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APRIL 2018

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Frank Arias, an operator for Horizontal Boring, runs a 36-inch auger boring machine from American Augers on a job under the Beardsley Canal in Surprise, Arizona. The Arizona-based company operates throughout the U.S. Southwest with 45 employees, offering services in tunneling, auger boring and directional drilling. (Photography by Mark Henle)



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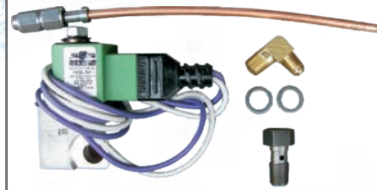
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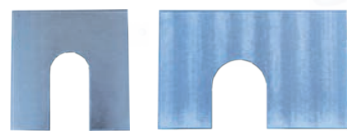
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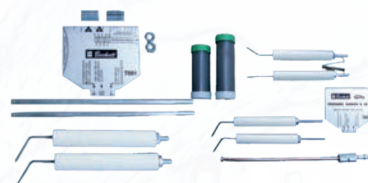
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**WE ALL KNOW YOUR CREWS LOVE TO TALK ABOUT JOBS THEY'VE HANDLED — WHETHER IT BE BECAUSE THE JOBS WERE TOUGH OR JUST REALLY DIRTY, THEY LOVE TO BRAG ABOUT THEM.**

## Talking Tough

**SHARING A STORY ABOUT A JOB YOU'VE HANDLED COULD HELP OTHER CONTRACTORS IN SIMILAR SITUATIONS**

BY CORY DELLENBACH

**T**he first three months of 2018 have already come and gone, and the busy season is gearing up for the industry. Are you rejuvenated and ready to go full speed ahead in the coming weeks?

I know I'm ready to continue bringing you stories and information on the trenchless world, especially after attending the North American Society for Trenchless Technology's No-Dig Show in March in Palm Springs, California.

I always enjoy attending this show because it's slightly different than the other shows I attend. Yes, there is an expo showing technology in the industry, but this show is heavily focused on education and case studies.

### HEARING ABOUT THE TOUGH JOBS

One of my favorite things about the No-Dig Show is attending the sessions where contractors talk about a tough job that they've handled for a customer. I like learning about the challenges they faced, the equipment they used to fight through those challenges and the end result of the job.

Whether it is how King County (Washington) embarked on a large conveyance system upgrade that included a challenging HDD aspect; how HDD was used to install a new force main under Lake Meade in Virginia; or a pipe bursting challenge in the city of St. Catharines, Ontario, there are lessons that can possibly help those in attendance with a project that they are undertaking.

We try to do the same in our Down & Dirty feature. In this issue, we highlight a large directional drilling job

the city of Miami Beach, Florida, took on in 2016 to install a redundant sanitary sewer force main. The project took four months to complete, but it was over 4,000 feet in length and the pipe was 54 inches in diameter — making it one of the largest HDD jobs to be done. Crews looked at other options before settling on HDD to meet the budget.

If that isn't enough for you, check out our profile in this issue on Arizona-based Horizontal Boring. The company, owned by two brothers, doesn't shy away from taking on challenging jobs. They completed one last year where they used a 72-inch auger bore and went under a busy interstate. The company stayed on grade with the job by using a technique that was new for them.

### LET'S BRAG A BIT

We all know your crews love to talk about jobs they've handled — whether it be because the jobs were tough or just really dirty, they love to brag about them. And you know what? We love to hear about them too.

Has your company handled a tough job or a unique job that you'd love to talk about? Give me a call at 800-257-7222 or email [editor@digdifferent.com](mailto:editor@digdifferent.com) and tell me about the job.

Also, don't be afraid to send me photos from your job sites each day and tell me what you are doing. We might use them on social media, if you're lucky!

Enjoy this issue! ▼

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## TAKING FAMILY TIME

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Every business owner wishes for more hours in the day — for more time to grow their business and to get things done, but also for more time to relax, to enjoy the entrepreneurial life, and to spend time with family.

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## PREPPING FOR BUSY TIME

### Office Tasks to Finish Before Season Arrives

As a small-business owner, you know that a lot of things can fall through the cracks. One of the big ones is paperwork. Now is the time to make sure you are current on registrations, insurance and permits.

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## FINDING EMPLOYEES

### Training a New Generation of Workers


One of the biggest challenges facing the underground construction industry is finding skilled, quality employees to operate a company's expansive roster of equipment. It's not just vacuum excavation where it's hard to find qualified employees.

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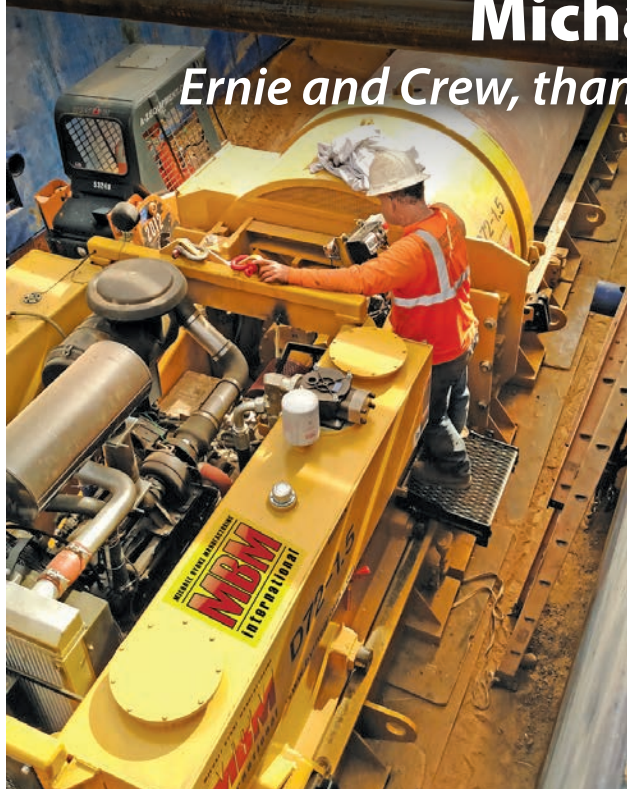
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# What Equipment did Horizontal Boring choose to cross the I-10... Michael Byrne Again!

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

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TUNNELING

*Profile*



**TUNNELING  
FORWARD**





## BROTHERS TAKE OVER FAMILY BUSINESS, EXPAND SERVICES AND GROW CUSTOMER BASE WITH NO PLANS TO SLOW DOWN

STORY: CORY DELLENBACH PHOTOS: MARK HENLE

**F**Ernie and Chris Romero believe in two things: making customers happy and having a strong family-relationship.

The brothers have been accomplishing both of those with Arizona-based Horizontal Boring, a company they took over from their father and uncle in the middle of a recession. They jointly run the company, specializing in tunnel and auger boring, but have plenty of help from their family.

In the seven years the brothers have owned the company, they've expanded the service area to most of the Southwestern U.S., have added services like directional drilling and opencut excavating, and the jobs have continued to get bigger.

"We could limit ourselves to just the auger boring and tunneling, but to us, our customers have needs and we really would like to serve them where they don't have to go elsewhere," Ernie says. "We can handle boring for them, tunneling, trenching and the directional drilling. We're here to serve them and give them what they need, and we really focus on that."

### A STRONG FOUNDATION

The company was originally founded in 1962 as Horizontal Boring & Tunneling, but Ernie and Chris' dad and uncle — Guy and Manuel — came to own it in 1981 after completing a job for the previous owner.

"Our father and uncle were already doing tunneling and boring for another outfit here in Arizona," Ernie says. "The owner of Horizontal Boring & Tunneling ran into a problem where they had a tunnel seized and were having a lot of trouble with it. The gentleman was ready to exit the business anyway and told my father that if he and my uncle could get that tunnel completed, he would give them a great deal on the business."

Guy and Manuel held control of the company through the 2008 recession but experienced tough times because

of it. The two were nearing retirement in 2010, and Chris and Ernie saw their opportunity to take over.

"We had a strong understanding of the industry and the positives and negatives, and I guess we were just real optimistic on what we could accomplish with it," Ernie says. "Even through the rough patch, there was still a need for trenchless work."

The two reorganized the business as Horizontal Boring.

"You always learn from the past, and that is something we really looked at," Ernie says. "We set the company up to withstand rough patches better and make sure the company doesn't fall on tough times again."

### A CLOSE FAMILY

Ernie and Chris don't have to go too far to find family; they just have to look around their shop. Working alongside the brothers are their three other brothers and one sister, plus extended family.

"We have uncles and cousins who work in the business with us," Ernie says. "We also have employees who have been with us 20-plus years who are like family to us."

## Horizontal Boring Laveen, Arizona



**OWNERS:** Chris and Ernie Romero

**EMPLOYEES:** 45

**SERVICES OFFERED:** Auger boring, tunnel boring, hand tunneling, directional drilling, potholing, traditional excavation, trenching

**SERVICE AREA:** Southwest U.S.

**WEBSITE:** [www.horizontalboringllc.com](http://www.horizontalboringllc.com)

Operator Frank Arias (center) checks to make sure a steel casing is level prior to starting a bore job under the Beardsley Canal in Surprise, Arizona. Helping Arias are Francisco Albares (left) and Alex Murrietta.

## It takes one of a kind

Crawling 500 feet through a tunnel 70 to 90 inches in diameter takes a certain type of person, but Horizontal Boring believes they have the right person — or 45 of them to be exact.

“Our employees are what we can’t work without,” says Chris Romero, co-owner of the Arizona-based tunneling, boring and directional drilling company. “You can’t get a job done without good guys, and we definitely value our employees. It takes everybody working as a team, and when it boils down to it, it’s those key guys out in the field that make this company go.”

While many of the company’s employees are family to Chris and his brother Ernie Romero, the other co-owner, the company also has several employees with 20-plus years and newer ones as well.

“When times are booming like this and you need specialty skills, it can be tough to find the right employee,” Ernie says. “You don’t have a lot of guys out there on auger boring machines or tunneling machines. It can be pretty difficult, and that’s why when you get good guys, you work hard to keep them.”

