	
	18 gpm 3,000 psi	27" hg 5,250 cfm	dual cyclones and inlet filter	8 ft.	270	45 degree dump	right side	Y		
	18 gpm 3,000 psi	27" hg 5,250 cfm	dual cyclones and inlet filter	8 ft.	270	45 degree dump	right side	Y		
	7 gpm 3,000 psi	14" hg 1,300 cfm	4 x PTFE coated, pleated, washable filters	16 ft. hydraulic 25 degree up & down	270	gravity	passenger side	Y	winterization lighting tool boxes racks cabinets	400,000 BTU AquaBlast hot water system
	20 gpm 3,000 psi	28" hg 6,200 cfm	3 stage	8"	340	fixed, end dump, mechanical assist	rear, curb side	Y	winterization lighting tool boxes cabinets	extreme weather packages, 700k BTU boiler, trash pump, towing packages, steam packages, dual digging packages, rear steps, custom dump door porting, extended van bodies
	10 gpm 3,000 psi	28" hg 2,400 cfm	4 stage	5" or 6"	270	fixed, end dump, vibrator assist	mid rear, curb side	Y	winterization lighting tool boxes cabinets	Sullair air compressor dual setting 200 cfm 120/200 psi, 500w inverter, 380k BTU boiler, all hydraulic drive, simultaneous operation of all systems, legal when loaded, optional active scale systems available, short wheel base
	18 gpm 100-3,500 psi	27" hg 5,300 cfm	dual cyclone & 10 micron final filter	8" hose x 23 ft.	270	optional pressure off-load	curbside	Y	winterization lighting tool boxes racks cabinets	optional code construction (DOT 412 / TC 412) stainless steel 316 debris tank

(continued)

Hydroexcavation

MANUFACTURERS DIRECTORY 2016

MANUFACTURER	MODEL NAME	Style	Debris Body Capacity (cu. yards)	Debris Door (dimensions)	Debris Door (dump angle)	Water Tank Capacity (gallons)
Ring-O-Matic Contact: Jim Zylstra 1714 Fifield Road, Pella, IA 50219 tf: 800-544-2518 p: 641-628-1515 www.ring-o-matic.com jzylstra@ring-o-matic.com	275 VacEx	Trailer	1.2	45 degree		100
	550 HiCFM VacEx	Chassis & Trailer	2.7	45 degree		2 x 100 gal.
	850 HiCFM VacEx	Chassis & Trailer	4	45 degree		2 x 250 gal.
	1300 HiCFM VacEx	Chassis	6.4			2 x 250 gal.
 SchellVac Equipment Inc. Contact: Alexander Scheller 126 Wheatfield Rd., Winnipeg, MB R3C 2E6, Canada p: 204-336-0081 tf: 877-336-0081 f: 204-336-0090 www.schellvacequipment.com alex@schellvacequipment.com <i>See ad page 5</i>	SchellVac 2600	Chassis	15	Full opening rear door out-fitted with heavy-duty hydraulic locks		1,200
 Mud Dog HYDRO EXCAVATORS Super Products LLC Contact: Chris Kay 17000 W. Cleveland Ave., New Berlin, WI 53151 tf: 800-837-9711 p: 262-784-7100 f: 262-784-9561 www.superproductsllc.com info@superproductsllc.com	Mud Dog 1600	Chassis	16	full round tilt & eject unloading		2,000
	Mud Dog 1200	Chassis	12	full round tilt & eject unloading		1,500
 Transway Systems Inc. Contact: Gary Robinson 314 Lake Ave. N., Hamikton, ON L8E 3A2, Canada p: 905-578-1000 tf: 800-263-4508 f: 905-561-9176 www.transwaysystems.com gary@transwaysystems.com <i>See ad page 17</i>	Transway Terra-Vex	Chassis	15	full open door	40 degree	1,200
 VAC-CON <i>See ad page 7</i> Vac-Con Inc. Contact: Stephanie Lee 969 Hall Park Rd., Green Cove Springs, FL 32043 p: 904-284-4200 www.vac-con.com vns@vac-con.com	X-Cavator	Chassis	3, 5, 9, 11, 12, 14, 16	optional hi-dump	60 degree	1,300
 VACTOR <i>See ad page 11</i> Vector Manufacturing Contact: Ben Schmitt 1621 S. Illinois St., Streator, IL 61364 p: 815-672-3171 tf: 800-627-3171 f: 815-672-2779 www.vactor.com sales@vactor.com	Vector HXX Prodigy	Chassis	6		50 degree	1,300
	Vector HXX Hydro Excavator	Chassis	12		50 degree	1,200


	Standard Water Pump (gpm & psi)	Standard Blower (hg & cfm)	Filtration Type	Boom Size	Degree of Rotation	Offloading Type	Controls Location	Wireless Y/N	Accessories Available	Other
	6.0 gpm 4,000 psi	15 hg 600 cfm	cyclo-separator with 5 micron bag type with 7,200 sq in capacity			pressure or gravity	front curbside		winterization lighting cabinets	optional patented Viper cyclo-jet pothole excavator Related Model: VL 271
	6.0 gpm 4,000 psi	15 hg 1,000 cfm	cyclo-separator with 5 micron bag type with 11,800 sq in cap.	15 ft.	300	pressure or gravity	front curbside		winterization lighting cabinets	optional patented Viper cyclo-jet pothole excavator. Related Models: 550 VacEx and VL 550
	6.0 gpm 4,000 psi	15 hg 1,000 cfm	cyclo-separator with 5 micron bag type with 11,800 sq in cap.	15 ft.	300	pressure or gravity	curbside		winterization lighting cabinets	optional patented Viper cyclo-jet pothole excavator. Related Models: 850 VacEx and VL 850
	6.0 gpm 4,000 psi	15 hg 1,000 cfm	cyclo-separator with 5 micron bag type with 11,800 sq in cap.	15 ft.	300	pressure or gravity			winterization lighting cabinets	optional patented Viper cyclo-jet pothole excavator. Related Models: 1300 VacEx and VL 1300
	20 gpm 3,500 psi	28" hg 6,400 cfm	heavy-duty dual cyclone system plus cartridge final filter	telescopic 8" boom 26' reach	320 20 down tilt 55 up tilt	hoisted tank with vibrator	curbside	Y	winterization lighting tool boxes racks	up to 9,000 BTU boiler
	18 gpm 3,000 psi	28" hg 5,800 cfm	centrifugal separator & pleated final filter	27 ft. fully extended	335	tilt body & ejector plate	passenger side	Y	winterization lighting tool boxes racks cabinets	
	18 gpm 3,000 psi	28" hg 5,800 cfm	centrifugal separator & pleated final filter	27 ft. fully extended	335	tilt body & ejector plate	passenger side	Y		
	10 gpm 6,000 psi	27" hg 6,400 cfm	cyclone	8" x 26 ft.	320		curb side	Y	winterization lighting tool boxes racks cabinets	walk-in heated acoustical enclosure
	10 gpm 4,000 psi optional 20 gpm 4,000 psi	3 stage fan or PD blower	hurricane separator	6 or 10 ft. front or rear mount telescopic boom w/optional Power Flex	270	hydraulic opening rear door with 60 degree dump angle	curb side operator's station	Y	winterization lighting tool boxes racks cabinets	
	10 gpm 2,500 psi	16" hg 3,200 cfm		6 ft. top mount	320		curb side	Y	winterization lighting tool boxes racks cabinets	
	10 gpm 2,500 psi	28" hg 5,250 cfm		7 ft. hydraulic extendable top mount	320		curb side	Y	winterization lighting tool boxes racks cabinets	

(continued)

Hydroexcavation MANUFACTURERS DIRECTORY 2016

MANUFACTURER	MODEL NAME	Style	Debris Body Capacity (cu. yards)	Debris Door (dimensions)	Debris Door (dump angle)	Water Tank Capacity (gallons)
Vac-Tron Equipment LLC Contact: Cori Walsh 27137 South Hwy 33, Okahumpka, FL 34762 p: 352-728-2222 tf: 1-888-VAC-TRON www.vactron.com cori@vactron.com <i>See ad page 41</i>	HTV PTO 573	Chassis	2.5	48"	60 degree	300
	HTV PTO 873	Chassis	4	48"	60 degree	300
	LP 573 / 873 SGT	Trailer	2.5 / 4	48"		200
	LP 573 / 873 XDT	Trailer	2.5 / 4	48"		200 / 300
	LP 573 / 873 SDT	Trailer	2.5 / 4	48"		200
	AIR 573 / 873 SDT	Trailer	2.5 / 4	48"		200

