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May 2013

features

30 Profile: No Subs Needed By Briana Jones



On the cover: Jade and Randy Rushing, owners of Peetless Plumbing in Phoenix, Ariz., have been in business since 1984. They don't subcontract any of their work, and they've built strong relationships with other plumbing and drain cleaning contractors in the area, which has been a big boost for their business. (Photography by Mark Skainy)

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Luke Laggls editor@cleaner.com

THE BEST CONTRACTORS PUT A LOT OF EFFORT INTO SEEING EVEN THE SIMPLEST JOBS THROUGH TO COMPLETION

BY LUKE LAGGIS

ometimes, even when it seems like challenges are insurmountable and problems will derail a project, things just come together. It's not by chance and it's not some sort of divine intervention; it's your hard work and preparation paying off.

Sometimes putting together this magazine is the same way. Planning doesn't always materialize into results, stories fall through, and photos don't always work out. In your business, blocked pipes don't clear as easily as they should, bursting heads gets stuck, and terrain can limit access to a section of pipe that requires attention.

In a way, it's all the same. We each have a job to do; we all face challenges; and in the end, we always get the job done. I've served as editor of several publications, and one way or another, every issue has made it to press. It's not always easy, but neither is your job.

In a way, it's all the same. We each have a job to do; we all face challenges; and in the end, we always get the job done.

This month's issue of *Cleaner* features a few stories that are a testament to seeing the job through. Peerless Plumbing, profiled on page 30, has been in business for 28 years, and owner Randy Rushing attributes the company's success to its trademark one-stop services offering. They are a complete solutions provider, even handling drywall repair and patching so there are no holes in walls or floors when they're done with a job. Everything is complete when they leave the site. That is one of the many reasons they're able to generate business through repeat customers and word-of-mouth advertising. Affordable Trenchless & Pipe Lining, profiled on page 14, is also a solutions provider, serving as a subcontractor tackling the tasks prime contractors can't or won't handle. Owner Ryan Petersen faced a big challenge when he adopted this business model: Contractors were reluctant to hire him because they thought he would try to take their clients. Petersen took a calculated approach, and after doing jobs for a couple contractors, he was able to use them as references for additional work. He proved his ability and never wavered on his word that he would not compete for clients. He says it was the most difficult job of building his business, but he's proven himself and the company is thriving.

This month's "Tough Job" feature is a great example of working through challenges to get the job done. TRIC Tools was subcontracted to pipe burst multiple industrial wastewater lines at a food processing plant in San Jose, Calif. They couldn't interrupt production and had to follow strict sanitary guidelines while working in the facility. At one point, they were bursting under a 4-foot slab that held large liquid storage tanks. At another point, they were short on space for the HDPE pipe they were installing. One section had multiple tie-ins and the back wall of one of the entry pits kept caving in behind the resistance plate they had put in place, but through it all, they got the job done and never interrupted production at the facility.

It's not by luck that we succeed; it's through hard work and careful preparation. Those are the ingredients that produce luck and success. I hope these stories help you create your own success.

Enjoy this month's issue.







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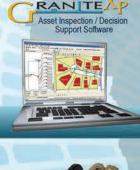


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OLD SCHOOL WITH NEW THE OLD SCHOOL WITH A CALIFORNIA CONTRACTOR FINDS A NICHE AS A TRUSTED SUBCONTRACTOR SPECIALIZING IN TRENCHLESS REHABILITATION ACROSS THE STATE BY MARIAN BOND

Ryan Petersen has seen his industry from several different perspectives over the course of 20 years. He knows what it's like to work in a one- or two-man plumbing and drain cleaning operation. He has also headed up his own plumbing firm with six technicians and six service vans, but he found his comfort zone specializing in trenchless rehabilitation with two technicians, in addition to himself, and wife Karen running the office. Petersen launched his own company, originally called Express Plumbing, in 2002 and quickly built it up to the complement of six technicians. After evaluating his priorities and considering the responsibilities involved with running a larger staff, he scaled back. Through that process, he established a model that has propelled the company, based in Sacramento, Calif., into one that is both innovative and highly successful.

A name change accompanied the shift in business strategy. The company is now known as Affordable Trenchless & Pipe Lining, which Petersen says better reflects its focus. (continued)

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EXPANSION ON THE HORIZON

The strategy shift was spured by Petersen's discovery of pipe bursting, which had become an attractive and in-demand service, and the opportunities available for subcontractors. Affordable Trenchless now works throughout the Golden State, sometimes traveling as far as 400 miles to provide services for prime contractors.

"If I have a subcontract involving a specific chain operation, say a specific coffee shop, I guarantee you will never see me in one of those unless it is for the contractor we initially worked for. And if a next-door neighbor of that coffee shop calls to ask if we can help them out, we will refer that call to our contractor client." Ryan Petersen

What made this mission so challenging, and subsequently successful, is that Petersen first had to convince contractors he would never in any way attempt to take away clients. That was the tough part because people in the industry tended to be skeptical. Over the years, however, the company has earned the trust of its clients, providing a growing list of contractor customers.

"Pipe bursting was the first expanded service in 2004 because the technology was faster and we didn't have to dig," Petersen says. "Other companies in town were offering this and we wanted to keep up with what was going on. Brent Foreman and Gilbert Guerrero re-instate a pipeline using an IMS Micro Cutter and CutCam from IMS Robotics.

profile

AFFORDABLE TRENCHLESS & PIPE LINING, SERVING NORTHERN AND CENTRAL CALIFORNIA, BASED IN SACRAMENTO		
OWNERS:	Ryan and Karen Petersen	
ESTABLISHED:	2002	
SERVICES:	Pipe bursting, relining, reinstating, televising, drain cleaning, basic plumbing	
CUSTOMERS:	Plumbing contractors, electrical contractors, engineering firms, residential, reattors, commercial, municipal	
EMPLOYEES:	Two technicians	
WEBSITE:	www.ydlg.com	

That was when we also scaled back to having just two technicians."

The company purchased TRIC Tools equipment and the service quickly became a staple of their menu. Relining came along in 2006 when Petersen began working as a subcontractor repairing 2- to 6-inch sewer lines on a series of gas stations throughout the state.