Before an employee even gets to operate the equipment, they’ve likely been at the company for multiple years.

“There’s a lot of things to understand before jumping on the machine,” Ernie says. “There’s a lot of in-house training involved when you hire new guys. Safety is the most important aspect here and then understanding all the elements involved.”

The company does a whole day of safety training once a month to make sure it’s on the forefront of employees’ minds. “It’s important to



Horizontal Boring is a full-family business owned by Ernie Romero (center) and his brother Chris Romero. Ernie is pictured here with two other brothers, Shaun Romero (right) and Guy Romero. One other brother, a sister, uncles and cousins also work at the company.

never take it for granted,” Ernie says. “Something could go wrong at anytime.”

That safety training needs to happen, especially with the equipment the crews are working with and the type of work being done. “There’s a lot of different aspects in this job when you’re crawling through small tunnels,” Ernie says. “You don’t find a lot of guys that are up for that. It takes a certain character.”

After growing up in the family business, the two brothers say they don’t know it any other way than having family involved.

“We all have different views and opinions at times, but I think we’re fortunate to be here,” Ernie says. “We work well together and enjoy it. Whether we’re working or we’re off and it’s family time, we’re still together. It’s really a blessing to be here and work with people you get along with.”

### TUNNELING AND MORE

Since the two brothers have taken over the company, they’ve added services to complement the tunneling and boring focus the company still holds. Horizontal Boring now offers directional drilling and potholing services, as well as traditional excavation and trenching.

“We’re doing more open excavating because that goes along quite a bit with some of the other work that we do,” Ernie says. “We’ve also expanded our tunneling and boring machine lineup because of advancements in technology.”

On the directional drilling side of the operation, the company runs Vermeer drills, while on the auger boring and tunneling side, a majority of the machines are American Augers, Michael Byrne, and Akkerman. Support

equipment includes a boring tunneling machine attachment made by Barbro and vacuum excavators from McLaughlin.

“On the auger boring side, we can bore as small as 8 inch in diameter and then as large as 84 inches,” Ernie says. “The tunneling machines can go anywhere from 48 to 96 inches and then our excavator shields can go up to 120 inches.”

Most of the work the company sees comes from the DOT. Currently crews are working on two projects with the Arizona DOT tunneling under freeways and one in Colorado going under a freeway.

“We’ve really seen the bores increasing in length and the tunnels increasing in length and diameter over the last few years,” Ernie says.

“We’re seeing more and more 500-foot bores coming up, whereas in years past, we’d be looking at 200- or 300-foot shots being the long ones. It’s incredible seeing what is being accomplished now.”

A big part of the longer tunnels and bores is thanks to the technology changes the company has seen, from steering capabilities of the machines to tracking of line and grade. “The technology has really improved,” Ernie says. “The companies are doing a great job with the technology on this trenchless equipment.”





Operator Frank Arias (right) operates a 36-inch auger boring machine (American Augers) while teammates Francisco Albares, center, and Alex Murrietta move soil on a job under the Beardsley Canal in Surprise, Arizona.

## HIGH-PRESSURE JOB

Horizontal Boring crews completed a job in 2017 for the Arizona DOT where technology played a big part in helping meet deadlines.

The company had to cross a busy interstate with existing underground structures. A 78-inch steel casing was being used for the bore, but they were only allowed 3 feet of cover in unstable soil conditions because of the existing structures.

“It was also an extremely tight schedule due to shutdowns and the schedule the general contractor was under to get that job completed,” Ernie says. “We were running seven days a week around the clock to meet deadlines.”

Three crews of four to five men worked in eight-hour shifts on the job site using a 72-inch Michael Byrne machine that was brought in specifically for the project. Ernie says once auger bores start getting larger than 72 inches, they get more difficult, but this time, the process was more practical than going with tunneling.

“It was really one of those pressure projects where if one thing goes wrong, it throws everything off,” Ernie says. “We had our share of issues that we had to jump on and overcome. You’re pushing a lot of pressure because you’re advancing that casing out into that material, so your pressure is building up and your line and grade are critical.”

To help keep the path on line and grade, Horizontal Boring crews used a new method to track it. Similar to how they track directional drills, crews inserted a sonde in front of the casing with a tracer sonde.

**“OUR EMPLOYEES ARE WHAT WE CAN’T WORK WITHOUT. YOU CAN’T GET A JOB DONE WITHOUT GOOD GUYS.”**

Chris Romero

Albares (right) and Murrietta shovel soil into a dirt bucket on a job under the Beardsley Canal in Surprise, Arizona. The company is safety-oriented and blocks off one day a month for safety training.





“It tracked back to our computer in our bore pit and enabled us to know right where grade was as we were drilling,” Ernie says. “It sped up our process, which allowed us to meet the scheduled deadlines.”

Ernie says they’ll use that technology — and others — again on future

jobs. “It saves us a heck of a lot of time, a lot of problems, and it allows us to be more efficient,” he says. “Without some of this technology, I don’t know if those types of jobs would be options for us. We like those big, difficult jobs. That’s where we learn and grow, on jobs like that.”

“WITHOUT SOME OF THIS TECHNOLOGY, I DON’T KNOW IF THOSE TYPES OF JOBS WOULD BE OPTIONS FOR US. **WE LIKE THOSE BIG, DIFFICULT JOBS.** THAT’S WHERE WE LEARN AND GROW, ON JOBS LIKE THAT.”

Ernie Romero

## DOWN THE RIGHT PATH

With seven strong years already in the business, neither Ernie nor Chris see themselves or the company slowing down anytime soon. “We’re going to continue on this trajectory that we’re on,” Ernie says. “We’ve been going a lot over the last few years in expanding.”

The two expect to see the directional drilling division expand, add additional machines to the fleet, and still add to the tunneling and boring fleet as technology improves. One of those new boring machines is already in use as the company is working on a project in Arizona where they are using a guided boring machine from Akkerman.

“This guided boring machine — it’s a tool we’re getting to use more of,” Ernie says. “As we implement some of this technology in our operations, we’re going to continue to see the growth as a company.” ▼

Francisco Albares (left) guides a steel casing into the bore pit for a job under the Beardsley Canal in Surprise, Arizona.

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Mike Morehouse, Owner  
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White Bear Lake, Minn.

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





# Tips for Maintaining Pneumatic Piercing Tools

## USAGE AND GROUND CONDITIONS REMAIN KEY INDICATORS FOR SCHEDULING MAINTENANCE

BY BRENDA SILVA

**W**hen it comes to extending the life of any tools and equipment used in construction, the importance of regular maintenance cannot be overstated. However, with products like piercing tools that are designed for durability, attention to maintenance is often overlooked as contractors focus on completing projects on schedule.

Because of this, minor replacements can become major repairs, and profits lost due to repair downtime can end up boring into your bottom line.

### WHAT CONTRACTORS SHOULD KNOW

With new responsibilities added to their to-do lists every day, even contractors can forget things from time to time. However, industry professionals are eager to remind contractors about the most important things to remember when it comes to the maintenance of piercing tools.

“Piercing tools are some of the most durable pieces of trenchless equipment,” says Chris Brahler, president and CEO at TT Technologies. “That also makes them a prime candidate for neglect. I often think because the tools are so durable that it becomes easy to forget about maintenance. They get tossed around, thrown in and out of the backs of pickup trucks.”

Brahler says small things can extend the life of a tool.

“Replacing the whip hose is one example,” Brahler says. “Often that hose is used as a handle for the tool. That will limit the life of that particular piece of equipment. Also, maintenance depends on the amount of usage. If tools are working a lot, more regular maintenance will be required. But we’ve had customers that have 15 or 20 years’ use on their piercing tools and they’re still going.”

**“PIERCING TOOLS ARE SOME OF THE MOST DURABLE PIECES OF TRENCHLESS EQUIPMENT. THAT ALSO MAKES THEM A PRIME CANDIDATE FOR NEGLECT.”**

Chris Brahler

Ben Ferguson, sales manager at Footage Tools, offers four items that contractors should focus on for the best maintenance of pneumatic piercing tools: “regularly scheduled maintenance, depending on amount of use and/or undesirable ground conditions; proper lubrication to prevent unnecessary wear and to ensure proper tool operation/performance; don’t drive over compressor hoses; and don’t use compressor hoses as pulling devices to remove stuck tools.”

Making regular maintenance even easier for contractors to schedule, Ryan Ley, service manager at HammerHead Trenchless, points out additional benefits to his company’s tools. “All HammerHead Moles can be serviced on the back of a truck while at the job site,” he says. “In a matter of minutes, the tool can be disassembled, serviced and thus renewed to perform like new again.”

### WHAT CONTRACTORS TYPICALLY FORGET

While many contractors are proactive with regularly schedule maintenance,



A contractor uses a Big Shot pneumatic piercing tool from Footage Tools on a job site. While piercing tools are some of the most durable pieces of equipment in the trenchless industry, contractors should still perform regular maintenance on them.



A contractor sets up a HammerHead Trenchless pneumatic piercing tool on a job. Manufacturers say the best things to remember when it comes to the tools are to clean it, lubricate it and store it correctly.



nance on pneumatic piercing tools, there are still some things that have a tendency to fall by the wayside. As such, any maintenance performed only addresses some of the issues for concern, whereas a more thorough maintenance could prevent additional problems that may prove costly later.

“Most commonly, they forget to keep them lubricated,” Brahler says. “Many pneumatic tools, including piercing tools, need to be lubricated during operation. Checking the lubricator before operating the tool is a good idea to help make sure things keep running smoothly. Petroleum-based lubricants are very common and perform well in warm weather. Biodegradable lubricants are also common and perform exceptionally well in cold weather.”

Brahler adds that it’s the same in many ways to running your car engine without oil.

“It’s not going to last very long,” he says. “Keeping tools properly lubricated helps them perform at their best in the field and keeps them in good working condition when they are stored. Proper storage is a key component of tool maintenance. Storing tools inside is better than outside. Either way, tools need to be lubricated before storage too. When not in use, they can rust like anything else, especially if they are stored outside.”