Air Excavation MANUFACTURERS DIRECTORY

MANUFACTURER	MODEL NAME	Style	Debris Body Capacity (cu. yards)	Debris Door (dump angle)	Water Tank Capacity (gallons)	Water Pump (gpm, psi)
 Ditch Witch 1959 W. Fir Ave., Perry, OK 73077 tf: 800-654-6481 f: 580-336-3458 www.ditchwitch.com info@ditchwitch.com <i>See ad page 60</i>	FXT30 Air	Truck	2.5 or 4	45 degrees	200 or 400	4.2 gpm, 3,000 psi
	FXT50 Air	Truck	2.5 or 4	45 degrees	200 or 400	4.2 gpm, 3,000 psi
	FXT65 Air	Truck	2.5 or 4	45 degrees	200 or 400	4.2 gpm, 3,000 psi
Vanair Manufacturing Contact: Sara Tilden 10896 West 300 North, Michigan City, IN 46360 tf: 800-526-8817 p: 219-879-5100 f: 219-879-5800 www.vanair.com marketing@vanair.com						

Hydroexcavation DEALERS/DISTRIBUTORS DIRECTORY

DEALER / DISTRIBUTOR	HYDROEXCAVATION LINES
<i>See ad page 9</i> Great Lakes Equipment Sales, Inc. Contact: Jeff Rodgers 4818 W. 137th St., Unit B, Crestwood, IL 60445 tf: 888-764-5841 f: 888-432-9070 www.usedvacuumtrucks.com info@usedvacuumtrucks.com	Rebel Mfg. Hurricane Hydrovac
Vacuum Sales Inc. Contact: James Redstrecke 51 Stone Road, Lindenwold, NJ 08021 p: 856-627-7790 tf: 800-547-7790 f: 856-627-3044 www.vacuumsalesinc.com sales@vacuumsalesinc.com	VACALL, Presvac

Standard Water Pump (gpm & psi)	Standard Blower (hg & cfm)	Filtration Type	Boom Size	Degree of Rotation	Offloading Type	Controls Location	Wireless Y/N	Accessories Available	Other
4 gpm 4,000 psi	16 hg 1,000 cfm vacuum pump	pleated poly fabric washable & reusable	optional 6 way hydraulic boom	270	reverse pressure to offload	end cap	N	winterization lighting tool boxes racks, cabinets	
4 gpm 4,000 psi	16 hg 1,000 cfm					end cap	N	winterization lighting tool boxes racks, cabinets	
4 gpm 3,000 psi	1,000 cfm							winterization lighting	
4 gpm 3,000 psi	580 cfm							winterization lighting	
4 gpm 4,000 psi	1,000 cfm							winterization lighting	
4 gpm 4,000 psi	1,000 cfm							winterization lighting	

Blower (hg, cfm)	Filtration Type	Boom Size (ft.)	Degree of Rotation	Offloading Type	Controls Location	Wireless Y/N	Vacuum (cfm/psi)	Power Source	Compressed Air Flow	Compressed Air Pressure	Other
500 cfm	Washable polyester	14 feet	270	Full open rear door and tank lift	Curbside	Yes			300 cfm or 200 cfm	250 psi/100 psi or 200 psi/100 psi	
1,020 cfm	Washable polyester	14 feet	270	Full open rear door and tank lift	Curbside	Yes			301 cfm or 200 cfm	251 psi/100 psi or 200 psi/100 psi	
1,215 cfm	Washable polyester	14 feet	270	Full open rear door and tank lift	Curbside	Yes			302 cfm or 200 cfm	252 psi/100 psi or 200 psi/100 psi	
							up to 1,500 cfm and up to 350 psi	4-40 kW AC generators			150-300 amp welders, auxiliary hydraulics systems and battery boosting/charging systems available

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10 Tips for Maintaining Your Hydroexcavator Boom and Debris Tank

FOLLOW THIS ADVICE TO KEEP THOSE TWO COMPONENTS WORKING EFFECTIVELY OVER THE LONG HAUL

BY KYLE ROGERS

There are many components to a hydroexcavator. It all begins with what makes first contact with the material you're tackling on the job site — the boom. And the destination for that material is the debris tank. Here's what you need to know to properly maintain those two integral components that mark the beginning and end of the hydroexcavation process.

1 BOOM INSPECTION CHECKLIST
Prior to starting a job, inspect the hosing on the boom for any cuts or signs of wear. Also inspect the elbow of the boom. "You're looking for any holes, sandblasting or wear that is in that elbow," says Mike Selby, national service manager for Vac-Con. "The idea behind all of this is that if you have any hole whatsoever, outside air can get in at that point and affect your vacuum."

2 THE ELBOW
The elbow is an especially high-wear part of the boom because it is at that point that the material being vacuumed goes from a vertical pathway to a horizontal one into the debris tank. Selby says many manufacturers will make padded wear plates to insert into the elbow. "It's a high-wear area, so that helps increase the amount of time the boom is usable," he says. "I'd recommend operators check with the manufacturer of their machine and see if those types of high-abrasion-resistance components are available because every manufacturer does it differently."

3 GREASE THE BOOM
In terms of regular boom maintenance, the keyword to remember is "grease." "Booms are pretty straightforward," says Karl Roozeboom, manager of customer service and support at Ring-O-Matic. "Grease the points that need to be greased and that's about it. There isn't a lot that can go wrong with a boom, other than just making sure everything is functional before going to a job. There's nothing worse than getting out there and then the boom doesn't work."

If it's a telescopic boom, every expansion joint where the boom extends will require lubrication, as will the mechanism that raises and lowers the boom and the rotator gear that moves it right and left.

"That's one of the most used parts of the truck because that's how you're loading the truck — moving the boom up and down, and left and right," Selby says. "That's the workhorse of the truck."

4 ROTATOR GEAR WEAR
An additional thing to look out for is any material that has accumulated in the rotator gear. "It is a worm gear and ring gear assembly, so if there's any rock or material that gets into the assembly, it can increase the wear time," Selby says.



Canyon Environmental operator Jordan Glimm cleans a Vactor HXX hydroexcavator after dumping its used content at the company's debris yard in Mansfield, Pennsylvania.

PHOTO BY HEATHER AINSWORTH

"BOOMS ARE PRETTY STRAIGHTFORWARD. GREASE THE POINTS THAT NEED TO BE GREASED AND THAT'S ABOUT IT. THERE ISN'T A LOT THAT CAN GO WRONG WITH A BOOM, OTHER THAN JUST MAKING SURE EVERYTHING IS FUNCTIONAL BEFORE GOING TO A JOB."

Karl Roozeboom

5 AVOIDING DAMAGE TO THE BOOM
Outside of some regular greasing and cleaning, the boom requires little ongoing maintenance. Avoiding damaging it in a significant way then becomes another key in keeping it in good working order.

Roozeboom says operators should be aware of all overheads when raising and lowering the boom out in the field, for the equipment's sake as well as safety. And before raising the tank, the boom should return to its seat.

"You could run the boom into the ground if it's swung out the back and you raised the tank," he says. "Or if the boom is up in the air, it could swing around in an uncontrolled fashion. Always return it to its seat before raising or lowering the tank."

6 ROTATE THE HOSE
Selby recommends rotating the hosing on the boom every 30 to 50 hours to maximize its life span — especially for operators working in particularly abrasive environments.

(continued)



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“When you go from vertical to horizontal with the material, you’re going to have a natural wear path on the top side of the hose,” Selby says. “If you take the hose and rotate it a quarter turn, you move that wear point, and that will increase the life of that hose. You start wearing evenly across the hose instead of blowing a hole in one section while the rest of the hose is perfect.”

7 CLEAN REGULARLY

The debris tank should be washed out after each application, no matter what kind of material is being vacuumed.

“It may not be hazardous as far as hazmat is concerned, but there may be some oils or other types of contaminants in the soil that you want to make sure don’t get passed on to another job or application,” says Selby. “So you have to clean the tank out regularly. One, it doesn’t cross-contaminate applications. And two, it makes your equipment last longer. There’s no chance for any type of corrosion from material just sitting.”

The boom should be washed out periodically as well.

“The way these units work is that you have a vacuum generator evacuating air out of the tank faster than it’s capable of getting air in the tank. That’s how you create vacuum at the end of the hose,” he says. “So in order to maximize vacuum efficiency, you need to make sure the boom tube and the inlet to the debris body is free and clear of any material.”

8 CLEANING TIPS

With hydroexcavators, the cleaning process is easy thanks to the onboard high-pressure water.

“When you have your tank door open, just wash down the inside with a lance or whatever it is you need,” says Roozeboom.

He says operators can spray rust inhibitor on the inside of the tank to prevent corrosion, but it’s not vital. “It’s really not a huge issue because most of these tanks get enough usage that they don’t rust up. Just keep it clean. At the end of the day, wash it out.”

The same goes for the boom. Spray the onboard water up through the boom to ensure there’s a clear pathway from the tank to the end of the hose so that the vacuum can work effectively.