"The contractor wanted us to come up with a method other than pipe bursting, and that is how we got involved with relining," Petersen says. "We went to Perma-Liner Industries and bought their lateral lining system."



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Brent Foreman and Gilbert Guerrero use a Perma-Lateral Inversion Unit by Perma-Liner Industries to shoot a lateral liner under a home in Sacramento, Calif.

Having this capability and equipment has provided opportunities with other contractors as well. In recent months, he has added more capabilities, and now offers manhole-to-manhole lining with Perma-Liner equipment. He also offers reinstating with a CUES-equipped van, filling yet another need for his customers.

THE PATH TO PRESTIGE

Petersen has been diligent in assuring contractors that his company will never cross over and take business from them, which he says is the hardest part of the business.

"If I have a subcontract involving a specific chain operation, say a specific coffee shop, I guarantee you will never see me in one of those unless it is for the contractor we initially worked for," Petersen says. "And if a next-door neighbor of that coffee shop calls to ask if we can help them out, we will refer that call to our contractor client."

Affordable Trenchless worked for a couple contractors early on and was then able to use them as references, which helped the contractor customer list grow. "We had an agreement with the contractor we worked with doing gas stations that I would travel anywhere in California, if they would use me exclusively. Over the last seven years, we have performed for this contractor throughout the state."

"I am able to wholesale my pricing to the contractor because I don't have the costs of a big staff and big shop with multiple trucks. The contractor does not have to have the pipe bursting or relining equipment, the television cameras." Ryan Petersen

Petersen's clients are all important, and while he notes that he and his two technicians have tackled some big jobs, there is no job too small to put on the schedule. A recent example was a job in Long Beach (some 400 miles south) where they needed to reinstate one hole in a 4-inch pipe. They were there with their IMS Robotics micro cutter, which has helped stake out another important piece of territory.

"Having this tool has contributed greatly to our success," says Petersen. "We can not only line but reinstate the small-scale pipe. We just used this on a large hospital project in San Francisco."

TRUST AND TEAMWORK PAY OFF

Ryan Petersen says he was initially focused on establishing a small plumbing company serving customers in the Sacramento, Calif., metropolitan area and had no thought of working all across the state as a subcontractor. When he got his first chance to subcontract out of the region, however, the referrals requesting his services began to come in and he changed his focus.

Over the past eight years, Petersen has served as a subcontractor to engineering firms and plumbing and electrical contractors.

"I accumulated a lot of equipment others guys did not have," says Petersen. "It is not the size of my company that has helped us grow, but the reputation, plus having the newest technology."

Peterson says they do 50 percent commercial, 30 percent residential and 20 percent municipal work. They serve as a subcontractor on 90 percent of their commercial work. Residential clients tend to be homeowners and realtors. About 40 percent of work is in the Sacramento area.

*Over these years, we have worked for contractor customers using trenchless technology primarily in relining, doing everything from railroad stations, sewer treatment plants, convenience stores, coffee shops, wineries, and the list goes on and on. And we have promoted our services by word of mouth and with the reputation we have established."

Petersen has maintained the philosophy handed down from his 73-year-old father, Ron Petersen, who continues to operate his one-man plumbing company, A&R Plumbing, in Elk Grove, Calif. It is what Petersen likes to call the old school principle of conducting business on a handshake and sticking to it.

His philosophy is to follow that culture while offering the best in technology. There have been challenges, but Petersen says he wants to keep things simple and manageable. "Bigger is not always better."



Petersen explains that in most instances, they bring the equipment and experience to a project, while the prime contractor provides extra manpower. But someone from Affordable Trenchless is always in control when it comes to operating the company's sensitive equipment.

"I work with them on their projects with their guys," Petersen says. "This way, I do not have to carry the manpower and that overhead. I am able to wholesale my pricing to the contractor because I don't have the costs of a big staff and big shop with multiple trucks. The contractor does not have to have the pipe bursting or relining equipment, the television cameras."

"Contractors are able to bid jobs off my per-footage price because it doesn't matter if we are in Bakersfield, Redding or Sacramento. I'm still doing the same job, but just have to make up for the travel time and expenses involved." Ryan Petersen

STRAIGHT ARROW

In order to maintain his position as a subcontractor with the initial client, Petersen relies on the technician provided by the prime contractor to address any questions related to the job, such as pricing.

"There is no passing of business cards," Petersen says. "We want the client to view our position as a subordinate only. We respond in a professional and courteous manner, but we defer to the representative from the prime contractor."

Petersen and his team have had jobs last as long as four weeks, and the cost of their travel and all expenses are figured into the bid. They will spend a week working and head home for the weekend. They have worked from the Nevada state line to the San Francisco Bay Area (about 190 miles) and from Ryan Peterson adds commentary to a video during a CCTV inspection with the company's CUES inspection truck.

Bakersfield to Redding (400-plus miles). The base price for the work is set by the footage and does not vary from one area to the next.

"Contractors are able to bid jobs off my per-footage price because it doesn't matter if we are in Bakersfield, Redding or Sacramento," Petersen says. "I'm still doing the same job, but just have to make up for the travel time and expenses involved."

Petersen says they do a minimal amount of municipal work because he does not have the office staff required to take care of all the paperwork that is involved. "Commercial is more my cup of tea," he says.

(continued)

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Ryan and Karen Peterson, stand with their two yellow labs alongside their fleet of vehicles at the company's location in Carmichael, Calif.

Because their work covers such an extensive area, conditions and regulations vary significantly. Pipes in need of repair are typically rotted cast iron, broken-up clay, and old collapsed Orangeburg. Roots are a common issue, and gas stations and convenience stores often have lines that have been damaged by the caustic nature of soft drinks.



With residential trenchless repair, each city tends to have its own set of rules. For example, in the City of Sacramento, the homeowner is responsible for their own lateral line to the fence line or sidewalk. In the San Francisco Bay Area, the customer will often be responsible to the middle of the street.

"It's possible in some cities, because of requirements when working for a residential client, we might be pipe bursting to the sidewalk, and then relining to the middle of the street," Petersen says.

