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THE RIGHT BALANCE

Ray Ramirez
Owner
General Plumbing and Rooter

A shift in focus leads contractor to continued growth
12

DOWN & DIRTY:

CREWS FIND WAY TO DRILL 800 FEET DOWN AND ACROSS A NEBRASKA RIVER
20

TECH PERSPECTIVE:

TIPS FOR MANAGING THE RISING EQUIPMENT COSTS
17



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Contents

JANUARY 2020

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FOCUS: Pumps and Blowers; WWETT Pre-Show Issue



COVER STORY

12 **PROFILE: PIPE BURSTING** **The Right Balance**

California contractor finds success through careful growth and shifting service priorities to more trenchless.

By Jared Raney

ON THE COVER:

Ray Ramirez, General Plumbing and Rooter owner, with a RODDIE RX-30 Pit Shot pipe bursting system. Ramirez founded the company, based in Antioch, California, in 2004 and now has 14 employees that handle pipe bursting, directional drilling, pipe repair/replacement, video inspection and many other services. (Photography by Collin Chappelle)

FEATURES

18 **COMPANY DIRECTORY:** **Pumps**

28 **PRODUCT FOCUS:** **Pumps and Blowers**

By Craig Mandli

COLUMNS

8 **BELOW THE SURFACE:** **Make Technology** **Work for You**

Safer equipment and tools are on the market now that can help you and your crews get jobs done faster and more reliably.

By Cory Dellenbach, Editor

17 **TECH PERSPECTIVE:** **Managing the Cost** **of Equipment**

A close look at how you are using each piece of equipment and your overall business can help manage company spending.

By Sandra Mason

20 **DOWN & DIRTY:** **Daunting Challenge**

Long, deep bore tests crews as they work to install new water main under Nebraska's Niobrara River.

By Ken Wysocky

22 **TECH TALK:** **Diving Into Technology**

Clearing up five misconceptions about technology for site prep contractors.

By Sandra Mason

24 **SHOP TALK:** **Tips for Better Fuel Efficiency**

Getting the most out of each gallon can be as simple as watching idle time and how you or your crews operate the equipment.

By Pat Monroe

26 **SMART BUSINESS:** **5 Tips to Quickly Convert** **Invoices Into Cash**

You can solve the age-old problem of lag time between services rendered and dollars in your bank account.

By Erik Gunn

IN EVERY ISSUE

10 **@digdifferent.com**

Visit daily for new and exclusive content.

30 **The Latest: Products**

This Issue's Feature: Pipe plugs designed for easier maneuverability

By Craig Mandli

32 **The Latest: News**

32 **Happenings**

NEXT ISSUE: February 2020

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

- Profile: Hoffman Elite Enterprises (Saskatoon, Saskatchewan)
- Tech Perspective: Selecting the right backreamer
- Smart Business: Making a great first impression with potential customers



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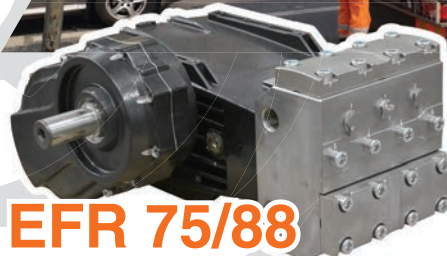


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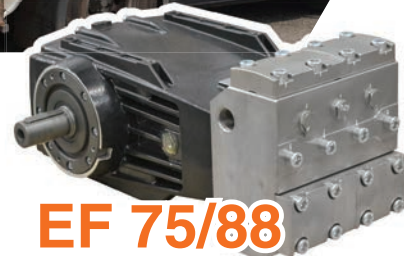
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Advertiser Index

January 2020

Comet Industrial Pumps (A Division of Valley Industries) ...	6	 RAMVAC Vacuum Excavators by Sewer Equipment	9
GapVax, Inc.	35	 Rival Hydrovac Inc.	23
 Gorman-Rupp Company	5	RODDIE, Inc.	27
John Brooks Company Limited (Dynablast)	11	 Sonetics	7
Milwaukee Rubber Products, Inc.	25	TRUVAC by Vactor Manufacturing, Inc.	2
No-Dig Show	34	Vac-Con, Inc.	back cover
Radius HDD	3	WWETT Show	33

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

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

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

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

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

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

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

CIRCULATION: 26,089 copies, nine times yearly.

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SAFER EQUIPMENT AND TOOLS ARE ON THE MARKET NOW THAT CAN HELP YOU AND YOUR CREWS GET JOBS DONE FASTER AND MORE RELIABLY

BY CORY DELLENBACH, EDITOR

I want you to think back to the year 2000. Just two decades ago. It doesn't seem like that long ago, does it? When you compare the technology from then to now, the changes are pretty evident.

Technological advances are happening all the time. If you don't believe me, just take a glance at the many emails I receive from manufacturers announcing new equipment and tools. It seems like there are new features, software and new ways to build something every week.

Look at a directional drill from 2000 and then look at one that was just rolled out of the manufacturing plant today. There have been some big changes in these last 20 years, but are these advances really necessary? My answer to that would be a big YES.

THINK SAFETY

The first, and probably most important reason for new technology, is to make your jobs safer.

It seems like every month we're reading about contractors getting injured or killed by utility strikes. Most of those are attributed to user errors such as failing to locate at all and not checking locates prior to digging.

New locators hitting the market this year make locating utilities — electric, water, gas, etc. — more accurate and easier. While at the International Construction and Utility Equipment Exposition (ICUEE) this past October, I checked out a locator where you could set it to scan for certain utilities while cutting out the others. It also had a locking feature so a manager can set what utility to search for and lock it in so it can't be changed.

A manager can also look at the history of this locator and find out easily if an employee isn't using it correctly and then fix the error.

Other safety technological advances over the past two decades on equipment include better tracking of directional drill pipe and emergency shut-offs if the equipment comes in contact with electrical currents.

BEYOND SAFETY

While safety is a big advantage to the technological advances that we've seen, there are others as well, including your ability to do a job better and faster and be more accurate.

How fast are you getting on a job site now and hammering out the job? Probably faster than you were back in 2000, and that is thanks to the technology on equipment you are using. There's new features available keeping you on the right track, helping you keep a job site cleaner and getting you past obstacles you run into while digging.

Technology is making vacuum excavators smaller to fit into those tight spots you couldn't before. They're making the machines more powerful and making it easier to reuse material when you are finished instead of taking the time to find a dump location.

WHAT IS BEST FOR YOU

I've told you some ways technology has helped your companies over the past 20 years, but there is so much more. Are you still running that directional drill, vacuum excavator or other piece of equipment from 2000 or before? It might be time to go shopping.

Right now is the best time to check out the market with some big shows coming up in the industry. In February you'll have the Water & Wastewater Equipment, Treatment & Transport (WWETT) Show in Indianapolis, then in March it's CONEXPO-CON/AGG in Las Vegas, and in early April it's the No-Dig Show in Denver.

Carve out some time in your busy schedule to visit at least one of these upcoming shows to see what is out there for your company.

WELCOME TO THE NEW YEAR

Finally, welcome to 2020! I want to take this time to remind you we're continuing to look for potential companies to profile and tough jobs to highlight, and to talk about equipment you are using.

If you are interested in having us talk to you about your company, email me at editor@digdifferent.com or call 715-350-8436.

Enjoy this issue! ▼



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CONTINUING EDUCATION

Strategic Employee Pairings Encourage Learning on the Job

If you prefer learning out on the job site through interaction with colleagues instead of time in a classroom, you're not alone. Human beings are social learners, innately wired to learn best through other people by simply watching them and mimicking. This online exclusive looks closer at how you can take advantage of this in your company to create more engaged and productive employees.

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INVEST IN PEOPLE

Workforce Investment Boosts Employee Retention

Much of a company's success has to do with the quality of its employees, so it's vital to hang on to the good ones. The three companies featured in this online exclusive serve as prime examples of the types of methods that tell your employees they're valued members of the team.

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PLANNING AHEAD

Developing an Equipment Replacement Strategy

Look at what equipment changes you've had with your business over the years. Have they been more forced rather than planned? If so, you've probably experienced a lot of financial stress as well. Equipment emergencies can't always be prevented, but if you're prepared, you can survive them without a significant effect on cash flow. Tips on how to create a proactive equipment replacement plan are covered in this online exclusive.

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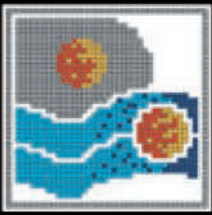
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"I REALLY LIKE THE CHALLENGE — BEING ABLE TO FIND A LEAK THAT NOBODY ELSE COULD FIND OR TO REPLACE A LINE THAT SOME PEOPLE JUST WALKED AWAY FROM."