9 SHUT-OFF VALVE BALL

Roozeboom says it’s important to inspect the debris tank’s primary shut-off ball on a daily basis. “Make sure that the ball is loose and free inside of the cage and the seat that the ball goes into is clean.”

If that’s not the case, an operator runs the risk of overfilling the tank and damaging other components on the truck.

10 OTHER DEBRIS TANK COMPONENTS

Inspect all seals on the tank to ensure they are clean and free of any material. It again goes back to optimizing the truck’s vacuum power, says Selby.

“Anytime air can get into that air stream, you’re going to have a drop in efficiency in your vacuum,” he says. “You want to be able to suck up all your air through the boom. You don’t want it coming from anywhere else on the truck.”

Keeping the seals clean also extends their life.

“If you have sand in between the seal and the sealing face, obviously it’s going to rub and it’s going to wear,” Selby says.

Also, make sure all grease points on the tank are properly lubricated.

“It’s either tilted with a single cylinder at the front of the tank or a scissor lift underneath the tank,” he says. “Either way, they have pivots that need to be lubricated as well as the hinge point that’s permanently fixed.” ▼

Find more tips on maintaining your hydroexcavator’s debris tank and boom at digdifferent.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.

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

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



THE LATEST: News

JCB celebrates 70th anniversary

JCB celebrated its 70th anniversary Oct. 23. The day also marked the introduction of the JCB limited edition backhoe loader, a version of the 3XC super backhoe model. A total of 70 of the specially made machines will be produced, which feature the vintage look last seen 40 years ago on the JCB 3CIII model.

Cloverleaf Tool Co. purchases Jetter Parts Depot

Cloverleaf Tool Co. of Sarasota, Florida, manufacturer and distributor of pipeline and sewer cleaning and maintenance equipment for jetters and jet/vacs, purchased Jetter Parts Depot of Orlando, Florida.

RapidView names training and installation expert

RapidView IBAK North America named Richie Notz as the company's training and installation expert. Notz was previously a field supervisor for a pipeline inspection company.



Richie Notz

McElroy adds distributor in Louisiana

McElroy added Industrial Municipal Supply Co. of Geismar, Louisiana, to its distributor network. IMSCO has 40 years of experience in custom fusion service, on-site fabrication and maintenance on McElroy machines in addition to being a supplier of HDPE pipe, valves and fittings.

Vanair acquires manufacturing facility

Vanair Manufacturing acquired an 80,000-square-foot manufacturing facility in Michigan City, Indiana, to accommodate increased growth and future expansion. The acquisition brings the company's total production and office space to over 160,000 square feet. The new space will provide capacity for increased manufacturing, training, support, service and leadership functions across the company.

Vermeer names Andringa president, CEO

Jason Andringa assumed the role of president and CEO at Vermeer effective Nov. 1, 2015. The announcement was first made in August as part of the company's family succession planning process. Andringa previously served as president and COO.



Jason Andringa

Continental reaches retread milestone, partners with CMC Tire

Continental Tire North America produced its one-millionth retread at its ContiLifeCycle facility in Morelia, Mexico, in October. The company also partnered with CMC Tire to expand its retreading network, opening a commercial tire retread facility in Las Vegas. The new retread facility can produce up to 24,000 retreads annually with the capacity to grow to 48,000.

Caterpillar Receives Vision for America award

Keep America Beautiful honored Caterpillar with the 2015 Vision for America Award for corporate commitment to sustainability on Nov. 4 in New York.

J&J Truck Bodies & Trailers names director of operations

J&J Truck Bodies & Trailers promoted Joseph F. Caldron to director of operations. Caldron has been with the company 21 years, beginning as a machinist. He will be responsible for directing the company's operations department, including engineering, purchasing, manufacturing and quality.

GPS Insight recognized for rapid growth

GPS Insight ranks 431 on Deloitte's Technology Fast 500, a ranking of the 500 fastest-growing technology, media, telecommunications, life sciences and energy tech companies in North America. The company also

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Ditch Witch hosts international customer event

Ditch Witch, a Charles Machine Works Company, hosted its annual internal customer event at the Ditch Witch Barcelona Support Center on Oct. 23. The event attracted nearly 300 customers and staff from over 20 countries.

LMK's Hydro Hat withstands patent reviews

A ruling by the Patent Trial and Appeal Board of the United States Patent and Trademark Office has no impact on the continued validity of

the fundamental patent claims surrounding LMK's commercial embodiments for the Insignia Seal, the company said. Specifically, claims covering the Hydro Hat remain intact and valid following challenges to LMK's patent claims made by BLD Services.

Envirosight expands sewer inspection vehicle offerings

Envirosight will expand its offering of preferred build-outs (PBOs) in 2016 with the addition of a Ford Transit chassis option. Enhancements include expanding the capacity of washdown tanks from 10 gallons to 18 gallons in most packages, installation of all generators with a dedicated battery, a full corkboard wall above the operator's desk and custom shelving with tool holders above the equipment bay workbench. ▼



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Rock of Ages

HORIZONTAL DIRECTIONAL DRILLING ENSURES NORTHEASTERN WISCONSIN CUSTOMERS RECEIVE AN UNINTERRUPTED WATER SUPPLY

BY SCOTTIE DAYTON

The Menasha (Wisconsin) Water Utility wanted to connect the Water Street distribution main on the north side of the Fox River power canal to the River Street main on the south side. The loop would provide another means of distributing water to the narrow dike if officials had to close the main supply valves.

Dorner Inc. in Luxemburg, Wisconsin, won the general contractor bid and subcontracted the horizontal directional drill under the canal. After workers bored down 17 feet through clay, they hit solid limestone and stalled. Unable to complete the bore, they filled in the pits and left.

Superintendent Todd Dorner called Randy Waas, vice president of Waas Boring & Cable in Lomira, Wisconsin. "Although we had the equipment and expertise, we hadn't bid the job because of its difficulty," says Waas. A team of seven worked three weeks to bore 400 feet before pulling in an 18-inch HDPE pipe.

PROPER EQUIPMENT

The project required D100x120 and D50x100 Series II Navigator directional drills (Vermeer), a 20-foot-long mud motor (SlimDril International), three custom-built rock reamers (Century Products), three vacuum excavators, and a twin tank MCM-4000 reclaimer (American Augers). The latter mixes, cleans and transfers drilling fluid.

After the crew excavated pits in parking lots on both sides of the canal, drill operator Ed Feucht followed the pre-established bore path using the D100 machine set up on the north side. "Our biggest challenge was getting the pilot hole through to the other side," says Waas. "Ed was boring down at a 30-degree pitch, an angle sufficient enough to deflect the 8-inch bit if he didn't engage the limestone just right."

Waas used a mud motor with low-speed/high-torque gear reduction to provide additional power to the bit. The configuration reduced the output speed of the 1-2 ratio lobe high-speed positive displacement hydraulic pump



A chain and excavator boom help lift the 20-inch rock reamer as workers break apart the bore assembly in preparation for pulling drill rods to the south side.

PROJECT: Install 400 feet of 18-inch HDPE pipe through rock and under a canal

CUSTOMER: Menasha (Wisconsin) Water Utility

CONTRACTOR: Dorner Inc., Luxemburg, Wisconsin

SUBCONTRACTOR: Waas Boring & Cable, Lomira, Wisconsin

EQUIPMENT: Series II Navigator horizontal directional drills, Vermeer Corp. 888/837-6337 / www.vermeer.com

RESULT: Water loop installed

by a factor of three, and increased the output torque by the same multiple. The system converted hydraulic power to mechanical power and maintained consistent bit speed as Feucht applied pressure to it.

SLOW AND EASY

Eric Feucht used a DigiTrak Eclipse locator (Digital Control) to track the sonde on the mud motor. Meanwhile, workers at the bore pit added bentonite

PHOTOS COURTESY OF WAAS BORING & CABLE



The Vermeer D50x100 drill operator trails rods through the borehole as another worker sucks up drill fluid using a vacuum excavator with a 1,200-gallon spoils tank.

Next, the bentonite mixture was pumped through seven desilter Hydrocyclones (GN Solids America LLC) before entering the 2,667-gallon cleaning fluid/mixing tank. A charging pump in the tank transferred the slurry to the mud pump on the drill rig parked alongside. The project used 15,000 pounds of bentonite.

“This was a double-entry or surface-to-surface bore,” says Waas. “Once we removed the mud motor, we attached a 12-inch rock reamer to the drill string and began pulling it north toward the D100 rig.” As it advanced, the D50 operator on the south side attached a drill rod to the trailing end of the string, enabling workers to attach the next size reamer without leaving the borehole open and subject to unrecoverable collapse.