Ley agrees that lubrication is a key factor to remember as part of a maintenance program, and he suggests it’s one of three main items typically forgotten by contractors:

- **Cleaning** — The piercing tool is not cleaned after each use.
- **Lubrication** — The oiler is not adjusted correctly for the piercing tool size, or the oiler is simply out of oil.
- **Storage** — When storing or transporting the piercing tool, they are often stored dry and left open to the elements in the back of a truck.

One other item contractors often forget, according to Ferguson, is compressor maintenance on a regular basis.

### WHAT DO MANUFACTURERS RECOMMEND?

As important as maintenance reminders are from industry professionals, it’s also just as important to know what the equipment manufacturers recommend as part of a regular maintenance schedule. Along with servicing as per the manufacturer’s instructions, it seems nothing beats a really good cleaning to ensure extended life of the products.

“Depending on the amount of usage, pull them out of the field once a year and clean them out thoroughly,” Brahler says. “This consists of flushing the tool with a cleaning agent. In the past, diesel fuel was commonly used as the cleaning agent. But today, many contractors use our environmentally friendly, biodegradable lubricant to clean their tools. It’s simply poured into the air hose, and then the tool can be run above-ground until all the debris is out. The flushing procedure may need to be repeated several times. But afterward, a quick wipe down and the tool is ready for storage.”

Ley, likewise, notes the important of regular cleaning of tools — as well as prior to storage — as per manufacturer’s recommendations.

“Clean the Mole: With the piercing tool lying on the ground, turn the air on to allow the striker to hit in both directions for a few seconds,” Ley says. “This allows dirt and debris to exit out the rear of the piercing tool. Lubrication: During operation, the piercing

tool should exhaust a light mist of oil, which coats the whip hose. If the oiler isn’t adjusted correctly or the oiler is out of oil, the whip hose will be dripping with oil (wasting oil) or dry (jeopardizing performance).”

Ley adds that with storage, the tool should be oiled by pouring a few ounces down the whip hose and tipping the tool side to side, allowing the striker to move the oil throughout the inside of body. Placing a gel cap over the end of the hose will prevent dirt and moisture from entering the tool during storage.

Contractors who pay close attention to regularly schedule maintenance of pneumatic piercing tools will see the greatest return on investment and benefit the most from their performance and long life. The unappealing alternative for forgetful contractors is pricey repairs and replacements that can dig themselves deep into equipment budgets and company bottom lines. ▼

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# The Long Haul

## A CONTRACTOR AND CITY TAKE ON A RISKY, LONG DIRECTIONAL DRILLING PROJECT TO SOLVE A SANITARY SEWAGE FORCE MAIN PROBLEM

BY CORY DELLENBACH

**A**t the risk of having millions of gallons of sewage dumped within the city, officials in Miami Beach, Florida, knew they needed to come up with a solution to a pipeline showing its age.

A consultant informed the city that a 54-inch prestressed concrete cylinder sanitary sewage force main constructed in 1977 had points of potential failure. The reinforcing wires within the pipe carrying wastewater from Miami Beach to the county's Virginia Key Treatment Plant were corroding and breaking.

In 2013, the city used a PipeDiver inspection tool (Pure Technologies US) to analyze the force main. The analysis determined that the line was on the verge of catastrophic failure. If it were to rupture, the sewage would not only flow into city streets, but also to cities farther south and eventually into the ocean.

"We were at the risk of having millions of gallons of sewage dumped in the city and with no place to go," says Bruce Mowry, city engineer. "It was identified that this was a single point of failure concept, and we needed to put a redundant pipeline in. We needed to do this to get reliability and to allow us to do maintenance on a pipeline that had questionable integrity issues."

In just four months in 2016, the city and contractors installed a 54-inch HDPE pipeline using directional drilling to serve as the backup force main for when the old one would go offline for repair and cleaning.

### NO TUNNELING HERE

City officials first approached the idea of using tunneling to install the new pipeline. A consultant working with the city said that could be accomplished for \$10 million.

"After we secured the funding, we went out on the market to see which firms could actually do that," Mowry says. "Firms submitted proposals, and when we opened the envelopes, we found that the project was 50 percent over budget. That put us in a little bit of a predicament in that we had a critical project that needed to move ahead, we had funding and we were short in terms of the actual cost of doing the job."

The next step was to look at alternative installation methods.

"The commission gave us the authority to do this as long as we met the original objectives of the job," Mowry says. "We could not shorten the pipeline, reduce the capacity or impose a technology that would give us a shorter life cycle. As long as we could achieve those, then the commission was open to allowing us to do it."

With the 54-inch HDPE pipe attached to the drill, crews from David Mancini & Sons and other subcontractors begin the pullback process on the 4,200-foot-long directional drilling job through Miami Beach, Florida.



**PROJECT:** Install a 4,200-foot-long 54-inch sanitary sewage force main using directional drilling

**CUSTOMER:** City of Miami Beach, Florida

**CONTRACTORS:** David Mancini & Sons, Spartan Directional, ISCO Industries

**EQUIPMENT:** D1000x900 directional drill (Vermeer; 641-628-3141; [www.vermeer.com](http://www.vermeer.com))  
2065 MegaMc fusion machine (McElroy; 918-836-8611; [www.mcelroy.com](http://www.mcelroy.com))  
PipeDiver (Pure Technologies US; 855-280-7873; [www.puretechltd.com](http://www.puretechltd.com))

**RESULTS:** The 54-inch force main was installed in four months with pulls of 3,000 feet and 1,200 feet. The city can now take the old main offline for repairs and cleaning and have a second pipeline available for emergencies.

**DOWN  
& DIRTY**



The 54-inch HDPE pipe sits in the middle of the roadway in Miami Beach, Florida, waiting to be pulled back.

That's when local contractor David Mancini and his team at David Mancini & Sons came in with the idea of horizontal directional drilling. A job of that size and length — a 54-inch pipe of over 4,000 feet — had never been done anywhere before.

### A CONFIDENT CONTRACTOR

David Mancini & Sons, based in South Florida, is familiar with the area's ground conditions having worked with Miami Beach on smaller projects. With this project, Mancini and his team drilled geotechnical holes throughout the route to confirm where the rock was and its consistency.

"What everybody didn't know was that for the last 15 years, I've drilled at least 10 jobs within a 5 mile radius," Mancini says. "I do soil borings to make sure that what I know is there really is there; and it was — a good layer of soil. I wasn't committed to doing it for the city for the lower cost or the drill method until a second set of soil borings confirmed my experience."

After evaluating ground conditions throughout the route, figuring out the depth the pipe needed to be, and other factors, David Mancini & Sons officials sat down and evaluated the risk before committing to the job.

**"THIS WAS PUSHING THE ENVELOPE OF WHAT HAS BEEN TRIED AND PROVEN. WE WERE BASICALLY DOING SOMETHING THAT SOMEBODY HADN'T ALREADY DONE."**

Bruce Mowry

"He knew he needed to do his homework," Mowry says. "He needed to take time, not to rush into it. He needed to develop a very solid plan, and he needed to have a team that had all the necessary experts in all the areas."

### PUTTING IN THE PIPE

Mancini chose 54-inch IPS DR-17 HDPE pipe because its low life-cycle cost and its lightweight and ductile properties made it the ideal material for HDD.

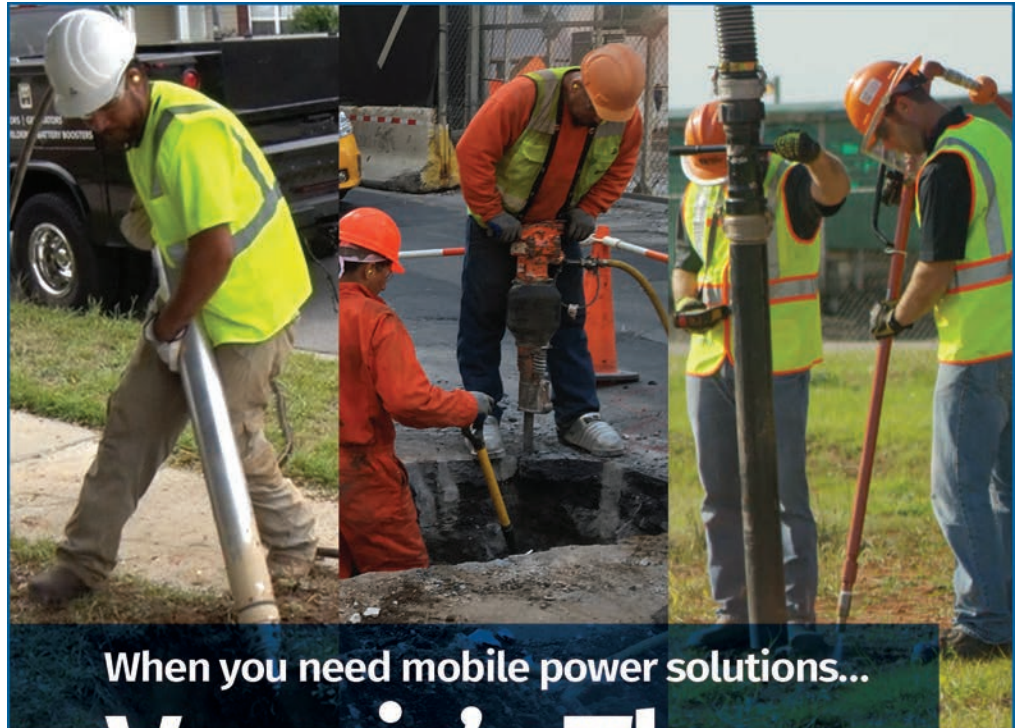
"The first thing we did was to make sure the entry hole was clean," Mancini says. "That's the biggest mistake most drillers make: They don't clean the hole. We manifested every load of dirt that came out of the trench, so we had the right amount of dirt out of the hole."

The new pipe was pulled in two segments using a 1-million-pound pullback Vermeer D1000x900 directional drill. A dual-string approach had two runs of pipe being fused and positioned in the center of the roadway. The pilot hole went down to 40 feet, leveled out and maintained that depth to the exit point.