Ray Ramirez



The crew from General Plumbing and Rooter in Antioch, California, includes, from left, trenchless crew members Alvaro Sanchez and Ismael Chavez; Ray Ramirez, owner; Ramon Ramirez, foreman; Carlos Perez, excavator operator; and Alex Viera, camera operator.

THE RIGHT BALANCE

CALIFORNIA CONTRACTOR FINDS SUCCESS THROUGH CAREFUL GROWTH AND SHIFTING SERVICE PRIORITIES TO MORE TRENCHLESS

STORY: JARED RANEY PHOTOS: COLLIN CHAPPELLE

At its peak growth, Ray Ramirez's company had 12 technicians — but in 2018, they reached milestone revenue with less than half that number.

“One of the reasons I decided to keep fewer technicians is because it's easier to manage the technicians, and it's easier to manage all the expenses,” Ramirez says. “It's not necessarily by having more technicians that you're making more money. With fewer technicians, we generated more revenue than with 12.”

The company, General Plumbing and Rooter, is a plumbing service and repair contractor in the San Francisco Bay Area in Northern California. In 2018, they broke the \$2 million revenue mark after several years of staff optimiza-

tion and shifting the company's primary services to pipe bursting and drain cleaning.

Downsizing his staff helped achieve a perfect equilibrium for maximizing profits, but it wasn't solely adjusting his roster that boosted revenue for Ramirez. Over the past year, he has also prioritized drain cleaning over his other plumbing services, shifting from 60% plumbing to now 65% drain cleaning.

While plumbing services make up a good portion of the company's services, Ramirez has also focused on repair and replacement. Leaning into trenchless methods, primarily pipe bursting, has also allowed the company to grow its revenue while maintaining the smaller staff.



Ray Ramirez, one of the first in the area to invest in pipe bursting and repair equipment, sets up a RODDIE Pit Shot directional drill on a job site.

General Plumbing and Rooter Antioch, California



OWNER: Ray Ramirez
FOUNDED: 2004
EMPLOYEES: 14 (5 service technicians, 4 on a trenchless crew [2 specialists and 2 helpers], 3 office staff, 1 sales specialist/field supervisor, 1 video inspector/estimator)
SERVICES: Drain cleaning, plumbing services, video inspection, pipe repair/replacement, pipe bursting, directional drilling
SERVICE AREA: San Francisco Bay Area; Contra Costa and Alameda counties
WEBSITE: www.generaldrainworks.com

INNOVATION EQUALS PROFIT

"I've always liked the idea of doing pipe bursting," Ramirez says of the trenchless specialty. "Pipe bursting equipment can save a lot of time, money and energy."

A preference among inspectors for pipe bursting has made it a preferred method in his service area, putting his specialization in high demand.

"Around 2005, I purchased my first pipe bursting equipment. A few friends who were plumbers, working for themselves, started calling me to do their pipe bursting," Ramirez says. "Then obviously I was doing jobs for my company, for myself."

Ramirez has been a committed customer of RODDIE, investing in two of their pipe bursting systems over the years. He started with the R2 system, which worked so well for him that he also purchased the RX-30. When his brother, who had worked with him for 12 years, decided to branch off and start his own company, Ramirez sold him the R2, along with some other older equipment. His brother liked it so much that he later bought himself an RX-30 too.

Assisting in his trenchless work is an LD-12 leak detection system from SubSurface Instruments and a Pit Shot directional drill, also from RODDIE.

Pipe bursting and trenchless has done so well for him that Ramirez would like to help promote it across the broader industry.

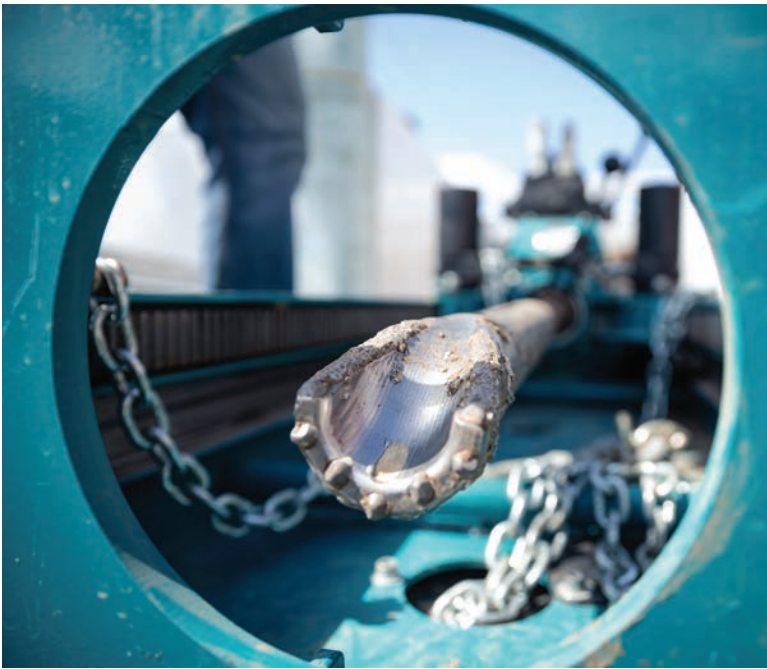
"I'm very familiar with pipe bursting, and I think there are some states, there are some countries, that can benefit from pipe bursting," he says. "I have some acquaintances in other states, and they're not sure what pipe bursting is, even in the U.S. They don't know anything about pipe bursting; they don't know anything about trenchless. So I would love to make time to show this equipment to more people so they can benefit from it."

"I HAVE SOME ACQUAINTANCES IN OTHER STATES, AND THEY'RE NOT SURE WHAT PIPE BURSTING IS, EVEN IN THE U.S."

Ray Ramirez

HOOKED ON SERVICE

Upon opening for business in 2004, the most lucrative avenue for Ramirez became servicing for home warranty companies. During the home-buying



Trenchless methods helped the company grow its revenue while still maintaining a smaller staff.



Pipe bursting techniques allow for more accurate boring than traditional horizontal drilling equipment.

boom of that time, the work was gangbuster. Of course, it didn't last long.

"We were really busy. I couldn't handle it: There was so much work. My first year I think we had 12 technicians working for me," Ramirez says. "But that was because of the bubble: The houses were selling like pancakes, especially here in California, and they were selling for a lot of money. The banks were giving loans to everyone, anyone, so it was good at that point, between 2004 and 2007. We were extremely busy. In 2007, everything crashed. The houses weren't selling, houses were on foreclosure, and so I stopped work for the home warranties."

It was at that point he scaled down to six technicians, put an ad in the phone book and started working directly with customers. Before starting his own company, Ramirez had worked in the industry for many years. He always wanted to focus on service and repair work, which he prefers because he enjoys being able to help people in a more personal way, so he never really considered switching to new construction.

"I have a few friends who do new construction; they've done both and keep telling me that service and repair is more difficult because you cannot see the plumbing. To find the leak, you kind of have to diagnose it and do some



Ramon Ramirez oversees the digging of an access pit to locate an old clay pipe outside an apartment complex in Oakland, California.

A full plate

Running one company wasn't enough for Ray Ramirez, who recently started two side ventures: a landscaping company and a house-flipping operation.

Now that his plumbing service and repair company, General Plumbing and Rooter, is running smoothly, he decided to flip some houses. One thing led to another and an opportunity presented itself via one of his tenants, a landscaper specializing in interlocking pavers.

But his time is limited, what with the two businesses already on his plate, so he has filled the role of mentor and business guru.

"I was very honest with them upfront, and I told them: 'OK, I can help you with the contract license and I can help you with equipment because I already have the equipment. I'm not going to be able to help you with my time because I'm already tied up with a company and with my other work.'

"With my experience running my company, I told them this is what I can do, this is what you need to do, and this is what we all need to do. And it has worked," Ramirez says. "In our first year — 2018 — we did over \$700,000 in gross revenue. That was really impressive for the first year."

A RIDGID SR-20 locator is used to confirm the location of the crew's inspection equipment.

"I LIKE TO INVEST MONEY IN THE BEST TOOLS. ONE OF THE REASONS MY GUYS ARE VERY EFFECTIVE IS BECAUSE THEY HAVE THE RIGHT EQUIPMENT, THE BEST EQUIPMENT OUT THERE."

Ray Ramirez

troubleshooting," he says. "I really like the challenge — being able to find a leak that nobody else could find or to replace a line that some people just walked away from."

Especially on hydrojetting jobs, Ramirez often finds himself as the second or third call, after other plumbers failed to clear the line with other means.

"A lot of times we go to homes and the customer says, 'Well we had two or three different companies come out and they couldn't clear the line.' Later we go out there with the hydro jetter. We tell them, 'If the pipe is not collapsed, this hydro jetter will clear the line for sure.'"