The 12-, 20- and 30-inch rock reamers each had six carbide Tricone bits (Sandeep Drill Tech). Their large cone offsets, chisel-shaped inserts and irregular tooth spacings ground rock into fine gravel, enabling it to flow out the borehole and into the exit pit. Four fins symmetrically spaced ahead of the reamer centered it in the smaller hole, ensuring that the bits cut evenly.

CRANK UP THE VOLUME

Pumping 170 gpm of drill mud quickly filled the 5- by 6- by 9-foot-deep exit pit. Besides running the company’s two vacuum excavators, Waas hired a hydroexcavator and operators from Valley Hydro-Excavation in Campbelsport, Wisconsin, to help transport the flow to the reclamation pit.

“ED WAS BORING DOWN AT A 30-DEGREE PITCH, AN ANGLE SUFFICIENT ENOUGH TO DEFLECT THE 8-INCH BIT IF HE DIDN’T ENGAGE THE LIMESTONE JUST RIGHT.”

Randy Waas

and water to the reclaimer’s mixer to create a slurry. When the bit was about 6 feet from entering the limestone, Ed Feucht started the mud pump on the drilling rig, sending the slurry through the rods to the drilling motor, which rotated the bit.

As the fluid circulated to clean the motor, he advanced the bit until it touched the rock, then slowly increased the pressure against it. “It takes patience and experience to get the mud motor to start cutting into rock,” says Waas. “Ed had to take his time and let the bit do its job.”

The rig’s pressure gauge enabled Feucht to monitor how the drilling motor was performing, and another gauge gave the weight on the bit as an excessive amount could damage the mud motor’s on-bottom thrust bearings. Feucht tried to drill with a steady pump pressure and flow rate of 3,000 psi/170 gpm. The work was so demanding that the bore advanced only 50 feet per day.

After traveling another 8 feet at the same pitch through solid rock, the bit broke through under the canal. The next challenge was to level off in a short radius at 25 feet deep, then bore 250 horizontal feet before beginning the 30-degree ascent to the exit pit on the south side of the canal. The bore exited at 9 feet deep and precisely on target.

MUD, GLORIOUS MUD

As slurry flowed into the exit pit, workers used a Vermeer vacuum tank trailer with a 1,200-gallon spoils dump tank to transfer the liquid to the 5-foot-deep reclamation pit on the north side. A pump in the 4,000-gallon reclaimer sucked up the fluid and sent it to the 1,333-gallon screening tank, in which three 50-mesh shaker screens and two 140-mesh shaker screens separated clay and silt from the debris.



A hydroexcavator from Valley Hydro-Excavation in Campbelsport, Wisconsin, helps a Waas vacuum tank trailer pump drill fluid from the exit pit.

“When a reamer arrived on the south side, we removed it and tied on rods as the D100 pulled back the string,” says Waas. “Bores always run in one direction.” Each of the three upsizes took 1 1/2 days.

A field service technician from supplier Ferguson Waterworks in Appleton, Wisconsin, had fused the 40-foot-long HDPE pipe sections for the initial boring contractor. “We fused our pulling head onto the pipe, then used the Hitachi excavator arm to bring the head around while the John Deere 544H payloader guided the pipe into the pit at the proper angle,” says Waas. “HDPE pipe is very flexible and a good material for directional boring, especially when there are severe entry and exit angles.”

Workers then shackled the pulling head to a 26-inch fluted reamer that would further break up material as it was pulled through and facilitate flushing it out. As the pull began, a backhoe suspended the mechanical joint fused at the end of the pipe to prevent it from dragging against the asphalt. “We didn’t worry about damaging the pipe because the wall is 1 1/4 inches thick,” says Waas.

After the pull, the crew fused a mechanical joint to the head of the pipe. Utility workers then connected the joints to the PVC mains to establish the desired loop. ▼

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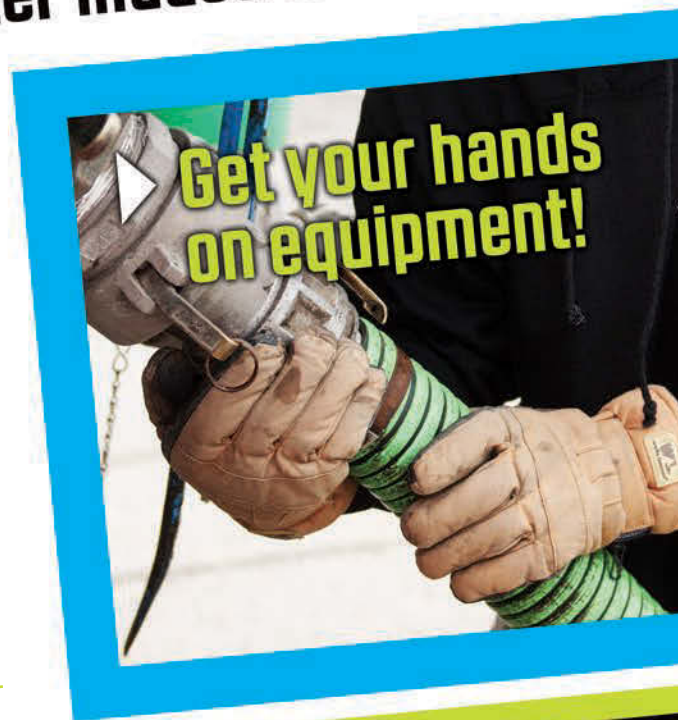
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Hydroexcavation Equipment

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414/322-4973; www.alliedequipmentrental.com



BOXR Mfg. 10-yard Hydroexcavator

The 10-yard Hydroexcavator from BOXR Mfg. can be retrofitted onto an existing truck chassis, such as this 2004 KW from Wheatland County in Alberta, Canada. The truck has a new life and is used for daylighting buried utilities safely before any road or other construction can commence.

LMT Smart-Dig HX4000

The Smart-Dig HX4000 modular hydroexcavator from LMT can be mounted on a wide variety of new or used truck chassis.

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800/699-7557; www.vacpump.biz

from minus 40 to 150 degrees Fahrenheit to withstand steam blasting with deicing equipment. **208/790-8770; www.screencosystems.com**

Utilicor Technologies MC-450 Minicor Coring Attachment

The MC-450 Minicor Coring Attachment from Utilicor Technologies fits skid-steers as well as Ditch Witch SK 850 and Vermeer S800XT mini track loaders. This powerful keyhole-coring attachment helps perform quick and efficient pavement core cuts, which are commonly used for daylighting or potholing purposes. It cuts pavement cores up to 18 inches in diameter for keyhole repair applications. Due to its narrow width, coring in tight spaces or up close to buildings or other structures is also possible. Simple, intuitive controls ensure ease of operation, and quick connection to the auxiliary hydraulic system makes for simple installation, allowing the operator to plug and play and be ready to core in a matter of minutes. Integrated water tanks allow for multiple cores to be cut in a single fill.

888/572-6666; www.utilicor.ca



Vanair underdeck rotary screw air compressor system

Using a single PTO opening and using the truck's own engine for power, underdeck rotary screw air compressor systems from Vanair provide power in a variety of markets. Whether it's air, AC power, hydraulics or any combination of the three, they are designed to mount seamlessly under the vehicle, leaving the hitch free for towing other equipment and opening up the bed for additional storage space. The PTO shaft-driven technology provides the required air pressure and volume, increasing productivity and lowering maintenance while saving money on fuel costs.

219/879-5100; www.vanair.com



Hydroexcavation Trucks and Trailers

Camex VIP Hydrovac System

The VIP Hydrovac System from Camex can be used for daylighting, trenching, potholing and pylon holes, and servicing repair pits. Because the Hibon pump is able to switch between



pressure and vacuum, it can also be used for water and debris removal and tank clean-out. Remote control on the 6- or 8-inch-diameter booms enables one-man manipulation and operation. The boom has a 30-foot reach for better access and positioning. A walk-in insulated van body provides operator comfort in colder conditions. It can dig effectively in all soil types, including clay, and with the aid of an onboard boiler, provides a safe means of digging in frozen ground, enabling work to be done in areas of limited access and extreme conditions.

780/955-2770; www.camex.com

Ditch Witch FX65

The FX65 vacuum excavator from Ditch Witch has an advanced airflow of 1,215 cfm, 20 percent more than the FX60 model. Powered by a 74 hp turbocharged Deutz diesel engine, it is designed for super-size cleanup jobs. Equipped to meet the requirements of virtually any job size, it is available with 500-, 800- or 1,200-gallon vacuum tanks and 200-, 300- or 500-gallon water tanks. It has an advanced three-stage filtration system with a cyclonic filter, which cleans the air prior to reaching the filter.