"We were intersecting a pilot hole with monitoring holes just to double-check that we were on line and grade," Mancini says.

He typically doesn't do that type of soil bore testing on all jobs.

"This was pushing the envelope of what has been tried and proven," Mowry says. "We were basically doing something that somebody hadn't already done. In the carpeting business, you say measure twice, cut once. Well, in this industry, David wanted to confirm



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Crews from David Mancini & Sons and subcontractors move the 54-inch HDPE pipe into place for the pullback using a John Deere excavator.

**“ABSOLUTELY I’M READY FOR THE NEXT ONE. I TRULY BELIEVE IT WAS THE TEAM THAT MADE IT SUCCESSFUL AND NOT ONE INDIVIDUAL.”**

David Mancini

forth,” Mowry says. “We had identified things like pedestrian corridors and even built a staircase over the pipes on top the ground to allow easier pedestrian traffic. When you’re talking about pipes that are running over 1,000 feet long, it’s sometimes not easy to say, ‘Go to the end of the pipe, go around and come back.’”

Cooperation was also needed when it came time to pull the pipe back over the highway it would intersect. Crews determined the best time to shut down the highway for the pullback overnight.

“There was a lot of communication between David Mancini & Sons, the city, law enforcement and the

Department of Transportation to make sure alternative routes were set up,” Mowry says. “We couldn’t just lift this pipe like a bridge and allow cars to drive under it because it was so heavy. Everyone did their part, and it went smoothly.”



Segments of the HDPE pipe being put in at Miami Beach, Florida, rest on top of shoring devices to help it get the correct angle heading into the pullback hole.

## PUTTING THE PIPE TOGETHER

The pipe fusion on the project was done with a McElroy MegaMc 2065 fusion machine operated by a certified technician from subcontractor ISCO Industries. The highlight of the fusion operation was joining the two strings of 3,000 feet and 1,200 feet of pipe during the pullback process.

“All the welds to the pipe were more difficult than I imagined,” Mancini says. “We had to do one weld on the fly, and it took the tech almost seven hours to feel comfortable to make that weld. Between getting it lined up, getting the weights right, getting the forces right, and everybody there, it was stressing him out. I was watching it, and I told everyone to just leave him alone because that was the most important part of this whole job, making sure the weld was done right.”

## THE NEXT STEP

David Mancini & Sons and its subcontractors — Spartan Directional and ISCO Industries — had the job completed in March 2016, just four months after starting.

“The pipe is now in operation, and it’s performing well,” Mowry says. “We haven’t taken the other one fully out of service and cleaned it yet, but we know now that we have a system that will work. We have one brand-new pipe that we have a high level of confidence in, and one that has weak points in it but is available to us.”

The next step for the city will be to take the old force main out of service and repair it. Mowry says the city will look at all available repair options from spray-in pipes to replacing sections of the pipe.

“There are a lot of new technologies out there right now,” Mowry says. “We’re not rushing into that at the moment because we have a new system in place and we have other things going on in the city.”

Meanwhile, Mancini and his crews are ready for the next big project and want to try a longer pull: “I wanted to pull the full 4,200 feet at one time on this project, but they wouldn’t let me. Absolutely I’m ready for the next one. I truly believe it was the team that made it successful and not one individual.” ▼

pilot holes and test results three times before he ever started committing because it was putting his company on the line. A job like this, if it goes bad, could have huge impacts.”

Mancini also monitored the tailings to make sure the drill was in the right layer of soil. “We were out there with a fish net, washing the fines out, just making sure it was the right layer — no sand, all rock — during the pilot,” Mancini says. “It’s a lot of TLC.”

## WORKING THROUGH OBSTACLES

The work took place in the middle of the community of 90,000, which posed some challenges. “This is a highly developed area,” Mowry says. “These streets are fully populated, and we went through business areas and residential areas with the project.”

The route city officials selected for the pipeline — along a wide right-of-way — provided several benefits. The street had a boulevard where crews could work and stage materials, leaving lanes open on both sides to allow continued traffic flow.

“We had a public information officer on the job who was there to send out updates, talk with different communities, meet with the neighbors and so



## THE LATEST: News

### McLaughlin announces new East Coast regional sales representative

McLaughlin announced the addition of Tim Ross, regional sales manager for its East Coast territory. In his new role, Ross will provide sales support and expert advice for McLaughlin equipment dealers and contractors throughout the region.



Tim Ross

### Parent company of Liberty Financial division of Navitas Credit Corp. signs merger agreement

The parent company of Liberty Financial division of Navitas Credit Corp. signed a merger agreement with United Community Bank. Navitas will operate as a subsidiary of United Community Bank, and the current management team will continue to lead the organization.

### Felling Trailers names new sales manager

Felling Trailers announced Nathan Uphus as its new sales manager. He joined the company in June of 1999 and progressed through various production and sales positions. Most recently, he was a territory manager in Tennessee, where he helped expand the dealer network in the Southeast. As sales manager, he will relocate back to Minnesota to take an active part in day-to-day operations at the company's Sauk Centre headquarters.



Nathan Uphus

### Hyundai Construction Equipment Americas names new vice president of distribution/marketing

Hyundai Construction Equipment Americas announced the appointment of Stan Park as vice president of distribution/marketing. He will be responsible for leading the teams in charge of building and supporting the company's growing dealer network and overall marketing efforts.

### Vanair announces new inside sales and customer service manager

Vanair announced William Lieske as its new inside sales and customer service manager. He comes to Vanair with 17 years' experience in providing customer support for an international inside sales department. Lieske will supervise the company's inside sales and customer service division.



William Lieske

### Ditch Witch announces updated Parts Lookup online tool

The Ditch Witch has released an advanced version of its Parts Lookup tool. It provides easy access to detailed parts information and a direct line of communication to dealerships for part verification and pick-list creation. Parts Lookup can find service parts by serial number, part name, equipment model or keywords. All equipment in a company's fleet can be added by serial number for easy reference to manuals, parts diagrams and future service parts needs.

### Continental ContiTech invests \$9.3 million in Nebraska plant

Continental ContiTech announced a \$9.3 million expansion of the rubber mixing operations at its industrial hose plant in Norfolk, Nebraska, to accommodate its North American manufacturing facilities by providing rubber for industrial hoses and whitewall tires for passenger cars. Construction work will be completed by the end of the first quarter of 2019.

### LaValley Industries welcomes new sales rep

LaValley Industries announced Rich Prosser as the company's newest horizontal directional drilling sales representative. He will be responsible for developing new market opportunities and bringing solutions to existing customers. Prosser previously worked at Vacuworx International and American Augers. ▼



Rich Prosser

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# Deadly and Avoidable Danger

## PREVENTING TRAGEDY FROM ELECTRICAL STRIKES IS ALL ABOUT PREPARATION

BY JARED RANEY

It can happen in an instant: A metal drill bit taps an electric utility line and deadly current arcs through the equipment, spelling catastrophe for the unlucky operator.

Electrical strikes are not the most common of excavation dangers, but are one of few that can produce immediate fatalities. Fortunately, there are steps operators can take — some basic, some more advanced — to protect against electrical strikes.

### EASY AS 8-1-1

This danger is real whenever a contractor works in the ground, but some services are more at risk than others. Topping that list is directional drilling.

“The primary safety issue you run into with the directional drills is always underground electrical strikes, having the tool from your equipment contacting a buried power line that either was mislabeled or the operator just didn’t know was there,” says Carl Osterhaus, manager of channel and technical product support for Toro, a drill manufacturer.

First and foremost, the most obvious preventive measure is locating utilities in the ground before doing any excavation.

“The major factors we look at are calling One Call (811), to get existing utilities located for the job site where excavation will occur,” says Alex Wagner, product safety and compliance engineer with Ditch Witch. “After existing utilities have been located, it’s imperative those locates are verified, usually by means of soft excavation.”

But locating isn’t a flawless process, and even after taking all the precautions possible, operators can still run into problems.

### PREPARE FOR THE WORST

There are a number of personal protective equipment options out there for operators, such as electrically insulated boots and gloves, as well as bonding mats. The best way to protect operators, though, is to incorporate protections into digging equipment.

“Electric strike systems are standard equipment on all Ditch Witch drills,” says Stacy Long, senior product safety and compliance engineer for Ditch Witch. “The system can detect when an underground electrical line has been struck and alerts the operators and bystanders when the strike has occurred.”

Ditch Witch and HammerHead Trenchless incorporate what they call ESID, or electrical strike identification devices, into their products.

“Basically it grounds the operator to the machine,” says Josh Hood, product line manager at HammerHead Trenchless. “Let’s say we hit a line, or even come close to an electric line, it can actually alarm you and let you know that



Electrical strike systems are an ISO requirement for drills. Toro uses a system called ZapAlert.

PHOTO COURTESY OF TORO

**“AFTER EXISTING UTILITIES HAVE BEEN LOCATED, IT’S IMPERATIVE THOSE LOCATES ARE VERIFIED, USUALLY BY MEANS OF SOFT EXCAVATION.”**

Alex Wagner

you’ve made contact. And it will sense how much power the machine is seeing. The operator can be touching the machine — doesn’t matter. As long as he stays on this mat, he’s protected.”

Electrical strike systems are an ISO requirement for drills, and Toro uses a similar system called ZapAlert.

“We spend a lot of time also making sure that the machines are just as safe as they can be from an operator’s standpoint,” Osterhaus says. “We have a lot of effort put into what can we do that if the machine is used properly but also, if somebody takes a shortcut, what can we do to the machine to make sure that even though they took a shortcut, they still don’t get in trouble.”

### SAFETY IS THE FUTURE

Preventive measures are all well and good, but the industry is also trending toward new services and technologies that seek to avoid the danger altogether.

One such service that HammerHead Trenchless invested in is gas-slitting technology. Similar to pipe bursting, the gas utility replacement method avoids



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excavation and new drilling altogether — and for the most part, significantly lessens the likelihood of electrical strikes.