Hydrojetting has also been a boon to the company's stability, second only to pipe bursting.

After purchasing a mobile hydro jetter from Spartan Tool, Ramirez found a lot of work subcontracting for plumbers who don't have such advanced equipment. The Spartan Tool Soldier hydro jet — along with a drain cleaner from Gorlitz Sewer & Drain and inspection equipment from RIDGID and Vivax-Metrotech — has pushed drain cleaning to the top of their service list.

"We get compliments from inspectors. Most plumbers can't stand inspectors, for obvious reasons. When you hear something positive from inspectors, that means you're doing something good," Ramirez says. "I like to invest money in the best tools. One of the reasons my guys are very effective is because they have the right equipment, the best equipment out there."

LASTING SOLUTIONS

The two favored technologies, hydrojetting and pipe bursting, go hand in hand from a business standpoint. Ramirez is frequently able to leverage a drain cleaning into a pipe bursting job and has a convincing pitch for just such occasions.

"I tell the customer: 'This hydro jetter is just going to cut the roots; it's not going to fix the line. The roots are going to grow back, and you're going to call us again one year, two years, three years from now. This is just something temporary so you can get some time to think about replacing the lateral. It's just a matter of time before the line collapses or something else happens.'

"We try to push for replacement with pipe bursting," he says. "When customers ask my opinion about what to do in their situation, I tell them: 'If this was my house, I would clean the line because I have the equipment and I can do it.'" But there's more to the story.

As a homeowner, Ramirez actually experienced root intrusion in a sewer lateral and did just that — decided he would simply clear the line himself



whenever necessary, which worked until the day it backed up while he was out of town.

"I was probably two hours away and my wife couldn't do laundry or dishes, couldn't take a shower, couldn't do anything. And I had two little kids. She goes, 'You have to fix the line. You have to replace it.' So I had to replace it because my wife told me to," he says with a laugh. "I use that whenever a customer asks me that question; I always tell them about that story: If you ask my wife, she will tell you — replace it.

"We always recommend replacement of the line," Ramirez says. "We run the camera, and if we see the line is full of roots, we clear it and tell them, 'OK, this line is a perfect candidate for pipe bursting, right now, today. But if one of those connections collapses because of the root intrusion, pipe bursting is not an option anymore. You will have to jackhammer the sidewalk, do the repair and then pull a new line in — it will cost you a lot more money.'" ▼

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Managing the Cost of Equipment

A CLOSE LOOK AT HOW YOU ARE USING EACH PIECE OF EQUIPMENT AND YOUR OVERALL BUSINESS CAN HELP MANAGE COMPANY SPENDING

BY SANDRA MASON

A major challenge facing companies in today’s construction industry is how to deal with rising equipment and rental costs. One key component to this is whether to buy a piece of equipment or rent it, says Gregg Christensen, vice president of national accounts at United Rentals. Founded in 1997, the company is the largest equipment rental company in the world.

“If there is a consistent level of equipment utilization, based on future projections of workload that can be counted on — the sweet spot of utilization — then purchasing is the way to go,” Christensen says. “If there is a roller coaster of utilization, you’re probably better off renting. Renting enables a company to augment its owned fleet with rental equipment to help smooth out workload peaks and valleys.”

Sometimes, though, he says the buy versus rent decision boils down to: Does a fleet have what it needs when it needs it and where it needs it?

A further consideration, Christensen adds, is whether a company has the appropriate staffing and transportation infrastructure in place to maintain, repair and transport its fleet of equipment. Staffing can be a challenge unto itself because of the construction labor shortage and lack of labor growth that continues to plague the construction industry.

PLANNING FOR YOUR PROJECT NEEDS

“It has been my experience that, in general, construction businesses are poor planners when it comes to equipment and a need for rentals,” Christensen says. “At United Rentals, we try to be proactive to make sure we understand a

company’s equipment scheduling and the possible need for last-minute rentals. Especially for larger jobs, we work with job site staff to try and get an idea of ebbs and tides in their project scheduling and staffing so we can have equipment available when appropriate.”

Another way to reduce equipment and rental costs, he adds, is to appropriately service and maintain all equipment to ensure it continues to function efficiently and properly. Equipment malfunction and failure can be costly — equipment downtime, repair expenses, idle labor and project delays, all of which have a direct impact on construction costs.

“IT HAS BEEN MY EXPERIENCE THAT, IN GENERAL, CONSTRUCTION BUSINESSES ARE POOR PLANNERS WHEN IT COMES TO EQUIPMENT AND A NEED FOR RENTALS.”

Gregg Christensen

Christensen says equipment cost reductions can also be had through the use of a comprehensive telematics solution — which provides up-to-the-minute visibility into equipment health and activity — and predictive analytics.

Basically, predictive analytics uses several monitoring methods to establish regular trends and then predict the future path of those trends. With such insight, equipment owners can shift from a reactive repair-after-failure approach

PRACTICAL TIPS FOR CONTROLLING EQUIPMENT COSTS

To help manage rising equipment and rental costs, Gregg Christensen, vice president of national accounts at United Rentals, offers some advice in these areas:

UTILIZATION

First and foremost, project equipment utilization over 18 to 24 months. If a piece of equipment is going to be used over a certain percentage month in and month out, it typically stands to reason that the piece of equipment should be purchased.

EQUIPMENT

Determine if you have the staff and infrastructure available to service and transport equipment.

GEOGRAPHIC FOOTPRINT

Take into account the geographic footprint for where you might need other equipment because it is very expensive to transport construction equipment from place to place.

SCOPE AND VERSATILITY

Think about the scope of a project, the specialty aspects of a piece of equipment and how to enhance the flexibility of equipment with attachments.

DATA COLLECTION

Employ technology to track as much information from equipment as possible and learn how to leverage the data collected to boost efficiency, productivity and uptime, plus help stay on track and on budget.







WORKING CAPITAL

Consider whether you are better off using a line-item expense for rental on your profit and loss statement versus tying up a lot of working capital in assets that you may or may not keep utilizing on a consistent and regular basis. If you have limited capital, where do you want to tie it up?

to a proactive repair-before-failure tactic. The end result, he says, is more efficient operations and increased fleet availability.

Christensen notes that United Rentals employs predictive analytics around major component wear-outs and failures, plus it has developed effective preventive maintenance schedules. This helps avoid or reduce breakdowns, along with the expense and loss of productivity related to them. ▼

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“We have to give customers the **confidence** that our trucks will be productive while on the job. A lot of times, our trucks are support pieces that work in conjunction with other companies, so if our machine goes down, it stops the entire production. We don’t want to be ‘that’ contractor.”

Guy Rimoldi, President, Southern Hydro Vac
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							Yes	Yes					
										Yes			
				Yes	Yes		Yes			Yes	Yes	Yes	
	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes			Yes	Yes
			Yes	Yes						Yes		Yes	Yes
				Yes							Yes	Yes	
	Yes			Yes		Yes	Yes			Yes	Yes	Yes	Yes

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Daunting Challenge

LONG, DEEP BORE TESTS CREWS AS THEY WORK TO INSTALL NEW WATER MAIN UNDER NEBRASKA'S NIOBRARA RIVER

BY KEN WYSOCKY

After the Spencer Dam in northern Nebraska collapsed in March 2019, public officials had numerous issues to contend with along with massive flooding, including a ruptured water main that left thousands of residents in Boyd County without water.

Even though the original 12-inch-diameter main ran about 10 feet under the riverbed, the dam's failure — triggered by immense pressure from the rain- and ice-floe-choked Niobrara River — still wiped it out. That's a testament to the raging power of the water and ice that flowed through the failed dam at 40,000 cubic feet per second, about 27 times faster than the normal flow rate at the dam, according to figures from the U.S. Geological Survey.