800/654-6481; www.ditchwitch.com



Foremost FVS1000 Hydrovac

The FVS1000 Hydrovac from Foremost is a compact unit designed to maneuver easily in urban environments while maintaining the same standards of productivity as the company's larger models. It is mounted on a tandem-axle chassis and holds 1,000 gallons of freshwater and 7 cubic yards of debris. All working components are housed in a 42-inch aluminum, heated, insulated and lighted van body. A Robuschi RB-DV125 PD blower provides 4,000 cfm and full vacuum. The boom is 8 inches and operated by an Omnex wireless controller, which allows for control of vehicle rpm, the wash system, off-loading and vacuum functions. The water system has a CAT 3560 wash pump, capable of 3,000 psi and 20 gpm, and is heated by a 740,000 Btu diesel-fired boiler. Off-loading is performed via a sloped debris tank, assisted by a washout system powered by a high-volume centrifugal pump.

403/295-5800; www.foremost.ca



GapVax HV-55

The HV-55 hydroexcavator from GapVax has a 12 1/2-cubic-yard debris body and water tanks from 400 to 1,400 gallons. It comes with a PD blower rated at 5,250 cfm and 28 inches Hg. Its filtration

design includes five cyclones that prolong the life of the filter bags and eliminate the threat of material entering the vacuum pump. The tailgate is fully opening, field-adjustable and has four fail-safe, individually adjustable locks that ensure a complete seal. Options include interior polymer coating, a cold-weather package, sludge pump, wireless remotes, washdown system and a stainless steel body. **888/442-7829; www.gapvax.com**



Hot Jet USA HotJet II XtremeFlow II

The 550-gallon HotJet II XtremeFlow II from Hot Jet USA is available with 300- and 500-gallon vacuum units for hydroexcavation and can be skid- or trailer-mounted for reliability and ease of operation. Two separate power units power the hydroblaster equipment and the vacuum, allowing for easy service and operation. Hydroblaster systems are available from 4 to 10 gpm, with psi ranging from 2,000 to 7,000. The unit can be run with either hot



or cold water, with hot-water systems proven to blast through frozen conditions. The vacuum systems run from 18 to 35 hp with gas power plants and from 26 to 68 hp with diesel power plants. Waste tanks are available from 200 to 800 gallons and can be mounted on a skid platform to mount on a vehicle or trailer, or in a complete turnkey trailer package.

800/624-8186; www.hotjetusa.com

Hurco Technologies VAC 250 and 500

VAC 250 and 500 units from Hurco Technologies are a portable solution for potholing and exposing buried utilities. They use a Gardner Denver 14 Hg PD vacuum pump and a Giant 4,000 psi, 4.2 gpm high-pressure water pump. The pitched-angle tank eliminates mechanically complicated lift and dump systems for faster and more efficient debris unloading. The 97-gallon water tank sits under the debris tank, balancing the load



over the center of the axle, resulting in little change on tongue weight and ensuring a safe towing configuration. All units can be configured to meet specific needs, including auxiliary hydraulics and water heaters. All are powder-coat painted.

800/888-1436; www.hurcotech.com

(continued)



McLaughlin MEGA VX200

The McLaughlin MEGA VX200 6-inch truck-mounted vacuum excavator series gives utility contractors productive potholing with the capacity and power they need to stay on the job longer. The flexible, modular design enables contractors to customize the 6-inch vac to suit their job site needs. It has spoil tank capacities ranging from 1,200 to 3,000 gallons and a standard option of 800 gallons of freshwater. It has a 6-inch hose width with a 3,200 cfm blower at 18 inches of Hg. It is powered by a 200 hp John Deere Tier 3 engine. Its three-stage cyclonic filtration system allows for both wet and dry vacuum excavation, and the cam-over hydraulic rear door provides a 360-degree positive seal to keep fluids securely in the debris tank.

800/435-9340; www.mclaughlinunderground.com

Petrofield Industries Tornado F4 Slope



The Tornado F4 Slope hydroexcavator from Petrofield Industries has a 13-cubic-yard mud tank and 2,100-gallon freshwater tank, with a boiler for hot water and a positive displacement blower (4,000 to 6,300 cfm) to pull the spoils to the tank. The boom has a 342-degree rotation and a 26-foot reach. All critical components are housed in an insulated and heated aluminum van body. Because of the sloped floor design, operators do not hoist the tank to empty it, eliminating the dangers of overhead power lines and dumping on uneven ground.

877/340-8141; www.tornadotrucks.com

Presvac Hydrovac

The Presvac Hydrovac is a versatile hydroexcavator designed for cold-weather operation and is offered as an option to be in full compliance with DOT collection and 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 to min-



imize carryover. Modular filtration configured to the blower size provides blower protection and minimal maintenance. It has a heavy-duty 8-inch boom (up to 25 feet long) with six-way hydraulic power and wireless controls for all boom functions, soft-start water pump, vacuum breaker and truck engine speed.

800/387-7763; www.presvac.com

Ramvac by Sewer Equipment HX-3

The HX-3 truck-mounted hydroexcavator from Ramvac by Sewer Equipment is the smallest model in the Ramvac truck family but comes with large productivity features, including a 3-cubic-yard debris body, 0 to 10 gpm at 2,500 psi water system all in a temperature-controlled enclosure, a compact footprint, NEMA-rated electrical system, debris blow-off system and a durable, fully hydraulic power train.

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



Ring-O-Matic 550 HiCFM VacEx Hydroexcavator

The Ring-O-Matic 550 HiCFM VacEx Hydroexcavator comes with a 50 hp CAT diesel engine and 1,000-cubic-feet-per-minute Gardner Denver positive displacement blower for potholing for utility location, sewer jetting to clear sewer lines, sump-and-catch basin cleaning, HDD job site support and mud management, construction site cleanup, and environmental cleanup. The Cyclo-Jet 2-in-1 Pothole Excavator attachment can safely dig a 3-foot hole in 30 seconds, making it ideal for contractors looking to locate underground utilities quickly and safely.

800/544-2518; www.ring-o-matic.com



SchellVac Equipment 2600 Series Combination Hydrovac

The 2600 Series Combination Hydrovac from SchellVac Equipment is designed to serve construction, energy and utility industries. The system is mounted on a tridem chassis and is equipped with a 6,400 cfm Robuschi PD blower direct-powered by a Namco transfer case. The water jetter system consists of a 3560 CAT 20 gpm, 4,000 psi pressure pump, 980,000 Btu boiler, and 1,200-gallon water capacity. The complete water system is installed in an insulated and heated aluminum body. The hoisted

15 1/2-cubic-yard debris body includes a dual cyclone plus cartridge filtration system. It has a full-open rear door with hydraulic locks, an 8-inch remote-controlled telescopic boom with a 27-foot reach when fully extended, and a load-sense hydraulic system.

877/336-0081; www.schellvacequipment.com

Super Products Mud Dog 1200

The Mud Dog 1200 from Super Products is a 12-yard-debris-capacity hydroexcavator with a rear-mounted boom capable of a 19- to 27-foot reach, 335-degree rotation, and a 45-degree upward and 25-degree downward pivot, allowing crews to achieve greater work area access and deeper digging without stopping production to reposition the truck. Its easy-to-use ejector plate unloading technology and tilt unloading ensures that liquids in the debris tank are cleared quickly and efficiently even when unloading in an up-slope/nose-down position. The Acculevel load-sensor system offers precise debris level measurement.

800/837-9711; www.superproductsllc.com



Transway Systems Terra-Vex

The Terra-Vex all-season hydroexcavator from Transway Systems has a Robuschi RB-DV145 6,400 cfm blower, with an OMSI transfer case and insulated acoustical enclosure with walk-in storage. Water pressure is achieved by the hydraulically driven Giant LP600 water pump, delivering 10 gpm at 6,000 psi. The 2,500-gallon debris tank has a hydraulically operated hoist and door locks with a full-open door. The 1,200-gallon HDPE water tank supplies a 420,000 Btu diesel-fired burner permitting operation in sub-zero temperatures. The water pump and water tank compartments are heated by one diesel-fired heater and one 12-volt engine coolant heater. The 26-foot hydraulically operated 8-inch suction boom has joystick control and wireless remote control. All parts are painted/powder-coated off the unit, with a marine-grade plywood floor enclosure, three-camera backup system and digital water level display.

800/263-4508; www.transwaysystems.com



US Jetting JET VAC 500

The JET VAC 500 combination unit from US Jetting is compact and requires no CDL license. It is easy to operate and has a low profile with nothing above the cab. It can



be mounted on a Ford F-550 chassis or similar truck. As a truck unit, it is capable of high-lift dumping. It is also available as a tandem trailer-mounted unit with a 500-gallon debris tank, 250-gallon freshwater tank, and 3,000 psi at 10 gpm jetting package. It comes with 300 feet of 3/8-inch hose and a set of basic nozzles. It has a HATZ Tier 4 Final water-cooled diesel engine, a PD blower and a 4-inch suction hose. Both the blower and the jetter are hydraulically driven, allowing for better control and delivery of power. With high-velocity tips, the customer has the capability of hydroexcavation.