“By using the same-path technology, your chances of having an electrical strike or something of that nature are greatly reduced because you’re not putting a new hole in the ground,” Hood says.

The danger isn’t eliminated, as Hood notes that sometimes operators will run into a situation where the electrical line was laid in the same trench as a gas utility.

Another technology that does in fact eliminate the danger, if used properly, is remote operation.

“On our latest winch, we actually have a radio remote control, so the operator can fully function a winch without ever touching it,” Hood says. “So, though we did use the ESID on it too and he’ll still know if power came to it, if he’s not touching the winch, the alarm will still go off but he’ll be safe because he’s using a radio remote.”

### PROMOTING AWARENESS

While there are many methods to protect workers from the dangers of electrical strikes, the most important thing is simply recognizing the danger is present. After that, a little preparation goes a long way.

In addition to their safety solutions, Ditch Witch, HammerHead Trenchless and Toro all offer safety training on their equipment through their dealerships.

Ditch Witch SAFE is an online module offering education and training resources, including a certified training program. Ditch Witch follows the Common Ground Alliance best practices, among other industry safety resources, which can also be found on their safety website, [www.ditchwitch.com/safety](http://www.ditchwitch.com/safety).

“Luckily it isn’t something that you hear of very often,” Osterhaus says of electrical strikes. “There’s always the issue — the concern about striking an underground utility.” ▼



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# TOOLS FOR GROWING

INVESTMENTS IN A WIDE ARRAY OF ADVANCED EQUIPMENT AND MACHINES FUELED TEXAS CONTRACTOR'S EXPLOSIVE GROWTH

STORY: KEN WYSOCKY PHOTOS: CORY JONES

**D**arrin Black has parlayed his one-man shop into a company with eight locations in West Texas on the strength of one basic operating philosophy: Invest in as many different kinds of equipment as possible.

The way the 51-year-old master plumber sees it, the more kinds of equipment his company owns, the more services he can offer. And the more services he can offer, the more likely it is that he can get a foot in the door with customers. And if he provides great service along the way, those customers will call again when they need something else.

Black had no grandiose plans of becoming a regional player in the plumbing and drain cleaning market when he founded Black Plumbing in Abilene, Texas, in 1994. Since then, the company has evolved from primarily doing drain cleaning and plumbing installations and service work to a well-diversified firm that also does sewer inspections, water jetting, pipe lining, hydroexcavating and pipe bursting.

The approach, combined with a keen eye toward marketing and branding that includes distinctive, camouflage-wrapped service trucks and advertising via billboards, radio, and television, has served Black well. As a result, the once-tiny company has now amassed a fleet of equipment — including 25 service trucks, trackhoes, trailer jettors, hydroexcavation units and various inspection camera systems — that's worth about \$2 million.

"My philosophy is that if you don't offer that one service that a certain customer might need, you won't get your foot in the door — they'll just call someone else," says the plain-spoken Black. "And if you don't offer all those services, eventually someone else will. So why shouldn't it be us?"

As a case in point, Black points to a large pipe lining job his company performed at a local U.S. Air Force base, using cured-in-place pipe technology. After the company proved its mettle, about \$750,000 in additional work soon followed. "Had we not offered CIPP,



**“CUSTOMERS KEEP COMING BACK BECAUSE FOR YEARS AND YEARS, WE’VE KEPT DOING EXACTLY WHAT WE SAY WE’RE GOING TO DO.”**

Darrin Black

we wouldn’t have worked there at all,” he notes. “But once we were on site, it was more convenient for them to let us do the additional work.”

There’s another reason for his multiservice mindset: The bigger the company gets, the more obligation he feels to provide ongoing work for his 56 employees and the families they support. Or as he puts it, “Once you create this monster, you have to keep feeding it. As a business owner, I have to create opportunities for more and more work for these guys.”

Moreover, there’s a lot of competition in the markets the company serves. Black estimates there’s anywhere from 120 to 150 plumbers in the eight communities where the company has established a shop. As such, Black has always felt the need to establish market niches that differentiate his company from the rest of the pack. Furthermore, he has many employees who embrace new technology, so it’s beneficial to keep those employees engaged and excited.

“Some guys don’t want anything to do with it,” he says. “But there’s a whole group of guys that do. So if they’re willing to invest time and energy in offering those services, then we need to do it.”

#### **CALCULATED RISKS**

In some instances, Black takes an if-you-buy-it, they-will-come approach in which he invests in new technology, even if there’s no immediate need



Jason Sherman uses the wand of the Ditch Witch FX30 hydrovac trailer unit to break up the ground during a job in Abilene, Texas.

## **Black Plumbing Abilene, Texas**



**FOUNDED:** 1994

**OWNER:** Darrin Black

**EMPLOYEES:** 56

**SPECIALTIES:** Drain cleaning, service plumbing pipe lining, pipe bursting, pipeline inspections, sewer cleaning and hydroexcavating

**SERVICE AREA:** Roughly a 120-mile radius around Abilene

**WEBSITE:** [www.blackplumbing.com](http://www.blackplumbing.com)



for it. The expectation is that someone will eventually ask for it somewhere down the line. Isn't that a big gamble? "You're right about that," he says. "But it's a calculated gamble."

As an example, consider the two customized hot-water jetters Black bought in 2008 from Hot Jet USA for roughly \$30,000 apiece. Each unit features a 500-gallon water tank, 650,000 Btu boiler, 600 feet of 3/8-inch-diameter hose and a water pump made by Giant Industries (3,600 psi at 8 to 10 gpm). Black says it took two to three years before steady demand developed for the two jetters.

"Now we have four hot-water jetters, and they all run every single day," he says. The other two units are PipeHunter jetters from Texas Underground. They feature 500-gallon water tanks and Giant Industries water pumps (3,600 psi at 10 gpm). "We also invested in HammerHead Trenchless HydraLiner technology (for rehabbing sewer laterals), and it took two or three years before that market kicked off," he adds. "Now we do pipe



Darrin Black, right, owner, along with his son, Chris, and his grandchildren, Maverick and Presley, shown in front of the company office.

## Marketing campaign makes impression

Darrin Black claims he's no marketing guru. But he says he knows at least one important thing about advertising: Never stop doing it.

So far, so good. Since 1994, when he established Black Plumbing in Abilene, Texas, the company has expanded into seven other communities. And a clever, multifaceted marketing campaign with an effective branding component has played a key role in that dramatic growth.

Black says he's been running television ads for more than 20 years. And he also relies on radio advertising, billboards, a company website and Facebook to make his company highly visible to potential customers. "We spend around 5 percent of our annual revenue on advertising," he explains. "From my standpoint, if you're a business owner and have employees, it's your responsibility to not build a business just on word-of-mouth referrals. You owe it to your employees to advertise — get your name out there with a consistent message."

How did he develop an integrated marketing program? "I just stumbled into it, brother," he says. "I tell people I'm no marketing genius. I just use good, practical common sense. It doesn't take a genius to figure out you have to be active in your community and advertise. Advertising tells people that you're a legit, professional outfit."

Arguably the most effective facet of the company's marketing efforts is a jingle used in radio and television ads that sticks in people's heads like an earworm. (To hear the jingle, visit the home page at [www.blackplumbing.com](http://www.blackplumbing.com) and click on the video link.) "It's a real catchy

jingle," Black notes. "The funny thing is I run into adults all the time who see my Black Plumbing jacket and they sing the last verse for you: 'Call on Black Plumbing, help is on the way.'"

The jingle was written by Baker & Co. in Nashville, Tennessee. The jingle-writing service was a promotional bonus included in a TV advertising package that Black purchased 21 years ago.

It also doesn't hurt that Black's young, cute-as-can-be grandson, Maverick, has played a starring role in commercials for years and lately has been joined by his younger sister, Presley. "Maverick just might be the most famous 7-year-old in Abilene," Black says.

Moreover, the company's service trucks feature black, gray and white camouflage-pattern vinyl wraps. "It's something I started seven or eight years ago," Black says. "It seems to me that every time you see a utility-bed truck, you don't know who it belongs to — they're always white. I wanted people to know who we are. It's amazing how that camouflage catches people's eyes."

Does Black Plumbing do any kind of monitoring to measure the effectiveness of the various marketing efforts? Not really, Black says. "We don't really need to track what we're doing," he asserts. "People come up to me all the time to talk when they see my Black Plumbing jacket. And the phone rings all day, knock on wood. We get anywhere from 40 to 75 calls a day. So I know things are working."



**“MY PHILOSOPHY IS THAT IF YOU DON’T OFFER THAT ONE SERVICE THAT A CERTAIN CUSTOMER MIGHT NEED, YOU WON’T GET YOUR FOOT IN THE DOOR — THEY’LL JUST CALL SOMEONE ELSE. AND IF YOU DON’T OFFER ALL THOSE SERVICES, EVENTUALLY SOMEONE ELSE WILL. SO WHY SHOULDN’T IT BE US?”**

Darrin Black

lining all the time. It may take two months, or it may take two years, but it’s always just a matter of time.”

In addition, Black Plumbing has invested in two small hydroexcavating units made by Ditch Witch. One of the two FX30 models carries an 800-gallon spoils tank and a 300-gallon water tank, and the other features a 500-gallon spoils tank and a 200-gallon water tank. They both use pumps made by Interpump Group (3,000 psi at 4.2 gpm).

For drain cleaning and plumbing service work, Black Plumbing runs 25 GMC and Chevrolet utility-bed pickups. The drain cleaning trucks carry three RIDGID drain cleaning machines: a K-60, K-75 and K-1500. All the trucks carry a pipeline inspection camera; they’re made by RIDGID, Radiodetection and MyTana Mfg. In addition, the company relies on eight Kubota trackhoes; two Kubota skid-steers; and flatbed trailers made by PJ Trailers, Big Tex Trailers, Bruton Trailers, and Load Trail.

Of course, investing in all that technology is expensive. Affording all that equipment hinged on establishing a great relationship with a local bank. “We have a heck of a banker,” Black says. “You’ve got to have a good financial backer — no doubt about it. But the size of our company and the revenue it generates allows us to pay cash for things from time to time, too.”