A GRADE FOR EQUIPMENT

Covering all of California for everything from small reinstatements to large pipe bursting jobs requires a capable fleet and a fully stocked toolbox. In addition to a variety of service vans and trucks, Affordable Trenchless relies on its CUES cutter truck, a 1998 GMC P3500 with two CUES truck-mounted NightOwl CP036 pan-and-tilt color cameras, two Ultra Shorty Crawlers (CUES), and a Bowman Dominator 430 cutter

Other key pieces of equipment include the Perma-Lateral Inversion System (for 2- to 8-inch-diameter lines) with the Maverick II Hot Water Cure, the Perma-Main Continuous Lining Top Gun (for 4- to 14-inch

lines) with the Viper Steam Cure, and Perma-Patch (mainly for 4- to 6-inch spot repair), all from Perma-Liner Industries, Inc.

Affordable Trenchless also relies on a Ring-O-Matic vacuum trailer, an Ingersoll Rand air compressor, a 2008 Hydro Jetter by General Pump (2,500 psi/18 gpm) and several RIDGID inspection cameras.

THE ASSIGNMENT

"We take our jobs as they come," notes Petersen. "One day we are televising a line to give an estimate in one town, and the next day we are redoing a shopping center in another. Our work schedule is probably about one week out except for larger jobs.

He says the company has been successful working with other contractors because it doesn't matter if they're working on the biggest job or the smallest, every customer is going to be treated the same.

The most rewarding aspect of running the company, Petersen says, is the reputation he has established and the fact that Affordable Trenchless has become one of the biggest subcontractors in the state. Still, wearing the many hats of owner, manager and technician presents challenges.

"It is hard," he says. "Once again I recall advice from my dad, who always said 'You have to be out on the job: in the ditches digging with the guys. You earn their respect, and that of your customers, and you are sure every job is taken care of properly.' For me, as owner, success does not mean sitting behind a desk, or having a Ferrari in the driveway, or making a lot of money. For me, it's the reputation and offering the latest available technology." c

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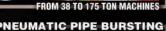
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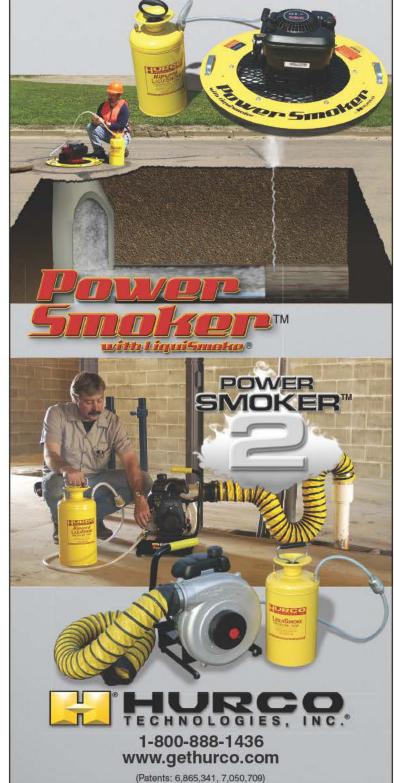
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Find Your Profit Niche

SPECIALTY JOBS CAN BE A GREAT SOURCE OF ADDITIONAL INCOME IF YOU PLAN PROPERLY AND PLAY OFF YOUR STRENGTHS

BY JIM AANDERUD

ost of you work in very competitive markets and constantly struggle to maintain your profit margins. With more and more contractors entering the market each day, competition for available projects has heated up considerably. In most areas, prices have dropped dramatically as contractors battle just to maintain their market share. Many have found themselves bidding uncomfortably low just to keep their crews working.

It's not uncommon to see business owners disillusioned by the state of their industry, but rather than giving up, there are things that can be done in order to stay competitive and increase profit margins. Becoming more efficient is an important step in that direction. By providing good training and improved work techniques, and by investing in state-of-the-art tools, production levels can be increased significantly.

Tracking jobs closely is a major key to financial success. By ensuring that each hour of each day is run as cost-effectively as possible, you can guarantee that all your jobs run profitably.

SPECIALTY JOBS

An option to consider in the quest for profitability is to find work that allows you to charge a premium for your services. This may sound unrealistic, but it can be accomplished by finding market niches that play into your personal and company strengths.

The type of specialty work you choose must play into your background and experience. It needs to be something that you not only have the ability to perform but the passion to learn and excel at.

Specialty jobs provide an opportunity to boost margins by working in areas within the industry that have less competition. For the most part, these types of jobs aren't available on a consistent basis, so most contractors aren't interested in them. But by zeroing in on specialty work, you can offer additional services that can increase your bottom line.

Any work that falls outside the primary industry activities can be considered specialty work. It may not be the cleaning of hundreds of thousands of feet of mainline sewer, for example, but it could be the cleaning of siphons that require special tools and skills. It may not be the standard CCTV inspection of an entire sanitary sewer basin, but it could be the inspection of hard-toTech Perspective looks at technology-related issues and provides information and advice that cleaning professionals can apply to equipment selection and to their daily work in the field. Industry members are welcome to offer ideas for this column. Please direct them to editor Luke Laggis, editor@cleaner.com.



A vacuum truck operator prepares to insert an ENZ USA Ejector nozzle into a 48-inch siphon.

reach access points that require hand-carried equipment. And it may not be the lining of miles of pipelines, but it could be ancillary work such as top hat installation.

Your niche could even be something that's common in other parts of the country, but not necessarily in your market. Trade shows and trade magazines such as *Cleaner* are ideal places to research and identify some of these options.

Taking on specialized work allows you to become an industry expert in a relatively short period of time. Since these jobs don't come up regularly, you can pursue them with little to no competition. Before long, you will find yourself capable of performing the work better and more efficiently than anyone else. Over time, the word will get out and this type of work will come to you more regularly.