800/538-8464; www.usjetting.com

Vac-Con X-Cavator

The easy-to-operate X-Cavator from Vac-Con comes with a hydrostatic drive that uses the chassis engine to eliminate the need for PTO, clutch and gear-box operation. It offers water systems up to 4,000 psi and a mobile wireless remote control, enabling the operator to work the chassis engine rpm, boom, automatic vacuum breaker, dump controls and hydraulic door locks from up to a 1/2 mile away. The boom rotates 270 degrees.



Vac-Tron Equipment HTV PTO

The HTV PTO truck from Vac-Tron Equipment is available on Ford or Freightliner chassis. The full line of the HTV (Hydro Truck Vac) Series has debris tanks ranging from 300 to 1,500 gallons. The PTO of the truck drives positive displacement vacuum blowers that produce 1,000 to 3,000 cfm. These units are standard with a high-pressure water system, full hydraulic rear door, reverse pressure, and Big Red filter housing that cleans the air down to 0.5 microns before it passes back through the vacuum pump. Air compressors and hydraulic booms are also available, and the truck lets the operator pull other equipment to the job site.



888/822-8766; www.vactron.com

Vacall AllExcavate

Vacall AllExcavate hydroexcavation models have three boom and intake hose or tube options, including a boom design using a heavy-duty full-length rubber hose that is durable yet flexible with a gum rubber lining that runs from the turret on the debris tank out to the pickup point; a steel tube-in-tube boom and intake that connects to an identical rubber hose elbow that leads to the pickup

point; or the original steel tube-in-tube with steel elbow boom and intake tube. Its strong



vacuum capabilities generate up to 27 inches Hg and up to 5,800 cfm. Used in combination with the machine's high-power waterjetting forces, it can effectively loosen and remove dirt and other material from around utility lines and foundations where mass excavation is not possible.

800/382-8302; www.vacall.com

VacStar vacuum excavator

VacStar vacuum excavators are designed to reclaim directional drilling fluids; pothole utilities; clean out manholes, catch basins, wash pits, and valve and meter boxes; and wash equipment and property. Damage associated with backhoes or shovels to buried utilities is avoided using high-pressure water to dig in all types of soil. The rotary vane pump provides a strong vacuum for greater depths, distance and speed. It allows the operator to vacuum and pothole great distances, permitting backyard and previously inaccessible work areas. The pressure mode allows clogs to be removed from the vacuum hose and the contents to be maintained under the controlled dump mode.



319/656-3434; www.vacstar.com



Vactor HXX HydroExcavator

The HXX HydroExcavator from Vactor provides up to seven hours of continuous operation with onboard water. Standard variable-flow water systems allow lower water flow, resulting in less operator fatigue and a cleaner, more precise digging process. The systems also allow for up to 25 gpm for those projects requiring higher water flow capabilities. For safer operation around utilities, DigRight Technology allows the operator to select the maximum desired working water pressure for their application based on vacuum excavation best practices. This selection will limit the water pump from exceeding site, industry or customer maximum pressures to ensure a safe and nondestructive method of excavation. It also reduces wear and tear on the water system, extending the life of the

product. Its boom turret design provides increased vertical range of motion for improved operator performance and productivity, enabling the operator to complete most applications with only one dig tube, eliminating the need for additional vacuum tubes.

800/627-3171; www.vactor.com

X-Vac X-6 Hydro Excavator

The truck-mounted X-6 Hydro Excavator from X-Vac, A Product of Hi-Vac Corporation, has a 6-cubic-yard debris tank and can store 570 gallons of freshwater with an option for a capacity of 1,000 gallons. The adjustable triplex water pump exerts up to 3,000 psi and is set independently of the blower speed. Vacuum systems range in size from 2,600 cfm at 27 inches Hg vacuum to 3,400 cfm at 16 inches Hg of vacuum. Its 6-inch vacuum hose exposes any type or size of underground utility, especially in residential areas where space is tight and crews want to avoid blocking residential streets.



740/374-2306; www.x-vac.com

Nozzles

Hydra-Flex Ripsaw

The Ripsaw rotating nozzle from Hydra-Flex blasts a straight water jet up to 3,200 psi while rotating at an optimized speed to form an 18-degree cone-shaped spray pattern. Its concentrated stream results in great impingement, allowing operators to dig fast while using less water. 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. A non-conductive urethane coating on the nozzle body protects the user and sensitive underground assets. It is available in 3- to 12-inch sizes with repair kits available to extend the nozzle's life and lower overall operating costs.



952/808-3640; www.hydralflexinc.com

NozzTeq MONRO-JET

The MONRO-JET hydroexcavation nozzle from NozzTeq combines the power of a solid stream pencil jet with the large coverage of a fan jet. Its circular water jet motion generates tremendous power at modest gpm rates, allow-



ing the operator to move faster whether hydroexcavating, surface cleaning or cleaning sewer lines. It can be used for other types of surface cleaning such as concrete, steel, castings and large surface areas including line removal from runways. It can be modified for internal pipe cleaning of sewers and pipes of all types. It has an orbital design that increases performance at a lower gpm rate and pressures as high as 36,250 psi. [866/620-5915](tel:8666205915); www.nozzteq.com

Soil Surgeon

The Soil Surgeon hydroexcavating tool fits any sewer combination truck equipped with a telescopic 6- or 8-inch boom. The tool has a 1-inch water connection. The operator controls water pressure and power with 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](tel:9493631401); www.soilurgeoninc.com

StoneAge Hydro-X Tools

The Hydro-X line of hydroexcavation tools from StoneAge offers four options for accessing utilities and precisely excavating an area with high-pressure water. Tool configurations include a single hard-hitting jet head for accurate digging, a dual-

jet head that divides a pump's power into a wider jet path, and a triple-jet pattern that delivers a wide swath for fastest material removal. The 60-inch single-jet lance provides extra reach for digging deep, focused holes. The tools use high-quality, long-lasting carbide nozzles and are capable of up to 5,000 psi and 12 gpm. [866/795-1586](tel:8667951586); www.stoneagetools.com



Water Cannon Hydro-Excavation Nozzle

Hydro-Excavation Nozzles from Water Cannon are rated to 5,800 psi and orifice sizes up to 20. The dynamic 0-degree stream of water spins at 2,000 rpm to form a 25-degree cone pattern that rips through the subsoil to expose underground utilities. Their spinning nature helps avoid damage that can be caused by straight 0-degree static nozzles with an added benefit of the 25-degree cone spray hitting the surface at varied angles to increase productivity. [800/333-9274](tel:8003339274); www.watercannon.com



Sludge Pumps

Gorman-Rupp PAH16A60-C-B-C18

The PAH16A60-C-B-C18 from Gorman-Rupp is a heavy-duty, priming-assisted pump ideal for mining, quarries, bypass pumping and other instal-

lations where high flow rates are a necessity. It offers flows to 15,000 gpm, total dynamic heads up to 204 feet, and a solids handling capability of up to 4 inches. The 18-by 16-inch pump is driven by a 755 hp, Interim Tier 4, Caterpillar C18 twin turbocharged, charge air-cooled diesel engine. It has an auto-start control panel and float switch assembly. The priming system uses a venturi and compressor, eliminating leaks associated with traditional vacuum-assisted pumps. An oversized, oil-lubricated mechanical seal allows the pump to run dry continuously without damage. [419/755-1011](tel:4197551011); www.grpumps.com



Hydra-Tech Pumps S4T

The S4T 4-inch hydraulic-drive submersible trash pump from Hydra-Tech Pumps is versatile with a rugged, compact design and the ability to pass large solids. It is designed to tackle jobs ranging from construction site dewatering to sewage and slurry pumping. It operates with HT15 to HT25 power units, or other hydraulic power sources capable of flows of 10 to 15 gpm. It delivers output flows to 800 gpm, heads to 110 feet and pressure up to 3,000 psi. The safe and variable-speed hydraulic drive can be used where electric power is hazardous or impractical. [570/645-3779](tel:5706453779); www.hydra-tech.com



Myers Seth Pump DD-6

The high-volume DD-6 double diaphragm pump from Myers Seth Pump has long run-times and is easy to maintain and operate. It can be used for wellpointing, ponds, sludge, sewage and handling solids up to 4 inches in diameter. It is difficult to clog and is self-priming, with head pressure of 135 feet and a flow rate of 475 gpm. Its industrial engines can be repaired in the field easily. [904/389-6114](tel:9043896114); www.myersseth.com



Vacuum Pumps

Cat Pumps Model 3570

The Model 3570 from Cat Pumps is rated to 30 gpm and 3,000 psi, a combination of high flow and high pressure that is a fit for hydroexcavating, jetting, hydrostatic testing and high-pressure clean-

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Pegasus Utility Locating Services, Inc.
Phoenix, Arizona

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ing. It is designed for demanding applications requiring dependable intermittent-duty-cycle performance. It includes concentric, high-density polished solid plungers that provide a true wear surface and long seal life. The drive end consists of matched connecting rods and oversized bearings to provide thousands of hours of trouble-free service. V-packings and low-pressure seals are completely lubricated and cooled, increasing service life. The high-pressure manifold is easily serviced without entering the crankcase, reducing field service time.