Black Plumbing operators Jason Sherman (left) and Randy Allen use a Ditch Witch FX30 hydroexcavation trailer to perform a hydroexcavation job for the Raising Cane’s construction site in Abilene, Texas.



## FIREFIGHTING MEETS PLUMBING

Black took a circuitous route to becoming a full-time plumber and drain cleaner. After graduating from high school in 1984, he worked for a plumbing wholesale house in Abilene. About four years later, he joined the Abilene Fire Department as a full-time professional firefighter. He worked a one-day-on,

Cole Sisco, uses a concrete saw to open up a sidewalk portion at the start of a job.





two-day-off schedule. On his off days, Black did plumbing work, earning a journeyman's license in 1992 and achieving master plumber status in 1994 — the year he established Black Plumbing.

In 2013, Black retired from firefighting to run Black Plumbing full time. "It got to the point that the plumbing business got too big to manage part time," he explains. "I was needed more here than they needed me at the Fire Department." In 2008, Black's son, Chris, joined the company. He's also a mas-

## **"ONCE YOU CREATE THIS MONSTER, YOU HAVE TO KEEP FEEDING IT. AS A BUSINESS OWNER, I HAVE TO CREATE OPPORTUNITIES FOR MORE AND MORE WORK FOR THESE GUYS."**

Darrin Black

ter plumber and now runs the company's service division for the Abilene area.

Growth came via a combination of savvy marketing and branding efforts, as well as providing great customer service and emphasizing quality work instead of lower prices. "Customers keep coming back because for years and years, we've kept doing exactly what we say we're going to do," he says.

Geographic expansion occurred as Black Plumbing kept traveling farther afield to serve customers, prompting Black to consider branch operations, mostly along the Interstate 20 corridor. In 2010, the company established a location in Sweetwater, 40-some miles west of Abilene. Six months later, Black opened a facility in Snyder, about 30 miles northwest of Sweetwater. From there, additional operations followed in Brownwood, San Angelo, Colorado City, Stephenville, and most recently in Big Springs.

"We took some calculated risks by opening branch locations and trusting guys in those locations," Black recalls. "Actually, we did everything wrong at first — we didn't structure it right and didn't outfit the shops correctly.

"The story easily could've gone the other way, but we weathered the storms," he continues. "We went in and didn't back down. Business was slow at first because you have to build that reputation." To establish deeper roots in each community, Black Plumbing sponsors local events and supports local charities. "I feel we're very blessed to be in these communities that support us, so we need to support them," he says.

The Black Plumbing fleet of vehicles and the Abilene, Texas, office crew are shown in front of the Abilene office. Staff members include: Adriel Ortega, Amanda Wagner, Bill Phillips, Brad Brazel, Bryant Garrett, Chad Lester, Chris Black, Chris Brown, Chris Flores, Cole Sisco, Cornelius Maldonado, Darrin Black, Gary Garrett, James Pendley, Jason Sherman, Jay Gardner, Jesus Valenzuela, Kim Rylander, Kim Walker, Matt Beard, Melissa Bilski, Michael William, Miguel Benavides, Misti Myrick and Nathan Valenzuela.

## **MORE GROWTH AHEAD**

After being in business more than 20 years, Black says he's amazed at how his company has grown. "If you would've asked me 23 years ago if I wanted 56 employees and 25 trucks, I would've told you that you're nuts," he says. "I didn't want all the headaches that come with so much growth. But at the same time, I kept seeing demand for services that kept us growing."

Black sees more opportunities ahead, in terms of both services and service areas. "I predict more growth. I predict we'll open up more new locations and maybe get into other parts of our industry that we're not in now. It'll happen as long as we dot our i's and cross our t's and keep doing what we've been doing."

There's one big reason he feels compelled to keep growing: his employees and their 200 or so family members who depend on the company to make a living.

"I'm humbled every day," he says. "When I graduated from high school, I never figured that this kid was supposed to be some kind of big success story. I figured I'd work for 40 or 50 years and retire — lead a normal life. My aspiration wasn't to be a business owner with 56 employees. But I love the fact that it worked out that way." ▼

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# A Recipe for Successful Customer Care

## A WORK ENVIRONMENT WHERE HAPPY EMPLOYEES FOLLOW THESE PROFESSIONAL SERVICE STANDARDS WILL ATTRACT AND KEEP GOOD CUSTOMERS

BY DENISE CIARDELLO

**P**eter Drucker famously writes in *The Practice of Management* that the purpose of a business is to create and keep a customer. Unfortunately, the latter of these is often overlooked. With the papers, online content, and mailers filled with so many ways to attract new customers, what businesses tend to forget is that they spend almost three times as much on attracting new customers as they do retaining the customers they already have.

Every business has a culture, and the culture defines whether the office is customer-, time- or technology-focused, exhibiting either a sense of negativity or an attitude of joy. The standards and values of the team can become apparent to a customer as soon as the phone is answered. When the emphasis of the office is placed on exceptional customer care, the team becomes an asset that will continue to grow the business over time. The significance of creating greater customer satisfaction begins with a total team approach.

The following three ingredients form the secret sauce to create a work environment that generates raving fans and, in turn, develops an organic marketing strategy that brings in friends and family of your satisfied customers.

### PERSONAL ATTENTION

Customer service is the first step in effective marketing. When a customer walks in your front door, how do they feel? Is it cold and sterile or warm and inviting? Do you look up and smile when a customer enters the room? Do you realize you can change someone's entire outlook with a simple smile? Personal touches, like shaking hands and individual greetings, provide an immediate differentiator and project a form of professionalism that people expect from a business encounter. By ensuring that someone feels like you are glad they are there, they will only leave your office feeling happy and — even better — they will go tell all their friends.

### BE PUNCTUAL

A major complaint from customers is the wasted time they spend, either waiting for scheduled meetings or for the equipment to arrive. Customers don't enjoy being forced to wait without knowing the reasons for the delay or how long the delay will be. These long waits may be interpreted as a sign of disrespect for the time and efforts your clients and customers spend to ensure their calendars are clear.

Staying on schedule (or close to it) is a major factor in customer retention — perhaps even one of the biggest. A clear message of indifference is sent when people frequently experience long wait times. Prevent delays by avoiding over-scheduling your office staff or technicians. And when the inevitable delay occurs, be sure to communicate with the customer, explaining the situation. Telling them about a five- or 10-minute delay may diffuse any anger or frustration. Be honest as soon as you know there will be a wait time.

IT DOESN'T TAKE A LOT TO CREATE THE **SECRET SAUCE FOR CUSTOMER RETENTION** — IT JUST TAKES CONSISTENCY AND ATTENTION TO DETAIL. MOST IMPORTANTLY, IT TAKES A TEAM.



Denise Ciardello

### FOCUS ON PROFESSIONALISM

This area is lacking in so many businesses as society becomes more casual about so many things. Here are a few facets of professionalism your business may want to focus on:

- Dress appropriately. Whether you issue company uniforms or not, appearance should always be neat and clean. A wrinkled outfit looks no better than a pair of ripped jeans. Generally speaking, revealing or tight clothing is a no-no. Avoid clothing that is too low, too high, too tight or too revealing.
- Don't hide from your mistakes. As hard as it may be to do, take ownership of your mistakes and do your best to correct them. Try not to make the same mistake twice. Never blame others, but set an example so that those who shared in the mistake can step forward and admit it. By the same token, don't constantly call others out on their mistakes; rather, help to teach them the right way.
- Be a team player. A true professional is willing to help co-workers when they are overburdened. Don't hesitate to share knowledge, opinions, or simply an extra pair of hands. One person's success reflects well on everyone in the workplace.

### ALL ABOUT RESPECT

Customers will always appreciate excellent customer service. While you put so much emphasis on the new customer, what about the returning customers? You need to woo each one equally. Give the personal attention everyone longs for in every aspect of their lives. Treat customers with respect at all times. If you maintain a culture of respect, your customers will know they are truly being well cared for. Work together as a team to maintain schedules, and when someone falls behind, let the customer know there will be a wait.

Conduct yourself in a professional manner at all times; this includes how you look, what you say and how you treat others. Keep an open line of communication with your clients, and ensure prompt attention to any issues that may arise.

It doesn't take a lot to create the secret sauce for customer retention — it just takes consistency and attention to detail. Most importantly, it takes a team.

### ABOUT THE AUTHOR

Denise Ciardello is the co-founder of Global Team Solutions, a speaker and author of the Office Management Gems series. Reach her at [www.gtsgurus.com](http://www.gtsgurus.com). ▼



## Horizontal Directional Drilling

### Ditch Witch JT40

The JT40 horizontal directional drill from Ditch Witch integrates machine data into an innovative display to keep operators informed and productive on the job. It has two 7-inch LED displays that keep operators informed on critical machine functions and operations. Integrated into these displays is tracker information for visibility into all job site functions beyond drill operation. The operator's station has a real-time carriage position indicator and a multifunctional, radial operator control highlighted on the display for control efficiency, including mud flow and rotation. It is powered by a 160 gross hp Cummins engine and has a two-speed, rotational drive system that delivers 5,500 pounds per foot of torque. It holds up to 600 feet of drill pipe onboard and minimizes pipe-entry distance, providing increased drill pipe support as it enters the ground.

800-654-6481; [www.ditchwitch.com](http://www.ditchwitch.com)



### Toro DD2024

The Toro DD2024 horizontal directional drill combines a compact design with 20,000 pounds of pullback force and 2,400 ft-lb of rotary torque. Powered by a 74 hp Cummins



3.3 turbocharged diesel engine, it delivers performance in all operating conditions. Its quad rack-and-pinion carrier design spreads the load evenly for smooth and stable movement. The onboard mud pump flows up to 30 gpm, and the floating carriage has two speeds, including a 120-feet-per-minute fast mode. It has a footprint of 52 inches wide, 207 inches long, and a height of 74 inches, with forward-mounted track drive motors with planetary gear reduction to provide traction in all types of ground conditions. The rear dual stabilizers can be independently adjusted to safely secure the unit during operation. For operator safety, it uses a remote exit side lockout and a Zap Alert system to notify the operator in the event of an electric line strike.