A contractor once told me that he made his biggest profits from specialty jobs. He explained that when customers came to him, they rarely questioned the price because they were so relieved to have finally found someone who could perform the work. Customers understand that specialty work requires special tools and skills and are therefore more willing to pay a premium for those services. (continued)



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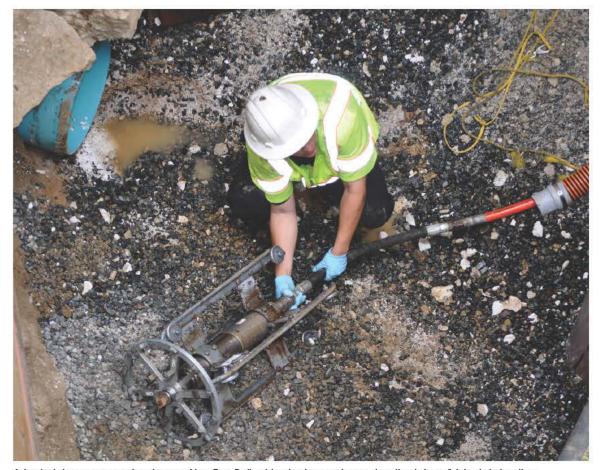




PRECAUTIONS

Since specialty work may not be steady, investing in expensive equipment may not be the wisest thing to do. The equipment could sit for long periods of time without paying for itself, at least initially. In fact, the best way to expand into these fields is to find specialty work that complements your current business and utilizes the equipment you already have. For example, if you currently clean pipelines and already have a combination unit, specialty work like hydroexcavation will require a minimal investment. The tools required for this type of work are inexpensive in comparison to the cost of a new combo unit. Plus, it's a lot easier to justify the cost of tools and nozzles — rather than a combination unit - sitting on the shelf for extended periods of time.

Contractors sometimes become enamored with a particular process that is completely outside their field of expertise. For example, they may specialize in pipeline inspections and decide that they want to try making money by raising manholes. These are two completely different fields that



A technician prepares to place a NozzTeq Paikert hydro torque impact cutter into a 16-inch brine line.

require entirely different skill sets. Because this work is not available every day, hiring individuals specifically for these jobs is not practical, at least not in the beginning. You are completely misusing your talent if you take a CCTV inspection operator and shift him over to raise manholes. Computer-oriented individuals aren't wired for that kind of work and may not stick around if they are forced into it. The answer is to use individuals in their area of expertise. CCTV inspection operators, for example, would be better suited to do specialty work such as manhole inspections or even GPS locating.

It is also important to consider how your company will be perceived by adding a new service. It is possible that it could hurt your main business. If your company image is high-tech and cutting-edge, then adding a service that doesn't complement these virtues could be detrimental. It may be helpful to bounce ideas off your customers before committing to them.

Adding services should never compromise your company. If your bread and butter can be impacted negatively, you must let it go. If your financial investment is too great and puts your company at risk, you must not proceed.

The type of specialty work you choose must play into your background and experience. It needs to be something that you not only have the ability to perform but the passion to learn and excel at. Adding a specialty service to your company should be enjoyable, not stressful and uncertain. If it elevates your level of anxiety, you might want to reconsider.

Sometimes it is the talent and experience of an employee that dictates the new direction. This can work out favorably and add a level of expertise that wouldn't otherwise be there. However, you must make sure of the employee's long-term commitment before putting the risk completely on their shoulders.

RELATIONSHIPS

Relationships are the key to expanding business. The friendships you develop with our customers can open up a realm of possibilities. Through

these interactions, you'll receive valuable insights into their needs, shortcomings and desires. Casual conversation can reveal areas of need that you can fill.

These relationships can also uncover information your competitors don't have. Customers are often candid with people they trust and may divulge inside information dealing with budgets, timetables and concerns. This information can be very valuable and help define the direction you take. It can also be helpful in identifying the size of the investment required.

One of the most valuable rewards for having solid customer relationships is the opportunity for sole sourcing. Because of the trust that has been established, the customer may have mechanisms in place to ensure a project is awarded to you without having to go through the normal bidding channels. Having these assurances can help you provide fair numbers that guarantee a healthy profit margin.

A known customer will also be willing to give you the first shot at your new specialty work. Because of the quality of work that you have performed for them in the past, they will already have an insight into your competence and integrity and will be more apt to trust you. They will be supportive of your new venture and will be more understanding of the learning curve required.

Finding surplus work for your crews and equipment by looking at specialty jobs is a great way to increase your workload and profit margins. Carefully selecting the type of services you offer can open up a whole new world and help grow your company in a positive direction.

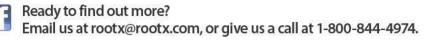
By tapping into vertical markets within your industry, you can balance the workload within your company. When business is slow in one area, you can shift your resources into another, ensuring that your crews stay busy and that you have a steady stream of income.

ABOUT THE AUTHOR Jim Aanderud is owner of Innerline Engineering, a video pipeline inspection company based in Corona, Calif.



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A GOOD REPUTATION AND KEEN SENSE FOR DEVELOPING NEW BUSINESS KEEPS PEERLESS PLUMBING MOVING FORWARD BY BRIANA JONES

Raul Lopez of Peerless Plumbing runs cable through a sewer line. The cable will be used for pulling a CIP liner back through. (Photography by Mark Skalny) Innovations and changes come with the territory in this industry, especially when you've been in business as long as Peerless Plumbing. After 28 years, owner Randy Rushing credits his success to hard work and an awareness of market fluctuations.

"We switched over to specialty contracting when the market collapsed," says Rushing. "It turned out to be a boom for us."

Peerless serves all 13 cities that encompass Phoenix, and they've done lining jobs as far as 150 miles north in Flagstaff and 120 miles south in Tucson.

TRADEMARK SERVICES

Peerless started out as a copper repiping and plumbing company, but now offers drain cleaning and inspection, hydrojetting, leak detection and pipe restoration.

While repiping is still the company's main moneymaker, Rushing attributes his decades of success to the Peerless trademark one-stop services offering. They do drywall repair and patching so there are no holes in walls or floors when they're done with a job. That is one of the many reasons they're able to generate business through repeat customers and word-of-mouth advertising.

"We don't sub anything out other than lunch," says Rushing. "If we take care of everything then we assume total responsibility. I don't have to depend on somebody else."

BEST TOOL FOR THE JOB

For hydrojetting and cleaning sanitary sewer lines, the company uses an 83 hp turbo diesel Spartan Tool SideWinder. Jetting and cleaning jobs are primarily commercial, and include prisons, nursing homes and hospitals. Rushing says adding Nu Flow Technologies and ePipe/ACE DuraFlo lining equipment has cre-

profile

PEERLESS PLUMBING, PHOENIX, ARIZ.