763/780-5440; www.catpumps.com

Moro USA AC5

The continuous-duty AC5 fan-cooled vacuum pump from Moro USA is capable of a continuous vacuum of 22 inches Hg with a free flow rate of 460 cfm capable of pumping nonvolatile liquids and sludge from long distances. The suggested tank size is 2,000 to 6,000 gallons. It has an integrated check valve, changeover valve, automatic oiling system, industrial-duty bearings, Viton seals and high-flow-rate asbestos-free spark-proof vanes. It doesn't require



a liquid cooling system. Dual cooling fans keep it operating efficiently even in the most rigorous conditions. The pump includes 4-inch flange connections and is available in preassembled pump packages complete with stand, secondary, oil catch and drive, and gearbox, and can be hydraulic, pulley or engine driven.

800/383-6304; www.morousa.com

Wallenstein Vacuum Pumps - Elmira Machine Industries 750 Series

A larger off-load valve boosts performance on 750 Series pumps from Wallenstein Vacuum Pumps - Elmira Machine Industries. They have 422 cfm airflow at 1,200 rpm and vacuum up to 28 inches Hg. Cooling options include air cooling (fan), liquid cooling (jacketed housing) or dual cooling, where air injection is combined with liquid cooling. Lubrication options include a shaft-driven oil pump or an automatic air pressure system that force lubricates with no moving parts. They have extra thick and wide vanes for longer service life and lower maintenance cost. A standard flush port allows routine internal cleaning. A quick-access endplate allows easy internal inspection with no bearings to pull.

800/801-6663; www.wallenstein.com



Water Pumps

Northern Tool + Equipment NorthStar Full Trash Water Pump

The NorthStar Full Trash Water Pump from Northern Tool + Equipment is a heavy-duty water pump designed to handle a variety of liquids and solids up to 1 1/4 inches. Using a 240 cc OHV Honda engine, it runs quiet and strong, and with its silicon carbide mechanical seals can resist corrosion, wear and heat better than common aluminum oxide seals. It includes a cast iron impeller and volute to increase pump life in full trash situations. Built with the job site in mind, the pump also includes a rugged steel roll cage to provide maximum protection that ensures product longevity.

800/221-0516; www.northerntool.com ▼



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THE LATEST: Products



1

1. CAS DataLoggers water level logger

The MX2001 Bluetooth Low Energy-enabled Water Level Datalogger from CAS DataLoggers and Onset is designed for wireless communication with mobile devices. The HOB0 MX water level logger monitors changing water levels in a range of applications, including streams, lakes, wetlands, tidal areas and groundwater. Using Onset's free HOB0 mobile application — available on iOS devices — users can configure the logger and view/share data from its deployed location from their smartphone or tablet. **800/956-4437; www.dataloggerinc.com.**



2

2. Berntsen International mobile application

InfraMarker System 3.0 mobile application by Berntsen International is designed to improve the marking, mapping and management of utility lines and features. The upgraded application incorporates submeter GPS marking, supports addition of pictures, video and other media, and includes activity time stamping for audit and management compliance. Data exporting has also been improved for easier GIS integration. The application is available for a free trial at the Google Play store. **800/518-0934; www.berntsen.com.**



3

3. Manitou compact excavator

The Z55 Gehl 5 1/2-metric-ton compact excavator from Manitou is equipped with a 47.6 hp Yanmar Tier 4 turbocharged diesel engine that has an electronic throttle. Eco mode and auto deceleration reduces engine speed by 10 percent without sacrificing power and decreases the engine speed to idle after four seconds without hydraulic movement. Controls include a proportional auxiliary hydraulic rocker switch that enhances attachment options by enabling the operator to adjust the hydraulic flow. The operator can select standard ISO or an optional backhoe control pattern with a turn of a mechanical lever. A boom offset swing of 68 degrees in both directions allows for digging a square hole without repositioning the machine. **262/334-9333; www.manitou.com.**



4

4. Water Cannon electric pressure washer

The 14M10 portable, 115-volt electric-powered pressure washer from Water Cannon delivers 3 gpm at 1,000 psi. Designed for restricted areas with power but no water, the washer has a 25-gallon onboard tank with room for a small hose reel under the tank. Applications include cleaning air-conditioning coils on rooftops or basements, jetting pipes in bathrooms or kitchens, and quick cleanups. **800/333-9274; www.watercannon.com.**



5

5. Vac-Tron PTO-driven vacuum truck

The HTV 573 PTO (power takeoff) from Vac-Tron Equipment is available on Ford or Freightliner chassis. The full line of HTV (Hydro Vac Truck) Series features debris tanks ranging from 300 to 1,500 gallons. The PTO drives positive displacement vacuum blowers that produce 1,000 to 3,000 cfm. Units are standard with a high-pressure water system, full hydraulic rear door, reverse pressure and the company's Big Red filter housing that cleans the air down to 0.5 microns. Air compressors and hydraulic booms are also available on most HTC Series units. **888/822-8766; www.vactron.com.**



6

6. Ditch Witch mini skid-steer

The SK752 construction-grade mini skid-steer from Ditch Witch features a 24.8 hp Kubota diesel engine. The machine has an 860-pound operating capacity and increased hinge-pin height to 83 inches for more efficient loading. It features an ergonomic operator's station with standard dual-lever ground drive controls, an operational joystick and two-way auxiliary foot pedal. The platform measures 74 square inches. **800/654-6481; www.ditchwitch.com.**



7



9



8



10



11



12

7. Doosan small-body light towers

LSV6 and LSV8 small-body portable light towers from Doosan Portable Power feature a compact design and mast for greater maneuverability and ease of transport. Both towers have a vertical mast that manually extends to 25 feet 6 inches and have four 1,000-watt metal halide lamps (hydraulic tower available). The towers are 99.1 inches long and 49 inches wide with a travel position height of 99 inches. The LSV6 is powered by a Tier 4 Final Kubota D1005BG diesel engine with Mecc Alte 6 kW alternator. The LSV8 has a Tier 4 Final Kubota D1105 engine and Mecc Alte 8 kW alternator. **800/633-5206; www.doosanportablepower.com.**

8. Hilti module diamond core bits

X-Change module (X-CM) core bits by Hilti can be re-tipped on the job site in just a few minutes using a screwdriver, enabling operators to replace a worn X-CM module with a new module instead of replacing the entire core bit in the event a bit becomes stuck in concrete. All modules are easier to store and transport than complete drill bits and are available in diameters ranging from 2 to 8 inches. **800/879-8000; www.us.hilti.com.**

9. Screenco Systems Folding Tripod Lifter

The all-aluminum Folding Tripod Lifter from Screenco Systems has a 600-pound lifting capacity with an 800-pound winch and auto brake. It includes 20 feet of 3/16-inch galvanized cable or is available with a 1,200-pound winch that holds 50 feet of cable. Stainless steel cable is optional. The unit is available with 4-, 5- or 6-foot legs. The 4-foot model weighs 28 pounds and stores upright in service vans. The 5-foot model fits on the hose deck of most trucks, while the 6-foot model can be used to lift heavy pumps. All models have aluminum footpads with cleats for solid footing on soft soils. **208/790-8770; www.screencosystems.com.**

10. Komatsu parallel link undercarriage

The parallel link undercarriage system (PLUS) from Komatsu America Corp. is an option on the D155AX-8 dozer. Available with three shoe widths (24, 26 and 28 inches), the system is designed to provide up to twice the life of a conventional undercarriage and eliminates the downtime of pin and bushing turns. **847/437-5800; www.komatsuamerica.com.**

11. Trimble pipe lasers

Spectra Precision DG613 and DG813 pipe lasers from Trimble are smaller in length than their predecessors. Designed for use in manholes with precast inverts and a tight radius, both models have a grade range from negative 12 to 40 percent. They are fully self-leveling over the entire grade range. The RC803 remote control provides full function control and utilizes infrared communications when in the pipe at a distance of up to 500 feet. Flexible power options provide up to 40 hours of operation with NiMH rechargeable batteries and 50 hours with alkaline batteries; alkaline batteries can be used directly in the laser without a separate battery pack. **800/527-3771; www.spectralasers.com.**

12. Muncie Power Products PTO and installation kit

The HS24 power takeoff and installation kit from Muncie Power Products, in partnership with Hino Trucks and Allison Transmission, features modifications to accommodate Hino's 338 Series of trucks and Allison 3000 Series transmissions. A sculptured housing enables the power takeoff to clear obstructions for easy mounting on the Hino chassis. A smaller overall housing enables the power takeoff to be mounted on other 10-bolt applications. The PTO has a drop-in shift solenoid and clutch shift design with torque ratings from 325 ft-lbs. **800/367-7867; www.munciepower.com.**

(continued)

This Issue's Feature:

HammerHead Sidewalker redesign adds convenience, power and speed

BY LUKE LeNOBLE

The Sidewalker piercing tool from HammerHead Trenchless Equipment is designed for installing short utility runs beneath landscaping, driveways and sidewalks.