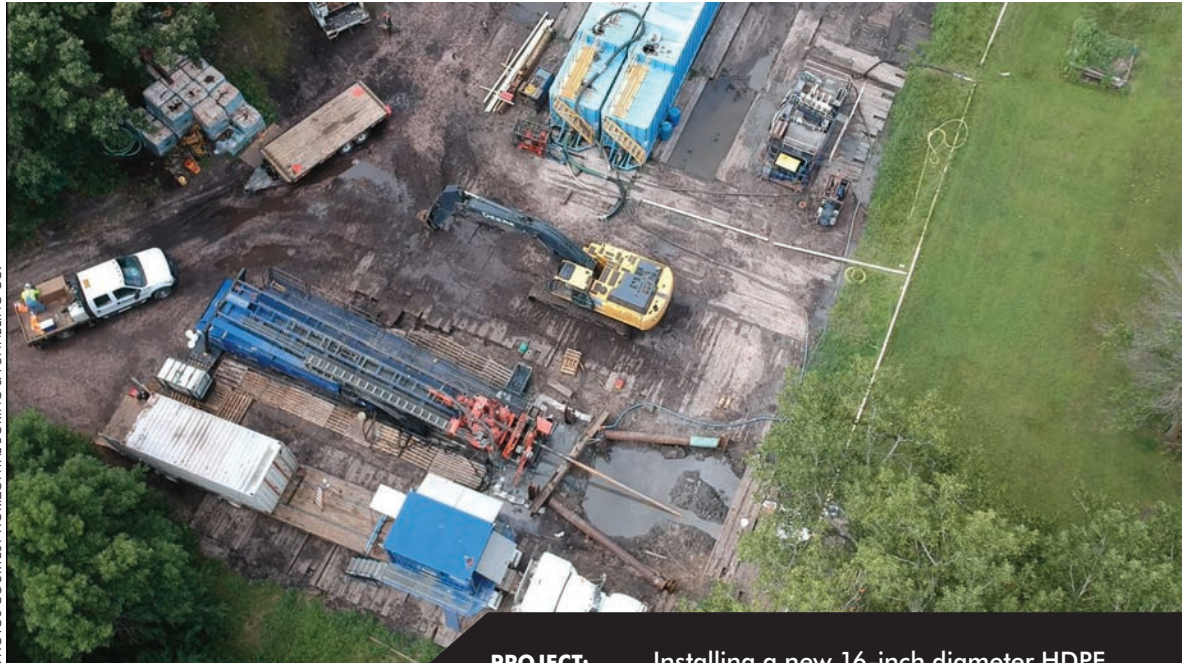
While officials used private wells to supply residents with limited amounts of nonpotable water that required sterilization, Horizontal Boring & Tunneling in Exeter was selected to install a new waterline.

The installation posed a daunting challenge: drilling a 4,320-foot bore, almost three-fourths of a mile long. Another complicating factor was the depth of the bore, which at its deepest point would run 80 feet below the riverbed.

But such jobs are nothing new to HBT, a company that's developed a reputation over the years for successfully taking on complex and difficult projects, says Brent Moore, owner and president of the company, established in 1982.

"We specialize in crossings that other contractors can't handle," Moore says. "I know we weren't the lowest bid, but they went with us because of our expertise, reputation and equipment. Unlike some of the other bidders, we had the equipment to do the job in one long crossing instead of two shorter shots."

The company's longest bore before this one was 2,600 feet. "It was a little daunting," Moore says. On the other hand, the company had already compiled a resume filled with challenging jobs, including difficult bores for fiber optic lines in the front range of the Rocky Mountains in Colorado, a 2,200-foot-



PHOTOS COURTESY HORIZONTAL BORING & TUNNELING CO.

The American Auger DD-440T horizontal directional drilling machine operated by Horizontal Boring & Tunneling sits at the entry pit of the directional drill job at the Niobrara River in Nebraska. The company also used mud-cleaning systems made by Triflo International and Mud Technology International, as well as a TT-660 mud pump manufactured by Tulsa Rig Iron.

PROJECT: Installing a new 16-inch diameter HDPE water main 80 feet below the Niobrara River in Boyd County, Nebraska, using a 4,320-foot directional drill bore

CUSTOMER: Boyd County, Nebraska

CONTRACTOR: Horizontal Boring & Tunneling Co. Inc. (Exeter, Nebraska)

EQUIPMENT: American Auger DD-440T horizontal directional drill; mud-cleaning systems from Triflo International and Mud Technology International; and a TT-600 mud pump manufactured by Tulsa Rig Iron

RESULTS: The five-month-long project started in April 2019 and concluded in late August. Work crews doubled in size from 10 to 20 for the last five weeks to ensure water service was restored as quickly as possible.

DOWN & DIRTY

long bore for a fiber optic line roughly 35 feet under the Mississippi River in Minnesota and a 2,000-foot-long bore for a 32-inch-diameter waterline under the Platte River for the city of North Platte, Nebraska.

"I KNOW WE WEREN'T THE LOWEST BID, BUT THEY WENT WITH US BECAUSE OF OUR EXPERTISE, REPUTATION AND EQUIPMENT. UNLIKE SOME OF THE OTHER BIDDERS, WE HAD THE EQUIPMENT TO DO THE JOB IN ONE LONG CROSSING INSTEAD OF TWO SHORTER SHOTS."

Brent Moore

GOING DEEP

The goal was to install the new pipe 80 feet below the riverbed in a layer of shale that should better protect the 16-inch-diameter HDPE from future mishaps. "That's about 40 to 60 feet deeper than usual, which made it a little more challenging," Moore says.

The five-month-long project started during the first week of April and concluded in late August, just before Labor Day weekend. The company initially used an American Auger DD-440T horizontal directional drilling machine, which produces 440,000 pounds of pullback force and 100,000 pounds of rotary torque.

"We like American Auger equipment," Moore says. "It's built heavy and is very reliable. And the company provides great customer service."

The company also used mud-cleaning systems made by Triflo International and Mud Technology International, as well as a TT-660 mud pump manufactured by Tulsa Rig Iron (up to 860 gpm at 975 psi).

The company started the pilot bore from the south side of river, with the drilling rig positioned about 105 feet above the river. But things got a little more challenging after drilling about 1,750 feet out, Moore says.

"We had a hard time maintaining mud circulation back to the rig," he explains. "Keep in mind that with the rig 105 feet above the river, we were trying to move the fluids 185 feet in total elevation and it's hard to get fluids to move uphill like that.

"In addition, shale is like a reactive clay," he continues. "It's hard to break it down and carry it with the fluids and suspend them enough to get them out of the hole."

SHIFT TO PLAN B

To solve the problem, HBT officials decided on a bold strategy: Move to the north side of the river and continue the pilot bore from there — and try to intersect with the first pilot hole. The elevation there was only 45 feet above the river, for a total elevation above the pilot bore of about 125 feet — roughly 60 feet less than on the south side of the river, Moore points out.

"We still had some problems maintaining circulation," he says. "We fracked out four or five times, but eventually we used different drilling fluids to seal up the frack-out and maintain circulation."

To guide the drill on the remaining 2,570 feet of the intricate pilot bore, the company relied on wireline-steering technology provided by Prime Horizontal. The technology provides more accurate readings than conventional walk-over steering, he says.

"That technology enabled us to intersect that 16-inch pilot hole," Moore says. "Trying to do an intersect like this wasn't very common 10 to 15 years ago. In fact, we tried to avoid doing them as much as possible.

"Even with this technology, it's not always successful," he adds. "So hitting the intersect was a big win for us. It saved us a couple weeks of drilling time compared to trying to drill out to the south side."



A contractor from Horizontal Boring & Tunneling gives an overview of the job site at the entry pit.



An aerial view of the job site from one side of the Niobrara River looking across to the other side. Crews had to drill a 4,320-foot bore under the river to replace a failed waterline.

"IT TAKES HARD WORK AND DEDICATED EMPLOYEES TO WORK THE LONG HOURS AND SPEND A LONG TIME AWAY FROM THEIR FAMILIES. WE'RE ONLY AS GOOD AS OUR EMPLOYEES."

Brent Moore

The pilot hole was created with a 6 5/8-inch-diameter drill pipe with a 1/4-inch bib. The crew then used a 24-inch HDX reamer manufactured by INROCK Drilling to make the bore big enough to accommodate bends and turns as the new pipe was inserted, as well as maintain circulation of drilling fluids, he says.

To get the water service restored as quickly as possible, HBT doubled the number of employees to 20 from 10 for the last five weeks of the project, essentially resulting in crews working 24-hour days. That move reflects the company's can-do attitude, Moore notes.

"It takes hard work and dedicated employees to work the long hours and spend a long time away from their families," he says. "We're only as good as our employees." ▼

Diving Into Technology

CLEARING UP FIVE MISCONCEPTIONS ABOUT TECHNOLOGY FOR SITE PREP CONTRACTORS

BY SANDRA MASON

From machine control to drone survey data, material takeoffs to volumetric calculations and progress reporting, site prep contractors have many ways they can incorporate new technologies into their workflow, but misconceptions are holding some contractors back.

Figuring out how to incorporate technology into their workflow can be a scary thing for many contractors, but it shouldn't be, according to Quantum Land Design officials. The company, based in Sperry, Iowa, specializes in managing and preparing site data required for including 3D machine control, drone data and takeoffs at any scale.

"We help contractors figure out how each piece of the technology puzzle can fit into their operation," says Ryan Murguia, president. "We can demonstrate different technology use cases they might have not considered."

Here are the five biggest misconceptions about technology for site prep contractors:

1. IT'S GOING TO BE DIFFICULT AND EXPENSIVE TO COLLECT DATA FROM A DRONE.

"There's a misconception that you need an expensive drone, someone who is highly trained, special survey equipment or a costly web service contract to process data," Murguia says.