OWNERS:	Randy and Jade Rushing
ESTABLISHED:	1984
SERVICES:	Copper repiping, plumbing, drain cleaning and Inspections, hydrojetting, leak detection, pipe restoration, pipe lining
CUSTOMER BASE:	Residential, commercial, municipal
EMPLOYEES:	9
WEBSITE:	www.peerlessplumbingrepipes.com



ated more commercial jobs. A range of snakes and rooter machines from Spartan and General Pipe Cleaners fill the need for cleaning small-, medium- and largediameter drains.

The company inspects residential, commercial and municipal lines, and they do an inspection on every job. Rushing says many homeowners have the mindset that if there's a problem, a company is going to come in and dig up the

"We don't sub anything out other than lunch. If we take care of everything then we assume total responsibility. I don't have to depend on somebody else." Randy Rushing

entire yard and cause a lot of destruction. "We do a lot of our video inspections for free because we can show them what's right and what's wrong," he says. "Everything is not always a disaster, and by giving free camera inspections, homeowners can see we won't cause so much damage.

"The cameras are our best tool because we don't have to do sleight-of-hand sales pitches; once the owner sees it, we assure him we can fix it."

Each of the nine employees carries a camera inspection unit from Spartan, Pearpoint or RIDGID in their vehicle. They like the variety of cameras because each offers different functions. Rushing says crew members like the keyboard and recording options on the RIDGID cameras, and they use the heavy-duty Pearpoint units for long, 300- to 400-foot lines. Technicians use the Spartan cameras in the sunlight because they offer daylight-readable screens.

Rushing keeps a Spartan PROVision 2.0 as a backup in the warehouse. "I want everyone to have the best tools in their hands," he says. "It's safer that way than using crummy equipment."

For sanitary sewer line inspections, Peerless follows a detailed procedure each time. "We pre-video all sanitary sewer lining jobs," says Rushing. "We view that with the owner so he sees the exact condition on a high-definition color camera. We record everything on a memory stick or, if the customer is present,



ABOVE: Raul Lopez, left, and Ramon Martinez use a roller to fully impregnate the liner with epoxy prior to installation in the 4-inch pipe. RIGHT: Lopez keeps a firm grasp on the liner while Martinez pours in the epoxy.

he watches on the screen. Then we clean the lines to about 95 to 100 percent of the inside diameter, which reveals all the problems. Then we line the system and do post-video. We give the pre- and the post-video to the owner for his records."

DIVISION DECISION

Branching into other sectors was not an easy decision for the Peerless team. "When the market was starting to go down, I was searching for alternate revenue sources," Rushing says. An opportunity presented itself in the form of pipe lining and rehabilitation with products from Nu Flow.

DOCUMENTATION GUARANTEES QUALITY SERVICE

As owner of Peerless Plumbing, Randy Rushing ensures customers receive the highest quality service, so he takes any guesswork out of the equation for technicians.

"I carry two cameras with me all the time," he says. "When I go into a customer's home for the first time, I use photos to document the floors and walls." Rushing keeps the images on file and provides copies to the technician assigned to the job.

"If there's a particular detail, like a Roman tub made out of Italian tile that the homeowner doesn't want broken, I take photos, make notes and attach them to the job report," says Rushing. This allows him to share the concerns of the homeowner with the technician, so he doesn't have to be on site when the technician arrives, sometimes at six in the morning.

Rushing uses the second camera to photograph the front of the house or building. He also attaches those to the work order so the technician can easily find the location in the morning when it's dark.

Each service vehicle includes a digital camera so technicians can make quick documentation while they're out on a job. Most of the crew members also have smartphones now. "If something is not right when a guy gets to a job site, he'll photograph it and shoot it to me," Rushing says. "Then I can come over right away."



Peerless is the only certified Nu Flow provider in the Phoenix area, and the Nu Flow professionals trained each of the field technicians. "I sent several employees to the Nu Flow training center," says Rushing. "Then I had Nu Flow technicians come out to monitor and show employees tricks of the trade." Peerless is also the only certified ACE DuraFlo/ePipe installer in Arizona.

With two options for lining solutions in his back pocket, Rushing is careful not to pit the two against each other. "I have two sets of literature and two sets of business cards," he says. Peerless uses Nu Flow epoxy-impregnated felt liners for sanitary sewer lines. The company uses the ACE DuraFlo/ePipe potable water system for pipe restoration of hot and cold potable water pipes, also known as chiller lines.

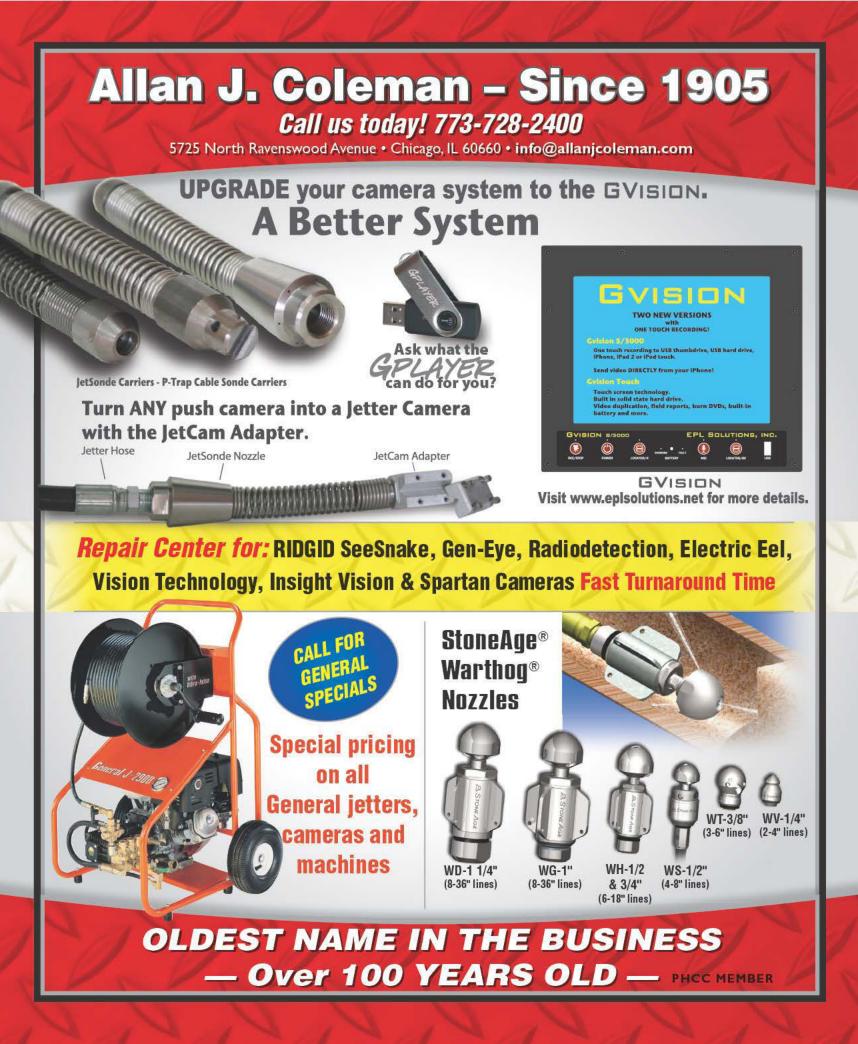
"The cameras are our best tools because we don't have to do sleight-of-hand sales pitches." Randy Rushing