800-344-8676; [www.toro.com/en/underground](http://www.toro.com/en/underground)

## Mud Recyclers

### American Augers M-300D

The M-300D HDD fluid-cleaning system from American Augers has a small trailer size that lowers registration and excise tax requirements while supporting any make of 60- to 100-ton drill unit with



a true 300 gpm fluid-cleaning capability. The system's 300 gpm flow rate is achieved using a single Derrick FLC-504 Linear Motion shaker design and four screens using Pyramid Plus screen technology. The small footprint and ultraquiet operation make it ideal for use in urban and suburban locations. It comes standard with a 90 kW generator, with the option of upgrading to a larger 135 kW generator for offboard drill cabins. It offers a total tank capacity of 3,100 gallons, broken into a 1,800-gallon capacity for screenings and a 1,300-gallon capacity for cleaning and mixing fluid. It comes in at a compact length of 27 feet 3 inches when mounted on a trailer, with a weight of 28,600 pounds. A tank agitation system keeps all solids suspended in the tank, and three function-dedicated pumps ensure consistent high-level fluid-cleaning performance throughout drilling operations.

419-869-7107; [www.americanaugers.com](http://www.americanaugers.com)

### Mud Technology International MCT-750

The MCT-750 from Mud Technology International includes a foldable catwalk that gives operators an expanded work area while maintaining the original shipping profile. This catwalk provides access to two high G-force linear shakers and a round cone manifold. Magnum centrifugals with mechanical seals minimize the routine maintenance, and an added winterizing package helps prepare for cold-weather operations. Instead of a traditional cone manifold, it uses independent valves with field-replaceable elbows for quick maintenance. It incorporates an overhead possum belly for complete draining to lower maintenance. This updated design has a higher output and generally has less downtime. Its dual tandem axles, pintle hitch and 10,000-pound leveling jacks make it a versatile addition to any drilling fleet.

866-675-3240; [www.mud-tech.com](http://www.mud-tech.com)

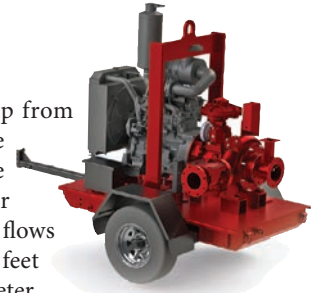


## Mud/Slurry Pumps

### Global Pump 6GST Mark II

The 6GST Mark II standard trash pump from Global Pump is designed to effectively handle a wide range of liquids from water to sewage and sludge that can contain solids and other material. It is capable of achieving maximum flows of 3,000 gpm and maximum total head of 202 feet while handling solids up to 3 inches in diameter. It is SAE flange mounted to a water-cooled, four-cylinder diesel engine. Alternative drives are available, including electric motors. A front pullout cartridge seal provides ease of maintenance as it can be quickly changed in the field, reducing downtime and expense.

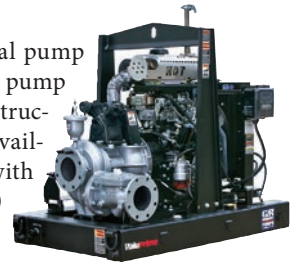
866-360-7867; [www.globalpump.com](http://www.globalpump.com)



### Gorman-Rupp ValuPrime

The ValuPrime priming-assisted centrifugal pump from Gorman-Rupp is a compact and powerful pump ideally suited for the dewatering needs of the construction, industrial and agricultural markets. It is available in 4-by-4-inch and 6-by-6-inch models, with flows to 1,520 gpm, total dynamic head to 150 feet, and solids-handling capabilities up to 3 inches. It comes standard with a 34-gallon fuel tank, programmable control panel and an Environmental Protection Agency-compliant Isuzu Final Tier 4 diesel engine. It is ideal for flood and stormwater standby, general job site dewatering, dust control, and water and street department applications.

419-755-1011; [www.grpumps.com](http://www.grpumps.com)



### Hydra-Tech Pumps S4CSL

The S4CSL submersible, 4-inch, hydraulic-driven sand slurry pump from Hydra-Tech Pumps includes a built-in agitator used for stirring up solids. It has hardened-alloy wear parts and is designed to be used in applications where settled solids must be put into suspension and pumped away with the discharge water. Primary applications include desilting ponds, lakes, and streams; other uses include filling sandbags to prevent beach erosion, performing tank and digester cleaning, or pumping sediment from caissons. It requires hydraulic inputs of up to 17 gpm at 2,800 psi, and when combined with HT20 to HT35 open and sound-attenuated power units, it is capable of output flows of up to 750 gpm.

570-645-3779; [www.hydra-tech.com](http://www.hydra-tech.com)





## Pipe Bursting

### Pow-r Mole Trenchless Solutions model PD-33M

The model PD-33M pipe bursting machine from Pow-r Mole Trenchless Solutions is designed to replace existing underground pipes 2 to 6 inches in diameter. Its non-slip, cylinder-activated jaws prevent cable damage while providing 60,000 pounds of pulling force. It offers a cost-effective alternative to open-cut excavation, which reduces customer disruption and increases company profits. The process replaces the existing pipe with a fused HDPE pipe, which eliminates all joints, and allows the operator to pull through bends such as 45-degree fittings. This system is modular and can be easily disassembled and reassembled for manhole and basement applications. With a compact design and very small footprint of only 20 by 20 inches, this unit can be used in tight locations.

800-344-6653; [www.powrmole.com](http://www.powrmole.com)



### RODDIE lateral pipe bursting machine

The lightweight lateral pipe bursting machine from RODDIE slides apart into two components of 50 and 60 pounds that can be lowered and reassembled by hand in the excavated pulling pit. In most cases, this machine is powered and operated by a mini-excavator or bobcat tractor. It is capable of 30 to 50 tons of pulling force and can be used on 4-, 6- and 8-inch sewer laterals, but it can also replace 1- to 4-inch water services.

888-406-3821; [www.pipeburstingamerica.com](http://www.pipeburstingamerica.com)



### Spartan Tool UnderTaker

With 30 tons of lateral pulling force, the UnderTaker pipe bursting system from Spartan Tool employs a hydraulically powered cylinder that pulls a bursting head through the existing line while simultaneously replacing it with seamless, high-flow, code-approved high-density polyethylene pipe. With a small hole at each end of the run, the user can pull pipe from the building to the main, accommodate bends in the pipe, increase diameter and lay new line at a rate of up to 5 feet per minute. The system allows replacement of 2- to 6-inch pipe with up to three 45-degree bends in the pipe. It can also upsize from 4- to 6-inch pipes. When assembled, the unit weighs 210 pounds, but it disassembles into four separate components for easy transport, with no part weighing more than 70 pounds.

800-435-3866; [www.spartantool.com](http://www.spartantool.com)



## Pipe Fusion

### McElroy Hornet

The Hornet from McElroy is an all-in-one tool for outlet fusion of polypropylene pipe. It helps installers maintain perfect alignment of the pipe and fitting for accurate fusions with less time and strain compared to manual methods. The V-base design allows it to self-align on the center of the main pipe. With a small footprint and weighing just 13 pounds, it is capable of performing outlet fusions in any orientation, making it ideal for overhead and vertical fusions in tight spaces.

918-836-8611; [www.mcelroy.com](http://www.mcelroy.com)



## Rock Drills/Saws

### Infinity Tool PDC Reamer

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

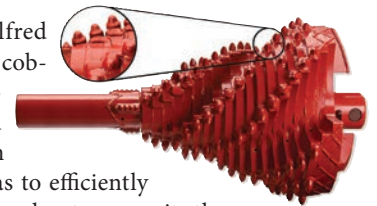
888-838-6657; [www.infinitytoolmfg.com](http://www.infinitytoolmfg.com)



### Melfred Borzall Ogre

The Ogre stacked reamer from Melfred Borzall is built for jobs that have a lot of cobbles, shale, river rock, glacial till and hardpan. It is designed with a slow taper and deep, spiraled fluting to give it maximum mixing and pumping motion, as well as to efficiently carry away cuttings. Angled fluid jets propel water opposite the reamer rotation to keep carbides clear of debris. It is fabricated so each cutter takes off only 1/2 inch at a time for smooth, efficient cutting. It is built with varying sized carbide blocks to prevent shaft wearing directly in front of the reamer body; has hard-facing on all other wear areas; and includes curved, hard-faced backup blades for added wear-resistance during pushbacks. It is available with three carbide cutter styles to maximize reaming production in a wider variety of tough conditions, as well as the option of a built-in swivel. Shark-tooth, conical aggressive and conical dome cutter options are available in cutting sizes from 8 to 48 inches.

800-558-7500; [www.melfredborzall.com](http://www.melfredborzall.com)



## Tunneling

### Akkerman Tunnel Boring Machine 600

The Tunnel Boring Machine 600 from Akkerman has a sealed steering joint that allows for bidirectional, full articulation at the face of the bore and a high-capacity main bearing. Its two-speed drive motors operate in either low-speed/high-torque or high-speed/low-torque modes. This functionality allows operators to precisely tailor cutting speeds and torque in varying geology for optimal productivity. The operator controls steering, maintains line and grade, and monitors the soil removal process from an interior control station. As soil is excavated, dirt paddles propel it onto the belt or screw conveyor for transport to the haul unit. Carbide single bar, quad bar and sand shelves cutter heads come standard and can be changed underground as necessary. Mixed-ground disc cutter heads for high compressive strength geology, closed face cutter heads for unstable ground or custom cutter heads are also available.