Instead, Murguia says most of the equipment needed is already in place on the job site. The reality is that most contractors already have machine control and a GPS rover set up on the site.

"If you have that equipment, it's pretty straightforward to add a drone to help you collect topographic data," says Zach Pieper, operations manager. Pieper says he can teach someone in two to four hours how to get the data they need from a drone flight.

2. OLD WAYS OF MEASURING EARTHMOVING ARE MORE RELIABLE.

Site prep contractors are paid based on the amount of dirt moved, and historically those numbers have not been calculated, but estimated based on the truck count and the average amount in a truckload. According to Murguia, those estimates might be 20% to 50% off the actual amount of dirt moved.

Drone data is a game changer because it can capture accurate cut volumes based on millions of data points in minutes. Clients are assured of more accurate billing, and costly disputes are avoided.

Murguia says an engineer working on a hydraulic dam project didn't trust the data captured from drones, so he also used traditional surveying methods and compared them to the data from three flights.

"We were within 4% of the volume numbers, and they trusted our numbers based on drone data more," Murguia says.

3. WE NEED LARGE JOBS TO MAKE EFFECTIVE USE OF DRONES AND MACHINE CONTROL.

Another misconception is that machine control only makes sense for large jobs. "You can use it just for digging a basement," Murguia says.

In one use case, Quantum Land Design used drone data to create a machine control file to address drainage issues on a new-construction home site. With the expansion of machine control to excavators, the number of jobs using machine control is growing rapidly.

4. OUR FIRM CAN'T AFFORD TO OUTSOURCE.

While Pieper and Murguia recommend contractors capture their own data, they also believe that for most companies, it makes sense to outsource managing and manipulating the data.

"The learning curve is really in the office," Pieper says. Hardware and software is a big expense. Outsourcing makes the technology accessible to small firms that may not have the resources for an estimating department or data analysis. "The immediate value comes from making sure you get paid accurately for the work completed."

5. I CAN ONLY USE DRONE DATA FOR MEASURING STOCKPILES.

Pieper says contractors have a tendency to purchase a drone for a particular task, such as measuring stockpiles, and then use it only for that one task.

"THE LEARNING CURVE IS REALLY IN THE OFFICE. THE IMMEDIATE VALUE COMES FROM MAKING SURE YOU GET PAID ACCURATELY FOR THE WORK COMPLETED."

Zach Pieper

"There's so much more you can do with them that is valuable," Pieper says. In one use case, a customer saw some extraordinary results.

A quarry customer was having trouble with failing transmissions on their haul trucks. An analysis of the quarry survey data captured by the drone revealed steeper slopes than was specified for the haul trucks. After the haul road was redesigned to the proper specs, the company saved over \$300,000 in fuel and maintenance costs in one year.

"It took just four days, from drone flight to delivering the machine control model with the new haul road, and they were able to see the benefits immediately," Pieper says. "A traditional survey, design and construction staking process would have taken weeks and been far more dangerous in this situation." ▼

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SHOP TALK

Equipment operation is a big factor in keeping tabs on fuel usage. Companies can track this in different ways, including telematics.



Tips for Better Fuel Efficiency

GETTING THE MOST OUT OF EACH GALLON CAN BE AS SIMPLE AS WATCHING IDLE TIME AND HOW YOU OR YOUR CREWS OPERATE THE EQUIPMENT

BY PAT MONROE

Fuel is one of the greatest operating costs for any contractor who owns heavy equipment and/or trucks. Working in a way that can save fuel can end up saving a lot of money.

“To reduce fuel use, you have to know how and when fuel is being wasted,” says William “Bernie” Bernhard, technical and safety services manager for AEM, the Association of Equipment Manufacturers.

Start by examining top fuel usage influencers in off-highway applications. “Machines equipped with telematics can provide actionable data by tracking dozens of data points so workers can gain valuable insights to help save fuel,” Bernhard says.

IDLE TIME — A KEY FACTOR

Idle time is often the largest contributor to fuel inefficiency and a good start to manage fuel consumption. To decrease idle times, operators can take advantage of fuel-saving technology, such as auto-idle. Also popular is auto-shutdown where a machine can idle for a preset period of time.

Examine the patterns in your machine’s idle times. If a machine idles for short periods of time (a few seconds to a few minutes) frequently throughout the day, that may mean the machine is at a bottleneck in the workflow.

An example is when an operator has to wait for another operator to complete a task before continuing work. In this case, either machine selection, material location or some other job site factor needs to change to reduce idle time.

However, if a machine idles for several minutes at a time or more, infrequently throughout the day, that probably means the operator is not shutting down the machine when on break, when on the phone, when exiting the machine or when having their work interrupted for a longer period of time.

In these cases, a discussion is needed with the operator regarding company expectations, to take the necessary steps to decrease idle time.

EQUIPMENT OPERATION

How an operator uses a machine can influence fuel efficiency. Small changes in behavior can have large effects on fuel use.

One easy way operators can save fuel is by using the appropriate work mode, which makes it easier for operators to match the power needed to the application at hand.

“BY TRACKING HOW MUCH FUEL IS USED IN APPLICATIONS, THE AMOUNT AND TYPE OF IDLE TIME, AND ANALYZING OTHER MACHINE DATA, YOU CAN GET A GOOD PICTURE OF WHEN FUEL IS WASTED.”

William “Bernie” Bernhard

In order to set up a job site to optimize fuel use, a company needs to examine data related to job-site workflow, including equipment capacities, the number of each machine on site, equipment and material locations, terrain and more.

Maintenance is also an issue: for example, checking fuel filters on the machines from your suppliers, the storage tanks at your job sites and your base fuel storage facilities, according to Bernhard.

“By tracking how much fuel is used in applications, the amount and type of idle time, and analyzing other machine data, you can get a good picture of when fuel is wasted,” he says. “Combine this with fully understanding and using the fuel-saving features of your machines, and you will be able to get the most out of each gallon.” ▼



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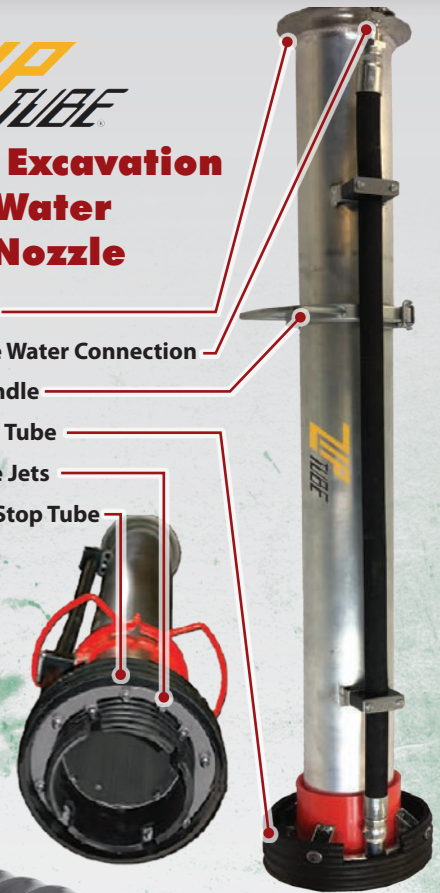
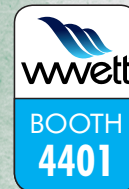
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5 Tips to Quickly Convert Invoices Into Cash

YOU CAN SOLVE THE AGE-OLD PROBLEM OF LAG TIME BETWEEN SERVICES RENDERED AND DOLLARS IN YOUR BANK ACCOUNT

BY ERIK GUNN

Cash flow is the lifeblood of your business. A hefty balance of accounts receivable might feel like it's money in the bank, but don't kid yourself. As long as they're unpaid, those receivables represent money in your *customer's* bank, not yours.

To boost your cash flow, you need to stay on top of those receivables, says Melinda M. Toy, vice president and director of treasury management for PyraMax Bank, a full-service commercial bank in suburban Milwaukee.

Toy offers a series of tips on how to do that, starting from the moment your customers agree to hire you for the service they need.

1. REQUIRE A SIGNED CONTRACT.

This doesn't have to be complicated. But getting your customer's signature on the proverbial dotted line makes it clear from the start that everyone knows the price and the expected outcome of your work and the terms and conditions of your transaction.

2. REQUIRE A DEPOSIT.

For a really short-term job, like doing a quick directional drill and pull of a short fiber line, this might not be realistic. But for a larger job, such as hydroexcavation of an area around an electrical substation or multiple dig sites, which will come with hefty labor costs and material dumping costs, a down payment offers financial protection.

3. INVOICE EARLY AND OFTEN.

Unless you're collecting immediately upon completion of the job, you can expect at least a day's lag for payment in the best of circumstances. But you want to do everything in your power to make sure that lag is as short as possible.