"A lot of hospitals and nursing homes don't have an air conditioning unit in every room," explains Rushing. "They have a main chiller facility that blows cold water in the summer through fans into the rooms, which creates chilled air." In the winter, the central plant produces hot water to heat the rooms. The 2-, 4- and 6-inch-diameter chiller lines run throughout a building so the entire complex must be shut down to work on them.

Rushing likes the ePipe system because it is all automated. "My plumbers are not bartenders," he says. "With ePipe you determine the length and the diameter, and then set it." He says having both lining options allows Peerless to offer the best services for customers. "The new systems give us versatility to get in and get the job done quick without destruction to the building."

COMMERCIAL SHIFT

With a current division of 60 percent residential and 40 percent commercial work, Rushing says pipe lining is quickly increasing the commercial side of his business. "I used to work for homeowners or building managers, now most (continued)





Peerless Plumbing team members (from left) Christian, Jade and Randy Rushing with Raul Lopez and Ramon Martinez.

of my business is for other plumbers," he says. "They haven't invested in the new technology and don't want to, so we're doing pipe restoration and lining for them."

Lining jobs for nursing facilities, government buildings and large plumbing corporations are becoming the norm. Most of those jobs are blown-in epoxy using ePipe with 1/2- to 2-inch-diameter pipes, says Rushing. "If the lines are bigger, I call in ACE DuraFlo corporate and we work together," he says.

"I want everyone to have the best tools in their hands. It's safer that way than using crummy equipment." Randy Rushing

Rushing says one of the challenges with commercial jobs is the time it takes to get paid, which is partly because residential jobs usually have such a quick turnaround in comparison. "When we're doing residential I get paid every day or the next day," he says. "In commercial, I fall right in line with normal payments, which is 30 to 45 days."

Specialty lining jobs provide relatively speedy payment times. "We get paid within days to two weeks because the problems are so severe that we can just about dictate the payment terms, which is very unusual in contracting," he explains.

Peerless recently did lining work at three prisons in Florence, Ariz., which involved some special challenges. "Prisons are a challenge because it takes about two hours to have all your tools and equipment inventoried and inspected on the trucks, and sometimes photographed," says Rushing. "You're working in confined areas so you can't move around."

Rushing attributes the shift in commercial work to the specialty trades. Industry professionals have to make a bigger investment in training over the years than in the original license and equipment, he says. And that's something not all plumbing and drain cleaning companies want or can afford to do.

"Most plumbers don't talk to other plumbers unless they work for the same company," says Rushing. "Around here, I'm starting to become the ambassador among medium to larger plumbers because they don't want to get involved in that business."

That has also helped attract new clients for sanitary sewer lining jobs. "In the commercial business, it's other plumbers who bring me in," Rushing says. "We're getting recommended by plumbers all over town — some of them we don't even know."

Rushing says local plumbers know Peerless is in the epoxy and lining business because they search online for Nu Flow or ePipe in the Arizona area.

MAKING AN IMPRESSION

As a one-stop shop for consumers, Peerless has been able to maintain a steady business and also grow through the economy. "We've been going along, not making waves," Rushing says. "We're lucky to keep the same people."

Relationships developed across generations have been the reason for much of the company's growth. "I did the grandparents' home, I did the son's home, and now I'm working on the grandchildren's home," Rushing says. "Our 9,000 repiping jobs have carried us through bad times."

Word-of-mouth promotion and a website for each division of the business also draw customers. Rushing says they have just about given up on Yellow Pages advertising. "We've survived and kept on growing with our resume of jobs and websites," he says.



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Christian Rushing checks the hose reel on his Spartan Sidewinder trailer jetter.

MOVING ON UP

Peerless has always leased a warehouse and office with locations in three regions surrounding Phoenix, but with the additional services offered, the company is combining the sites into one location and recently broke ground on a new 2,700-square-foot warehouse and office. The main Phoenix location now includes Rushing's home and business.

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www.spirstar.com Toll Free: 800.890.7827 • Fax: 888.893.1255 ISO 9001:2008 Certified "Looking at the economy, we didn't know what was going to happen, so we purchased a 2-acre lot with a nice home on it," says Rushing. "It had a big basketball court at the back, which is being constructed into the warehouse and office. The savings from moving from a bigger house to a medium house just about paid for the property."

Building the large warehouse will help protect vehicles and equipment from the harsh southwestern climate, which is key to Peerless continuing to serve its large region. It can be damaging for the seven Ford, Chevy and Toyota service vehicles to park outside in the dust, heat and constant sun. "We want to keep our equipment looking good," Rushing says.

FRIENDLY INVESTMENT

Building the business does not stop with equipment investments or generating new customers. Rushing stresses the importance of building relationships with others in the industry.

"If I see a plumbing truck or somebody at a gas station, I usually stop and say 'hi.' I introduce myself and hand out a business card," he says, adding that he might end up spending a dollar on a coffee during the visit, but it's all worth it.