Upgrades to the 2 1/2-inch and 3-inch models have increased efficiencies in design and pneumatics, including the quarter-turn Power Port Reverse feature that boosts impact power by up to 25 percent. The 3-inch Sidewalker has a uniform profile along its entire length, increasing striker size.

"The models that these tools replace in our previous fleet are tools that were 'bulbed,'" says Josh Hood, product manager for HammerHead. "This means that the previous tools were small tools with a larger-diameter bulb on the backside of the tool. A new 3-inch Sidewalker tool has the power of a 3-inch tool versus the power of a 2 1/2-inch tool with a bulb."

The tools are designed for contractors who typically do short shots, such as small irrigation or water services with minimal pit dimensions. They have traditionally been used to install 3- to 20-foot underground runs of gas, water and other utility lines in tight urban areas.

Since the tools' body lengths are just under 34 and 42 inches, they require

working pits up to half the size of standard-length piercing tools.

"Because of the significant reduction in length, it makes it a great tool for driveway and sidewalk crossings as the pit required to launch the tool can be reduced by as much as 30 percent," Hood says. "The longer a tool is, the more accurate the shot will be as there is more surface area that maintains the path, hence the fact these tools are for short shots."

Shorter tools tend to have less overall power than longer tools as the stroke of the internal piston is shorter and has less mass, Hood says. The Sidewalker overcomes that issue by increasing the strokes per minute by as much as 40 percent.

The piercing tools, which operate at 110 psi, include the Debris Free Tailcone, decreasing the amount of foreign matter entering the tool body, increasing overall production and extending the life of the tool.

As with all HammerHead models, a clamped rear anvil provides 200 percent more clamp load than other designs yet makes the tools easy to maintain.

800/331-6653; www.hammerheadtrenchless.com



Sidewalker from HammerHead Trenchless Equipment

THE LATEST:

Products

13



14



15



13. Perma-Liner main-to-lateral CIPP repair

The one-piece InnerSeal main-to-lateral CIPP repair from Perma-Liner Industries completely seals the connection while renewing the lateral. The repair system was designed using the standard practice for the rehabilitation of sewer service laterals — ASTM F2561-11. **866/336-2568; www.perma-liner.com.**

14. Snap-on drive extensions

Williams Flexensions drive extensions from Snap-on Industrial Brands are designed for hand and power tool use by technicians who work with engine and heavy-equipment manufacturing, assembly and repair. Features include a black oxide finish, TIG-welded socket retention pin that provides full rotation power to the socket, a 7/32-inch cross hole and bevel drive end. The extensions are available in a variety of SAE and metric socket sizes and lengths in both 1/2-inch and 3/8-inch square drives. **800/446-7404; www.snaponindustrialbrands.com.**

15. Hot Jet USA trailer-mounted jetter

The Hotjet III trailer-mounted water jetter from Hot Jet USA features 20 gpm of hot or cold water at 3,850 psi and runs on two 35 hp Vanguard engines. It is designed to clean lines from 2 to 24 inches in diameter. Features include a wireless remote with a range of up to 300 feet, 500 feet of 1/2-inch hose, 300 feet of 3/8-inch hose and 100 feet of sanitary hose; 1/4-inch line is included for laterals. The jetter is available with a 300- or 660-gallon water tank and a 5- by 14-foot tandem axle, diamond-plate trailer. **800/624-8186; www.hotjetusa.com.** ▼

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Happenings

CALENDAR

March 8-10

Common Ground Alliance (CGA) Excavation Safety Conference & Expo; The Mirage, Las Vegas; www.cgacconference.com.

March 10-12

NUCA 2016 Annual Convention; El Conquistador Resort, Fajardo, Puerto Rico; www.nuca.com/convention.

March 14-17

National Demolition Association; Orlando World Center Marriott, Orlando, Florida; www.demolitionassociation.com.

March 15-18

AEMP 34th Annual Conference; Royal Sonesta Hotel, Houston; www.aemp.org.

March 20-24

NASTT's No-Dig Show; Gaylord Texan Hotel, Dallas; www.nodigshow.com.

March 31-April 2

Mid-America Trucking Show; Kentucky Expo Center, Louisville, Kentucky; www.truckingshow.com.

April 22-28

World Tunnel Congress (WTC); The Moscone Center, San Francisco; www.wtc2016.us.

May 23-26

National Utility Contractors Association (NUCA) Washington Summit; Washington, D.C.; www.nuca.com.

June 5-8

Electric Utility Fleet Managers Conference (EUFMC); Williamsburg Lodge and Conference Center, Williamsburg, Virginia; www.eufmc.com.

June 26-29

ASSE Professional Development Conference & Exposition; Atlanta; safety.asse.org.

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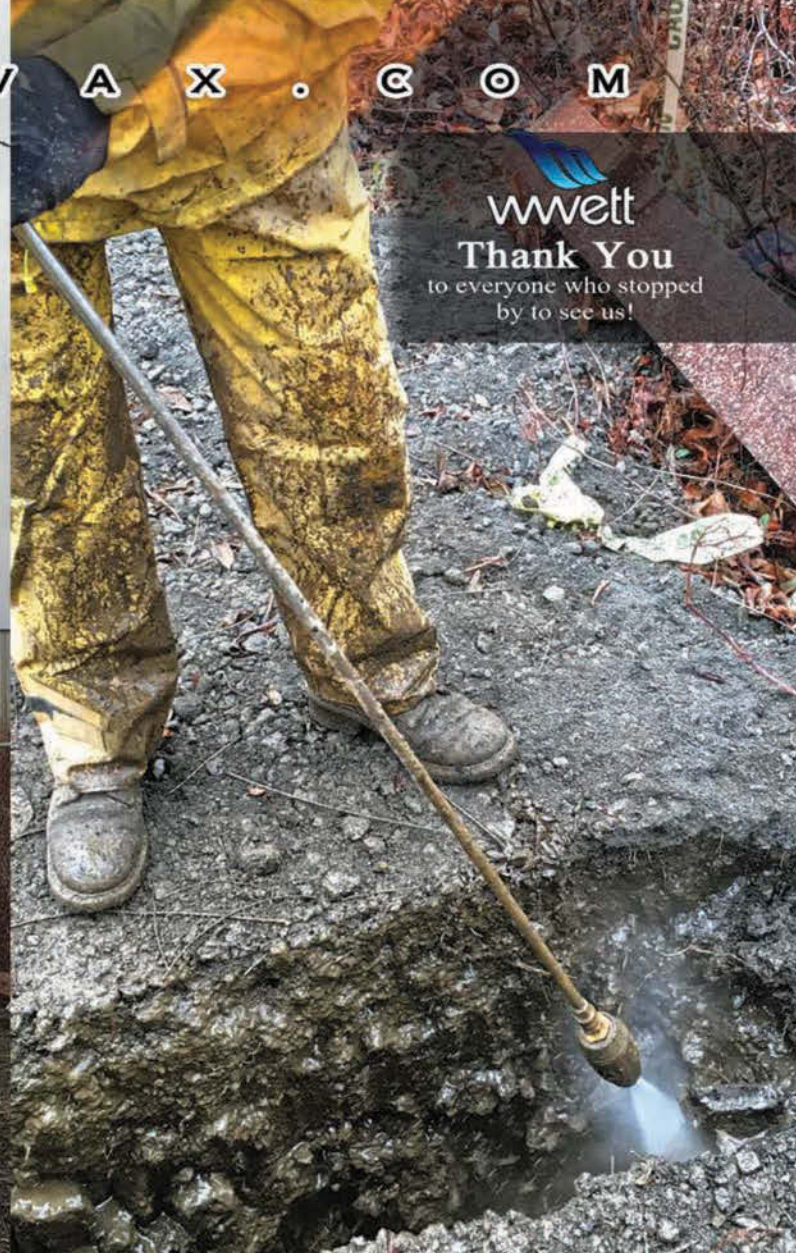
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