"The best practice should be to invoice upon completion of a project, shipping a product or completing a service," Toy says. If you want to get paid faster, don't fall into the practice of waiting for one day each week to send out invoices.

As much as possible, ask for payment on receipt. If you feel that's not possible or realistic, set a deadline of net 10 days (business days, not counting the weekends) for payment of a bill.

An alternative, especially for larger clients, is to offer a slightly longer payment window with a discount for early payment. For example, your invoice might set a net 30 days payment deadline for the full amount, but also offer a small



discount for customers who pay in 10 or 20 days from the date of the invoice.

"Deadlines for payment of course also need to factor into your business model," Toy points out. "If it's not possible to get paid in 10 days, maybe there are some efficiencies you can put in place to at least shorten the cycle."

4. MAKE IT CONVENIENT FOR CUSTOMERS TO PAY YOU.

Convenience is a two-way street. You want to make it convenient for your customers to pay as quickly as possible. But you also want to make it convenient for your business to convert that payment into cash on hand.

Literally demanding cash is probably *not* going to fly, for all kinds of reasons. The associated recordkeeping headaches and the fact you can't pay your *own* bills in cash are just two of them. Not to mention that you'll almost certainly turn away far more customers with a policy like that than you would with multiple payment options.

It's up to you if you want to refuse cash at all, but at the very least don't require it.

Taking checks is the most common practice. That's convenient for your customer and it should probably still be an option you offer. But how convenient is it for you, really? Remember, it still takes time to make the deposit.

"What about mobile deposit through my smartphone?" you might ask. That's a great convenience. It also comes with limitations, as the financial advice website Bankrate points out. Those include monthly limits on how much you can deposit by mobile and hold times for mobile deposits, especially after hours.

Credit card payment options have become standard, and easy to take with Square and similar swiping devices that attach to (once again) your smartphone or its bigger cousin, the tablet. Of course, there's also a fee that takes a bite out of your payment. Those usually combine a small flat-fee charge and a charge that is typically in the neighborhood of 2% of the bill.

Some merchants impose a transaction fee to offset those costs, but they can spark resistance among customers.

5. EXPLORE NEW OPTIONS.

Toy suggests another alternative to credit cards: automated clear-

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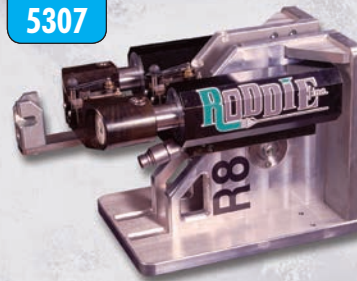
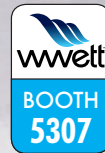
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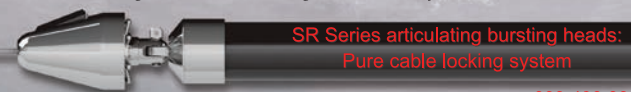


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ing house payments. ACH is a form of electronic funds transfer, she explains, and it's becoming increasingly popular with businesses, even small ones. Toy says some of PyraMax Bank's customers even use it to pay their own bills, including handling payroll and paying vendors.

And businesses can establish ACH payment options for their customers using portal services. "It's a faster way to get funds into your account. It's an alternative to a wire transfer," she explains.

ACH transactions typically settle within 24 hours, and same-day transfers through those systems are within our capability now. The system is more popular in Europe — "They more often settle those debits and credits the same day," Toy says — but catching on in the U.S.

ACH transactions have an advantage of much higher limits. Again, European countries, where limits are as high as \$1 million a day, are ahead of the U.S., where they're still at \$25,000 a day.

IF YOU WANT TO GET PAID FASTER, DON'T FALL INTO THE PRACTICE OF WAITING FOR ONE DAY EACH WEEK TO SEND OUT INVOICES.

SETTING UP

If you're interested in pursuing this newest approach to making payment easier — and therefore improving your business cash flow — have a conversation with the financial advisor who counsels your business. Only that professional will have access to the details about your personal circumstances that will be important in making a sound judgment.

But assuming you get sound advice that it's at least worth considering, Toy recommends these steps:

- Check with your financial institution's commercial banking department. If there's a treasury management office, such as Toy runs, that's your first stop. Otherwise, inquire about direct deposit options.

- Be prepared to present detailed financial operations records — perhaps two to three years' worth of tax returns — and to submit to a credit check. "ACH means some exposure to the bank," Toy points out, and so to agree to an arrangement demands due diligence on your banker's part.
- Be prepared for limits on ACH transactions, and make sure your typical revenue stream will fall within those limits.

Once you've gone through that mutual vetting process, you'll set up a payment portal connected to your website. Make sure it's easy for customers to get to and easy to navigate. Typically, Toy explains, the portal will give the customer the option of paying by credit card or to initiate an ACH transfer using information from their checking account.

There also will be some mechanism for securing customer permission before you're able to automatically debit their account.

THE PAYOFF

There's no question that moving to an ACH system for taking payments will require some due diligence to make sure it's right for your business. But given the resulting ease and convenience it can provide for you and your customers alike, it should be worth your while to at least look into the concept.

Because in today's digital financial world, it may be the closest you'll get to realizing that famed money management maxim — "cash is king." ▼

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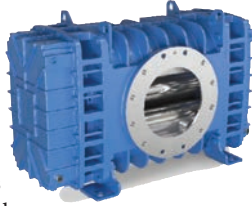
BY CRAIG MANDLI

Blowers

Gardner Denver Robuschi Tri-Flow 825

The Gardner Denver Robuschi Tri-Flow 825 blower for combination sewer jetter trucks achieves 19 inches Hg vacuum and delivers 4,311 cfm at 18 inches Hg and weighs less than 1,500 pounds, making it suitable for jetting and excavation work. Paired with the company's product-tuned silencer, the unit is quiet and uses 70% less space than a traditional silencer, according to the maker. For greater work site efficiency, it provides 6% higher flow and 7.2% more fuel efficiency at 18 inches Hg.

866-428-4890; www.gardnerdenver.com/robuschi



National Vacuum Equipment Challenger 1600

The Challenger 1600 high-vacuum blower from National Vacuum Equipment is a 1,600 cfm trilobe blower designed for continuous duty at maximum vacuum. It is available in ready-to-install hydraulic or belt-drive packages using corrosion-resistant stainless steel internal components. Available packages include silencers, check valves, moisture trap, cyclone, four-way vacuum/pressure changeover valve and a powder-coated skid.

800-253-5500; www.natvac.com



Centrifugal Pump

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 model sizes, 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



Diaphragm Pump

Myers Seth Pump DD-6

The DD-6 from Myers Seth Pump pulls the best attributes of four different types of pumps — double diaphragm, centrifugal, piston and rotary lobe — into one solution. It is capable of being used for the six most common methods of dewatering that are typically encountered on a job site, from simple to complex. The 6-inch, high-volume, double-diaphragm pump has a HATZ 1D81Z, 10 hp air-cooled diesel engine, enabling 140 max cfm. It features high head pressure and 3/8-inch steel construction to make it reliable and durable. It can pump 700



gpm, deliver 28 feet of vertical lift and move 4.5-inch solids, making it a great sludge and slurry pump as well. The Sound Attenuated Fully Enclosed version reduces noise output by up to 50%, making it ideal for metropolitan and urban environments.

904-389-6114; www.myerssethpumps.com

Mud/Slurry Pump

Hydra-Tech Pumps S4VHL

The S4VHL 4-inch hydraulic submersible sludge/slurry pump from Hydra-Tech Pumps offers 3-inch solids handling and head capabilities up to 210 feet. This heavy-duty slurry pump is designed to handle wastewater and sewage and will fit through a 20-inch-diameter manhole. Its primary applications are sewer bypass into force mains and general transfer of solids-laden fluids. Combined with HT25 to HT60 power units, it is capable of flows up to 750 gpm. This safe and variable-speed hydraulic drive submersible pump can be used where electric power is hazardous or impractical.

570-645-3779; www.hydra-tech.com



Transfer Pumps

Boerger BLUEline rotary lobe pump

The BLUEline rotary lobe pump from Boerger is a self-priming, valveless, positive displacement pump used to convey viscous and abrasive materials. There are 21 pump models in six series with pulsation-free operation, fully reversible rotation, dry-run capabilities and flow rates up to 7,500 gpm. The pumps are stable and wear-resistant with a maintenance-in-place design that allows for all wetted parts to be easily replaced through the front cover without the removal of pipe or drive systems.