He likes the old-fashioned way of making friends, some of which turn into business connections and result in jobs. "Seventy-nine cents to make a friend is the cheapest investment you'll ever make," he says.

A connection at a local trade show paid off when Rushing struck up a conversation with Keith Turley. Turley owns Frontline Mechanical, Inc., a heating, air conditioning and plumbing company in Glendale, Ariz. "The next thing we knew, we'd become friends," says Rushing. "We've gotten along so well over the years that we worked together on several jobs and we've got a couple milliondollar jobs in the evaluation stage right now.

"His crews come to work for me on my crews doing pipe lining and cleaning. We've cross-trained his crews. That way if I need six extra people, I can just call him up. We share the profits, and we both enjoy it."

GROOMING THE NEXT GENERATION

Friendliness and family ties run deep at Peerless. Jade, Randy's wife, works

from the home office and handles all the paperwork and bills, allowing Rushing to focus on sales and quality control. "She's a peach," Rushing says.

General Manager Christian Rushing has worked for his dad since he was 12 years old. At age 30, he is being groomed to take his dad's place within the next five years when Randy retires.

Randy has instilled one vital piece of advice onto Christian and all the technicians before sending them out into the field: "Make sure customers think they're getting more than they're paying for."

As most companies learn sooner rather than later, happy customers are repeat customers. "I want them to know what's available on the market," says Rushing. "If somebody else or another product would be better suited, I'd rather walk away from the job. I want happy people — especially me." c

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Keeping Stock

SMART INVENTORY CONTROL WILL HELP YOU SAVE MONEY - AND BOOST PROFIT

BY ERIK GUNN

f you think of your business as providing a service more than selling products to customers, you might not think about inventory very much. After all, that's really an issue for retail stores — isn't it?

Think again. Whatever service you provide — inspecting sewers, cleaning out clogged drains, pumping out septic tanks — you still have inventory to consider. A lot of your business will involve repairs of some kind, which means you have to stock spare parts. And then there are the tools of your trade — another sort of inventory you need to manage properly.

And you must manage it. If you store too much, that means you've spent money you didn't have to in order to buy the stuff in the first place. Even the storage space is costing you something. And while some of your stock might keep on the shelves forever, there are other products — you know which ones, depending on the business you're in — that will go "bad" over time.

(I once made the mistake of buying up a lot of ink cartridges for my computer printer because of a discount – only to learn the hard way that it can get "old" in the package. I had to throw out some unused cartridges, and now I only buy ink as I really need it.)

Too little inventory can hurt you, too. Suppose you're unclogging a drain and discover a previously undetected leak demanding a new replacement drainpipe. Do you really want your customer to

replacement drainpipe. Do you really want your customer to have to wait an extra day until you get the pipe? Not if you want to get called the next time.

Staying on top of inventory is critical to keeping your business healthy and your profits up. And it's the same kind of problem Goldilocks had when she visited the empty home of those three bears. You want to avoid the extremes — not too much, not too little — and figure out what is just right.

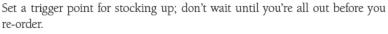
THE BASICS

For some suggestions, I called up Ted Angelo, executive vice president at Grunau Co., a large mechanical contractor based in the Milwaukee suburb of Oak Creek, that does business across the country.

"We're unconventional when it comes to inventory," Angelo says. Indeed, that's true, and I'll explain why, and what you can learn from that, in a moment. But first, a word or two about the basics.

Remember the 80-20 rule. That old formula fits your inventory supply just as it does so many other aspects of your business: Roughly 80 percent of what you do probably entails a pretty small selection of components. Angelo calls those the "bread-and-butter items" for the business, and Grunau maintains a master list of those. They are about 80 percent of what the company keeps in stock.

Keep a 30-day supply. For those bread-and-butter components, count how much you've used in the last year, then keep enough to last you 30 days.



But also, be sure that whoever is responsible for maintaining your supply isn't replenishing it two or three times a month, which means wasted time.

And if your employees have specialized tasks, you may find that those regular items for one are quite different from what a co-worker may need to stock. Make sure you take those kinds of differences into account.

Don't use it all up at once. When a big job comes along that will demand all, or even a significant portion, of your 30-day inventory of a particular part, don't take it out of the regular inventory. "On that particular occasion, we'll get a whole box to use on that job," Angelo says. "We don't want to use up our inventory on one job." That way workers don't run short on one of those highdemand items when they respond to routine customer needs.

THE LEAN DIFFERENCE

Those are some pretty straightforward principles for managing inventory, however large or small your business. But what about the products you only use 20 percent of the time?

"I stress to our people over and over again, if the technician or his helper can't go into his van and find something in 30 seconds, he hasn't labeled it properly."

Ted Angelo

That can be where the biggest problem arises. Do you keep all of those products around, taking up space in a warehouse when you might hardly ever need any of them?

Grunau doesn't do that anymore, says Angelo. And that's where the company's unconventional approach comes in.

The company has been pioneering the use of "lean" techniques in construction for several years. Lean is all about getting waste and inefficiency out of the system. It's been the byword for manufacturing for more than a decade now, but it's still a new concept in industries like construction. I got to know Ted a couple of years ago when I helped edit his book on the subject.

And part of thinking lean is *rethinking* inventory.

How do you do that? Here are some of the ideas that Grunau has put in place.

No warehouse. The bread-and-butter components are stocked right on the company's service trucks, Angelo says. Those other products used only 20 percent of the time *aren't* stocked. For the most part, they remain with



non-profits, and individuals. Readers may direct inquiries to him by contacting this publication at 800/257-7222 or emailing editor@cleaner.com.

Racine, Wis., where he operates Great Lakes Editorial Services, consulting for businesses, Grunau's suppliers. Instead of wasting space storing them, cash buying them in advance, and gas hauling them around, the company waits until it needs those components to buy them.

To make that work, suppliers must be able to meet your needs at a moment's notice. Grunau has made sure every supplier can fulfill that expectation, and has lined up a diverse pool of suppliers to minimize the risk of lost time and wasted traveling when a component is needed.

Another important factor is to make sure that the stock on the truck is easy to find. "I stress to our people over and over again, if the technician or his helper can't go into his van and find something in 30 seconds, he hasn't labeled it properly," Angelo says. Regular audits check to make sure the techs keep that standard.