800-533-0386; [www.akkerman.com](http://www.akkerman.com)



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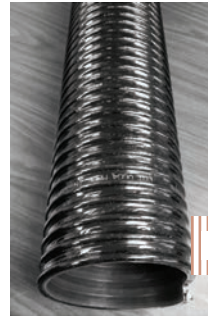
# THE LATEST: Products



1



2



3



4

## 1. HammerHead Trenchless XPR pneumatic hammers

HammerHead Trenchless' XPR series of high-performance pneumatic hammers for pipe ramming and pipe bursting applications features a high-flow valve system that produces a more powerful impact. The XPR technology allows for the reverse function to be controlled above-ground, simplifying tool removal from pushing collets and burst heads. The 26XPR is capable of installing casing 24 to 84 inches in diameter and is suitable for use in drainage culverts, pipeline work, and horizontal directional drilling assist methods, such as washover casing installations, pipe assist or pipe extraction, and guided pilot bore ramming. It is also effective in pneumatic pipe bursting applications of pipes ranging from 15 to 36 inches in diameter. **800-331-6653; www.hammerheadtrenchless.com**

## 2. Water Cannon Inc. - MWBE Easy Start Unloader Plumbing Kit

The Easy Start Unloader Plumbing Kit from Water Cannon Inc. - MWBE ensures water goes where it should and keeps excess water inside the pressure washer. The preassembled unit includes a brass valve body with a stainless steel ball and seat. It adjusts from 100 up to 5,650 maximum psi and has an easy-to-adjust ergonomic handle that features a tamper-resistant setting. The kit has two inlet and bypass ports and a built-in easy-start feature so the pump can start without static back pressure. It must be mounted in a vertical position. **800-333-9274; www.watercannon.com**

## This Issue's Feature: Providing a long reach

BY CRAIG MANDLI

With the growing need to excavate without damaging underground utilities and pipelines, more contractors are turning to hydroexcavation. However, operators can be limited by bulky hydroexcavator trucks with limited boom reach. That's why the **VE115 Vacuum Extension boom** from **Schwing America** is becoming a popular choice for accessing work areas in rural and urban settings.

The four-section roll-and-fold boom provides 126 feet of reach vertically, 115 feet horizontally and 89 feet below grade. It connects to any vacuum excavator with a minimum 5,000 scfm, positive displacement blower. High-pressure water and air connections are on the rear of the chassis, with plumbing to the boom tip.

"On a standard hydrovac, you can reach about 26 feet with a stiff boom," says Phil Serre, Long Reach Vac Division Manager for Schwing America. "Instead, we are capable of covering 1 square acre without having to move or reposition."

The technology is also available on the company's VX115 Vacuum Excavator — an all-in-one unit with air and water systems onboard. It offers 6,176 scfm with its 28-inch Hg blower, along with a 750-gallon water tank, 420,000 Btu diesel-fired boiler and a 18 gpm at 4,000 psi water pump. With this unit,



VE115 Vacuum Extension boom from Schwing America

you hook up a 25-yard roll-off container, which allows for near continuous operation at large job sites.

"Instead of the conventional hydrovac with a small holding tank that must stop vacuuming operations and leave the job site to unload, we just exchange the roll-off vac box and let the much cheaper roll-off truck remove up to 25 yards of material at a time while we continue the vacuuming project," Serre says. "We only have to stop long enough for the box exchange."

In addition to tight urban areas where it may be difficult to maneuver a hydroexcavation truck, Serre says he sees several other applications for the technology.

"We have also had a lot of interest from roofers and roof contractors wanting to remove rocks from multistory buildings," he says. "With the addition of a self-contained, high-pressure blast ring affixed to the end hose, we've had customers clean waste tanks and holding ponds. The unit is fully remote controlled, and the operator can sit at a safe location and simply pressure wash and vacuum the tank, or even steam clean it. So far everyone loves their capabilities."

**888-724-9464; www.schwing.com**



**3. Milwaukee Rubber Products Kanaflex KanaBoom Lite**

Kanaflex KanaBoom Lite, distributed by Milwaukee Rubber Products, is a medium-duty wet and dry material handling vacuum hose with a static dissipative polyurethane liner. It is usable in temperatures ranging from 40 degrees below zero to 140 degrees F and is ideal for industrial vacuum equipment, roof vacuuming, dry fertilizer and petroleum coke. It has a flexible, abrasion-resistant polyurethane liner; rigid PVC helix; and smooth bore with a PVC corrugated outside diameter with static dissipating materials. It is lightweight and flexible in subzero temperatures. Its abrasive-resistant polyurethane tube provides an increased life span, prevents material buildup and provides quiet operation. **800-325-3730; [www.milwaukeeerubber.com](http://www.milwaukeeerubber.com)**

**4. Cat Pumps Model 660**

Cat Pumps Model 660 is ideal for smaller profile high-quality hydro-excavating equipment such as trailers or small trucks. Rated to 10 gpm up to 3,000 psi, the 660 packs power in its compact size. It has been field proven to stand up to tough environmental conditions and continuous duty applications. Other features include V-packings and low-pressure seals completely lubricated and cooled, greatly increasing pump life. No external oilers are required. The manifold is easily serviced without entering the crankcase. Pumps and service parts are available from stock for immediate shipment. The Model 660 is also offered in a pump and hydraulic motor assembly for fast and easy installation. **763-780-5440; [www.catpumps.com](http://www.catpumps.com)** ▼



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### EQUIPMENT & TOOLS

2007 Aquatech B10/1500: CAT 335hp (EPA 04) with Allison automatic transmission. 88,000 miles. 1,400 hours. New Roots 624 blower, 8" x 19' extendable boom, pump-off option, internal tank flush, 6-function joystick. Excellent condition. KLM Rentals Inc. 617-909-9044 (PBM)

**1999 International Guzzler** vacuum excavator: Totally refurbished, purchased new for Big Dig Project. 27" blower, CAT engine, auto remote. Special noise-suppression equipment. Tri-axle. High-pressure wash-down system - 300-gallon water tank. \$69,500 OBO. Also available **1997 Ford Guzzler** vacuum excavator - same features as 1999 International. No washdown system. \$69,500 OBO. Call 617-212-0162. (CBM)

2015 Premier Oilfield Equipment hydroexcavator with Epps water heater mounted on a CAT CT660. 14,000 miles, 1,200 total engine hours. \$310,000. 860-712-3571 (P04)

1984 Mack R686ST with a 1999 Keith Huber Dominator 3,000-gallon carbon-steel, dump type, DOT, vacuum tank unit. (Stock# 1165C) [www.VacuumSalesInc.com](http://www.VacuumSalesInc.com) (888) VAC-UNIT (822-8648) (PBM)

3-yard Aquatech positive displacement vacuum trailer (hydraulic boom & dump). Photo available. \$12,000 OBO, credit card accepted. Frank 914-235-2500. (P04)

Jetstream 4200 UNX 20K conversion kit. Less than 300 hrs. on head. Purchased 2015. \$15,000. 440-813-0025 (P04)

### RENTALS



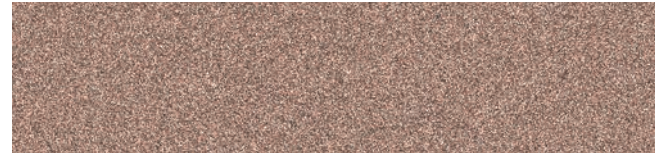
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Piercing, Bursting and Tunneling

BY CRAIG MANDLI



Success Stories:

## Pipe bursting effective in sandy soil, high water table

### PROBLEM

The city of Seymour, Indiana, lies about 10 feet lower than the land around it. Therefore, any work at depths greater than 5 feet generally requires a week of dewatering prior to breaking ground. Yet even dewatered, excavating in close proximity to building foundations is risky. When a blockage occurred in one neighborhood's 16-inch asbestos-cement gravity sewer main, the city called Lawyer Excavation for the repair.

### SOLUTION

For this job, **HammerHead Trenchless** specified an **HB125 static pipe bursting system**, designed for use in pipe diameters 6 to 20 inches with 125-ton pullback capacity. It includes a downhole pulling unit and 4,500 psi hydraulic powerpack. Dewatering continued steadily for one week before the burst. Lawyer Excavation then fused up the 560-foot length of HDPE pipe on the surface two days in advance. The crew pulled the pipe into position, fusing it to the pipe puller on the bursting assembly. Ahead of the fuse-on puller was the expander, which would cut the pipe open and expand the pipe path about 25 percent larger than the 14-inch DIPS HDPE replacement pipe's O.D., reducing friction. The pipe pilot and swivel connection completed the bursting assembly. The HB125 pressure gauge read 90 tons as the expander engaged the old pipe, then subsided to approximately 50 for most of the burst. At times, all 125 tons of pullback capacity was briefly called upon.

**RESULT** Lawyer Excavation completed the run in just three hours. 800-331-6653; [www.hammerheadtrenchless.com](http://www.hammerheadtrenchless.com) ▼

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*Happenings*

CALENDAR

**April 21-26**

**World Tunnel Congress (WTC)**, Dubai World Trade Centre, Dubai, United Arab Emirates. Visit [www.wtc2018.ae](http://www.wtc2018.ae)

**May 22-24**

**National Utility Contractors Association (NUCA) Washington Summit**, Holiday Inn Capitol, Washington, D.C. Visit [www.nuca.com/summit](http://www.nuca.com/summit)

**June 3-6**

**American Society of Safety Engineers (ASSE) Professional Development Conference & Exposition**, Henry B. Gonzalez Convention Center, San Antonio. Visit [safety.asse.org](http://safety.asse.org)

**Sept. 29-Oct. 3**

**Water Environment Federation 91st Technical Exhibition & Conference (WEFTEC)**, Ernest N. Morial Convention Center, New Orleans. Visit [www.weftec.org](http://www.weftec.org)

**Oct. 23-26**

**Association of Equipment Management Professionals EquipmentSHIFT**, Renaissance Columbus Downtown Hotel, Columbus, Ohio. Visit [www.aemp.org/page/shift2018](http://www.aemp.org/page/shift2018)

**Nov. 1-2**

**WaterJet Technology Association and Industrial & Municipal Cleaning Association (WJTA-IMCA) Conference & Expo**, Ernest N. Morial Convention Center, New Orleans. Visit [www.wjta.org](http://www.wjta.org)

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

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