612-435-7300; www.boerger.com



ScreenCO Systems Patz Shaft Drive Pumps

Patz Shaft Drive Pumps, distributed by ScreenCO Systems, are vertical pit pumps that can be used in above-ground or underground storage tanks and include choices of single- or three-phase electric motors. They have high solids and grit capacities with large centrifugal pumps and hardened steel impellers. High capacities include the 3333 series up to 500 gpm and the 4444 series up to 1,580 gpm. They can be deployed in depths from 3 feet to 12 feet 8 inches. The 6000 and 8000 series have a three-point hitch with PTO drive and can offer up to 3,500 gpm at depths from 6 to 12 feet. They can be used with an agitator nozzle to mix and pump fast. The 616 vertical prop agitator is capable of mixing at 9,000 gpm, keeping grit and solids mixed at pit depths of 6 to 16 feet.

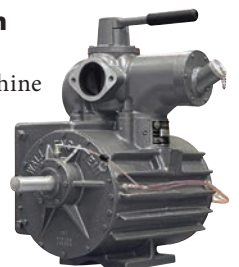
208-790-8770; www.screenocosystems.com



Vacuum Pumps

Elmira Machine Industries / Wallenstein Vacuum 753 Series

The 753 Series vacuum pump from Elmira Machine Industries / Wallenstein Vacuum incorporates extra-wide vanes that allow up to an inch of wear, designed for longer service life. It provides 422 cfm airflow at 1,200 rpm and is precision-machined to provide vacuum levels up to 28 inches Hg. Options include air, liquid or dual cooling systems where air injection is



combined with liquid cooling. A pump-flushing port is included on the top valve for convenient maintenance. The quick-access housing end plate allows for easy internal inspection with no bearings to pull. Oil lubrication is via a mechanical piston pump driven by shaft rotation or available with a sight-feed valve oil regulator system using vacuum/pressure to draw oil with no moving parts.

800-801-6663; www.wallenstein.com

Fruitland RCF870

The RCF870 vacuum pump from Fruitland is available in clockwise and counterclockwise rotation with top- and side-mount, four-way valve locations. The pump is available with hydraulic, angle (gearbox) and belt-drive options. It can be mounted on all Eliminator-style packages. It is a true 4-inch pump with 4-inch pipe connections producing 512 cfm and weighing 575 pounds. It is fan-forced air-cooled with an available air injection cooling system for continuous duty at higher vacuum. It includes an integral oil reservoir with low-consumption oil pump, an integral final filter and vane-wear test ports.

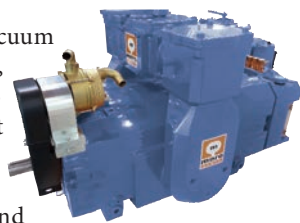
800-663-9003; www.fruitlandmanufacturing.com



Moro USA Storm Series PM3000

The Storm Series PM3000 liquid-cooled vacuum pump from Moro USA is suitable for heavy-duty, continuous use. It has oiled bearings with no grease points, a sealed positive displacement direct-feed oiling system, Kevlar vanes, integrated check valve coolant pump, and change-over valve that help provide ease-of-use and installation. It includes industrial-duty Viton oil seals for superior pump life and has a liquid-cooled casing to help maintain cooler temperatures inside the pump. It is available in clockwise and counterclockwise models.

866-383-6304; www.morousa.com



Presvac Systems PV750

The Presvac Systems PV750 rotary vane pump is designed for continuous full-vacuum operation in extreme conditions. It offers 400 cfm at free air, 350 cfm at 15 inches Hg, a maximum vacuum of 27 inches Hg and maximum pressure of 35 psi. Dual fans and twin ballast ports efficiently cool the pump. The solid housing with deep cooling ribs allows for greater heat transfer from the vacuum chamber. Aluminum fans and shrouding work like a heat exchanger to aid in heat reduction. Multiple manifold and drive options are available for truck, trailer or stationary applications.

800-387-7763; www.presvac.com



Washdown Pump

Water Cannon RG Series Pump

The RG Series Pump from Water Cannon Inc. - MWBE is rated for either 3.96 or 5.5 gpm at 1,450 rpm, and it has a nickel-plated manifold rated for 3,600 psi. It incorporates parts from the RK, XW and SHP Series pumps and combines them into an all-around heavy-duty pump, according to the maker. The footprint is the same as the RW and XW Series ARNA pumps, as well as the General 47 Series pumps.

800-333-9274; www.watercannon.com



Water Pumps

Cat Pumps 4DX Series

Cat Pumps 4DX Series high-pressure pumps with premium DC electric motors provide on-the-go pressure wash power. These systems handle a variety of applications, including portable restroom cleaning, air-conditioner fan cleaning, and equipment and surface washdown. The pump and motor assemblies provide 1 to 3 gpm at pressures from 400 to 1,000 psi and utilize any standard direct current power source. Convenient integrated unloaders accurately set and maintain system pressure. Reliable and easy to service, the built-in unloaders divert water flow during bypass, reducing the load on the pump and motor and increasing system life. Crankcase oil is pre-filled so pumps are ready to use. Multiple build-to-order configurations are available to fit a variety of needs.

763-780-5440; www.catpumps.com



Dynablast Pratisoli HY-PACK KF28ASPF-P108CC

The Pratisoli HY-PACK KF28ASPF-P108CC water pump package from Dynablast provides 24 gpm at 2,900 psi and 1,000 rpm. It includes a T14 female spline shaft input and SAE C 2/4 bolt flange with Interpump 108CC FOX piston hydraulic motor. It has a 420 forged stainless steel nickel-coated manifold, stainless steel valve cages for increased valve life, a self-lubricating design with no oiler kit or weekly oiling required, a symmetrical crankcase with an easy-to-reverse shaft, internal fins on the aluminum crankcase to provide cooling to lower oil temperature, a tapered roller bearing for improved lateral loading, and two-bore ceramic plungers, with thicker ceramic on the water end to prevent from thermal shock.

905-867-4642; www.dynablast.ca



Pump Part/Component

Pressure Lift Power Booster

The Power Booster from Pressure Lift has Versa-Flow technology to help minimize worker hours and allow the user to combine multiple pieces of equipment, increasing workloads and reducing job expenses. The user can combine pressure washers or jetters with any vacuum equipment. Versa-Flow technology breaks up soils and decreases load times, streamlines projects and helps minimize maintenance cost.

866-504-6596; www.pressurelift.com



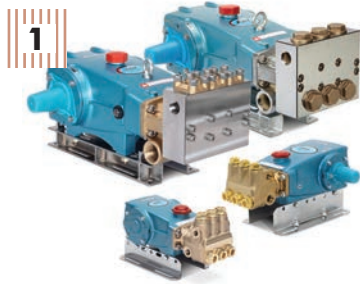
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THE LATEST: Products



1. Cat Pumps hydroexcavating pumps

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

2. Subsite Electronics UtiliGuard 2 locating system

The UtiliGuard 2 locating system from Subsite Electronics is a new multifrequency utility locator based on the UtiliGuard system. It uses automatic integrated data capture to provide information that can be used to prove or track performance, compare with benchmarks and provide actionable outcomes to help increase quality, reduce cable strikes and increase productivity. Available in standard and advanced models, an integrated GPS positioning improves accuracy and reporting. An all-new user interface features simplified graphics that are easier and quicker to interpret. It also offers a 5- or 12-watt transmitter that drives signals farther down large, direct-buried utilities. The system also provides both the horizontal and vertical distance to the utility to make accurate locates of obstructed utilities. **800-846-2713; www.subsite.com**

3. tinbin TC2 suction excavator attachment

The tinbin TC2 excavator attachment can dig without the use of water, eliminating issues related to slurry disposal. In addition, because of its dry excavation capabilities, the attachment can dump the spoils beside the hole, and the materials can be used later or taken away without disposal fees. The large, 10-inch-diameter suction tube can be rotated to disrupt material to aid in suction or turned off to expose utilities. A manual hose attachment can be used to reach around tree roots and cables. **905-928-6415; www.tinbincanam.com**

4. Vermeer PD5 and PD5R pile drivers

The Vermeer PD5 and PD5R pile drivers combine efficient operation and accuracy into a compact, lightweight machine well suited for working on smaller solar installation projects, congested job sites, and civil fencing and guardrail installation applications. With a 15-foot mast that can remain fully assembled when transporting and aided by a 90-degree rotating platform, the design of pile drivers can help ease the setup and teardown process. With transportation weights of 10,350 pounds for the PD5 and 10,300 pounds for the PD5R, multiple units can be transported on a single trailer. Both machines can use an optional laser

receiver or a compatible third-party GPS system to help improve productivity by better aligning the machine to the specified pile install location. **800-837-6337; www.vermeer.com**

5. McElroy In-Ditch 1600 fusion machine

The In-Ditch 1600 large-diameter fusion machine from McElroy is designed for fusing pipe up to 65 inches in outside diameter in challenging, close-quarter working environments. It has a compact, two-jaw carriage and a top-loading heater and facer for added flexibility. The machine is capable of fusing onto as little as 15 inches of exposed pipe with minimal excavation required. Multiple lifting points, a carriage spreader bar and skidded carriage provide ease of mobility and fit within a small envelope. A roll cage helps protect the carriage and hydraulics as they are lowered into the ditch. **918-836-8611; www.mcelroy.com**

6. Custom Auger Systems horizontal boring auger kit

The hand-held horizontal boring kit from Custom Auger Systems combines horizontal auger boring with the power of heavy-duty electric drills to bore distances of 5 to 30 feet or more underground. It leaves minimal disturbance to the surrounding landscape and is designed in sections so it can be used in tight spaces. An insulating drill chuck adapter helps protect the user from electric shock. The kit can be used for installation of PVC pipe under existing foundations or driveways, running gutter systems or irrigation lines under sidewalks, or shooting pipe under landscaping or other permanent installations. It requires only one person for operation and is less damaging to landscaping than sawing and trenching. **865-585-7861; www.customaugers.com**

7. Vanair integrated separator tank

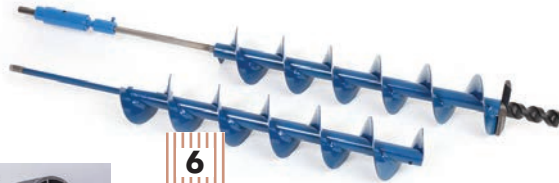
Vanair integrated separator tank features integrated manifolds containing a minimum pressure valve, thermo-valve, thermistors, transducers, pressure regulators, oil filter, ultrasonic oil level sensors and optional cold-weather oil heater. It also features SAE O-Ring and JIC connections, virtually eliminating leak points associated with conventional galvanized pipe fitting designs. The tank is shipped fully assembled and ready for final mounting, reducing installation time. It also features a redesigned coalescing element with 50% greater surface media, doubling the design life up to 6,000 hours. **800-526-8817; www.vanair.com**

8. VMAC UNDERHOOD air compressor for 2019 models

VMAC released the UNDERHOOD 70 air compressor installation kit for 2019 Chevy and International trucks. It is now available for International 6.6-liter Duramax V8 diesel trucks on the CV 515 chassis, as well as GMC C4500 through C6500 6.6-liter Duramax V8 diesel trucks.



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The compressor kit is lightweight, saves space and delivers air power on demand in any climate. The UNDERHOOD 70 kits are ideal for operating small to medium-sized air tools like 1-inch impact wrenches, 60-pound jackhammers, backfill tampers, vertical/horizontal grinders and sanders. **800-738-8622; www.vmacair.com**

9. Felling Trailers self-loading turret reel trailer

Felling Trailers' self-loading turret reel trailer has a 360-degree, hydraulically operated rotating turret assembly that can lock into any position when the directional control valve is released. The turret's self-loading feature eliminates the need to have extra equipment and operators on site to lift and load the reel as on a fixed reel trailer. The hydraulic payout/takeup assembly is a sealed gear-driven unit, so there are no chains or sprockets to break or wear out. The drive unit is smooth and quiet to operate and

easily engages and disengages from the reel bar. It also has optional hydraulic braking capabilities. Hydraulic brake tensioning eliminates the heat generated by traditional caliper and rotor, reducing line gallop and allowing for a longer tensioning duration. **800-245-2809; www.felling.com**

10. Ditch Witch JT24 directional drill

The JT24 directional drill from Ditch Witch is equipped with a 101 gross hp, Tier 4- and European Stage 5-compliant Cummins diesel engine. The unit offers 24,000 pounds of thrust and pullback while maintaining a small footprint on a wide range of urban and residential gas, fiber and other utility installations. A new hydraulic platform maximizes drilling efficiency and conserves horsepower downhole. It holds up to 400 feet of drill pipe on board, allowing for longer bores. **800-654-6481; www.ditchwitch.com**

This Issue's Feature:

Pipe plugs designed for easier maneuverability

BY CRAIG MANDLI

Pipe plugs are useful tools for sewer maintenance crews. They are designed to accommodate emergency pipe plugging, pipeline construction and pipe rehabilitation, and they are versatile, as even the largest-diameter plugs can be deflated down for insertion and for plugging through a hot tap. **Multi-Flex 114 and 115 Series medium-duty plugs** from **Petersen Products** are designed with a compact diameter, allowing them to inflate up to eight times their deflated size for easy insertion. Most sizes afford easy placement by one person while their flexibility allows the plugs to navigate through small hot taps or branch pipe and into a large pipeline before then inflating with air or water. According to Phil Lundman, Petersen CEO, the medium-duty plugs are more versatile than other similar-style pipe plugs.

"Not only are they resistant to oil damage, but they also have a greater deflate-to-inflate diameter ratio, which gives them more flexibility to get around corners," he says. "The synthetic materials used to construct these plugs also give them a greater temperature and chemical resistance than previous models."

The plug's small deflated diameter allows less storage area and reduces the man-hours required for pipe plugging application. Petersen supplies bigger

Multi-Flex 114 and 115 Series from Petersen Products



plugs for large-diameter pipelines with high backpressure requirements. The 114 and 115 Series, though, were designed for medium-duty applications. Custom configurations are also available for chemical pressure or size requirements.

"We've offered pipe plugs for a long time, but they are a product we are continually evolving and making improvements on," Lundman says. "They are very specialized and have multiple capabilities in the industry. Those who use them can't live without them."

According to Lundman, contractors employing the 114 and 115 Series in the field are encouraged by the results, especially with how maneuverable they are in the pipe. "They are easier to use than previous pipe plug models, and because they can go around bends and be maneuvered easier within the pipe, it makes them a better fit for use in confined spaces," he says. "Because they take up so little space, they cost much less to haul and store. That adds up to significant savings over time."

800-926-1526; www.petersenproducts.com

THE LATEST: News

Yanmar Group acquires ASV Holdings, ASV adds to dealer network

Yanmar Group announced the completion of its acquisition of compact equipment manufacturer ASV Holdings. The announcement is the final step in the acquisition, following from the June disclosure of a definitive agreement to acquire the company through the mechanism of a statutory merger. In addition, ASV Holdings added C.N. Wood to its dealer network. With six locations across Massachusetts, Rhode Island, Connecticut and Maine, the dealer will offer all ASV Posi-Track compact track loaders and ASV's full line of skid-steer loaders.

Brokk opens doors to new facility

Brokk announced it relocated to a new distribution and service facility in Stanhope, New Jersey. The new building is in the same industrial complex as the original location but offers the company 33% more space for increased inventory. The added space also allows the Stanhope team to offer Brokk demonstrations on site.

East promotes Kenney

East announced the promotion of Douglas Kenney to director of national fleet sales. In his new position, he will continue to be responsible for fleet sales in North America while strengthening the fleet sales department's national presence and enhancing East's position as an industry leader in the platform marketplace.



Douglas Kenney

Doosan Portable Power names new distributor

Doosan Portable Power named Rish Equipment Co. as an authorized distributor. Rish Equipment will supply Doosan Portable Power air compressors, generators, light towers and light compaction equipment at 14 locations across portions of Virginia, West Virginia and Maryland. ▼

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Happenings

CALENDAR

Jan. 26-31

Underground Contractors Association of Illinois Annual Convention, Grand Fiesta Americana, Puerto Vallarta, Mexico. Visit www.uca.org

Jan. 28-30

Underground Construction Technology (UCT) International Conference & Exhibition, Fort Worth Convention Center, Fort Worth, Texas. Visit www.uctonline.com.

Feb. 10-11

Horizontal Directional Drilling Academy: Mastering Crossing Applications, Talking Stick Resort, Scottsdale, Arizona. Visit www.hddacademy.com.

Feb. 17-20

Water & Wastewater Equipment, Treatment & Transport (WWETT) Show, Indianapolis Convention Center, Indianapolis. Visit www.wwettshow.com.

Feb. 27-29

National Utility Contractors Association (NUCA) Annual Convention & Exhibit, Loews Ventana Canyon Resort, Tucson, Arizona. Visit www.nuca.com/convention.

March 10-14

CONEXPO-CON/AGG, Las Vegas Convention Center, Las Vegas. Visit www.conexpoconagg.com.

March 24-26

Common Ground Alliance (CGA) Excavation Safety Conference & Expo, Palm Springs Convention Center, Palm Springs, California. Visit www.cgaconference.com.

March 26-28

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

April 5-9

North American Society for Trenchless Technology (NASTT) No-Dig Show, Colorado Convention Center, Denver. Visit www.nodigshow.com.

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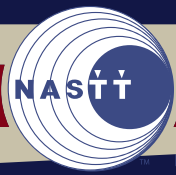
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Maria Stevens | Senior Civil Engineering Specialist, City of Seattle, Seattle Public Utilities



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