No annual count. Grunau decided that taking days and days to count up every screwdriver, every piece of pipe, and every nut and bolt was a waste of time and money. Along with that, the company instituted another practice:

Push responsibility down. Every service technician is assigned a truck and is responsible for keeping it adequately supplied with those bread-and-butter items. At the beginning of the year, drivers stock up, and as needed, they restock when supplies are low, going directly to the supplier — remember, there's no inventory in the shop. That way, there's no time, energy or manpower spent double handling materials, Angelo says.

Sure, that means trusting the employees. It means being flexible — allowing the employee to exercise some freedom in exactly how much of an item will be kept on hand. But along with trusting, the company also verifies, conducting periodic audits to make sure technicians are using up stock at an appropriate rate.

BE BRAVE

You can learn more about Grunau's lean strategies — which, although focused on construction, can be applied in a variety of similar contracting businesses — by visiting the company's website devoted to the topic: www.grunau.com/lean-construction.php.

Some of these ideas may scare you. You should know that the company didn't get to where it is today overnight; instead it took things step by step, with a lot of trial and error.

But if inventory problems are costing you money — or costing you customers — it is almost certainly time to do something about it.

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Bursting with Flavor

PIPE BURSTING HELPS A CALIFORNIA CONTRACTOR REPLACE INDUSTRIAL WASTEWATER PIPES WITHOUT INTERRUPTING PRODUCTION

BY SCOTTIE DAYTON

ome industrial wastewater lines at a food processing plant in San Jose, Calif., were too small to handle the volume and others were deteriorating with age. Pipe bursting was the only way to rehabilitate them without disrupting the plant's nonstop operation. The facility's local mechanical contractor, Therma Corp., subcontracted TRIC Tools of Alameda to do the work.

The first pull would pass under a 4-foot-thick slab supporting multiple 50-foot-tall liquid storage tanks. "No one knew what lay outside that pipe," says John Rafferty, TRIC's director of marketing and technical support. "If we hit obstructions, damaged utilities, or the cable or bursting head broke while under the slab, it would be a miner's nightmare to tunnel to it." Excavating inside the plant would be equally disastrous and expensive.

Tight safety and cleanliness controls inside and outside the building quadrupled the work.

"Dealing with all the time-consuming extra requirements became the toughest part of the job," says Rafferty. "Any infractions could result in eviction." Careful planning and coordination kept the plant operating at full capacity throughout the demanding project.

tough job

PROJECT:	Rehabilitate industrial wastewater pipes without stopping production lines
CUSTOMER:	Food processing plant, San Jose, Calif.
CONTRACTORS:	Therma Corp., San Jose; TRIC Tools, Alameda, Callf. 888/883-8742 www.trictools.com
EQUIPMENT:	M50 and X30 pipe bursting systems, TRIC Tools
RESULTS:	Pipes replaced without disrupting the food production

WINDOWS OF OPPORTUNITY

Therma site supervisor Dave McCall and his team did everything except fuse and pull the HDPE pipe. They also advised TRIC workers on protocol. Each procedure had to be logged and documented by someone on the plant *(continued)*

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29830 Beck Road, Wixom, MI 48393 • www.nlbcorp.com MI: (248) 624-5555, IN: (219) 662-6800, NJ: (856) 423-2211, LA: (225) 622-1666, TX: (281) 471-7761, CA: (562) 490-3277 e-mail: nlbmktg@nlbusa.com The manhole's cylindrical wall created a void to the left of the M50 ram that was filled with 6-inch timbers and two sandbags to make the resistance wall perpendicular to the pull force.

safety team. Any equipment carried into the building had to be disinfected and wrapped in plastic. Workers had to wear hairnets and beardnets even outdoors, and disposable coveralls and boots when entering the plant. "We had to discard them every time we went outside, and we were going back and forth constantly for the second pull," says Rafferty.

The challenge of the first pull was stabilizing the cribbing against the external wall of a 48-inch concrete manhole. A 100-foot length of 6-inch PVC line ran from a clean-out in the driveway outside the plant to the manhole, passing under the concrete slab on its way. McCall's crew excavated and shored the launch pit at the clean-out and a 4- by 2- by 8-footdeep pulling pit behind the manhole.



Semi-tractor trailers use the driveway to deliver ingredients, and they needed an unobstructed approach to the offload site. A truck arrived every four hours and took at least 90 minutes to unload. "Everyone timed their work around the delivery schedule," says McCall. "That meant moving equipment out of the way and laying plating over the excavations while the vehicles were here."

Rafferty's team fused six 20-foot sticks of 8-inch HDPE pipe and the polyethylene end cap the day before the pull, then laid it alongside the perimeter access drive. "The client required a fire extinguisher by the fusing machine," says Rafferty. "We had to record when we began heating the iron, when we unplugged it, and the 45-minute cool-down before storing it on the premises."

TRICKY TIMBERS

The manhole's inlet and outlet didn't align, so the Therma team excavated behind the structure, restricting the pit's width to 2 feet to avoid encountering



A Therma worker in the shoring box removes a section of 6-inch PVC pipe where it connects to the 4-inch cast iron pipe running 185 feet into the plant. They have already cut the 2-foot-wide slot in the concrete in preparation for the first pull. adjacent underground supply lines. They cut a hole in the manhole wall opposite the inlet pipe, enabling the cable to pass through the pulling pit, and enlarged the inlet more than 12 inches to enable the bursting head to enter.

"That gave us ample support for the cribbing on the right-hand side of the manhole, and no support on the left-hand side since our inlet path was at an odd angle," says Rafferty. "The tricky part was making the resistance wall perfectly perpendicular to the pulling force."

"We had 18 inches of wall missing. If we were to complete the pull, we needed cribbing to stabilize the plate." John Rafferty

Rafferty used a Sharp Shooter drain spade to cut a crisp 90-degree corner and straight walls in which to situate 6-inch timbers and sand bags to fill the void behind the cribbing and 24-inch resistance plate. "The goal is to set up once, then just push buttons," he says. The M50 ram, with 48 tons of pulling force, was set vertically in the pit. A trailer-mounted 14 hp/7 gpm/5,000 psi TRIC hydraulic pump powered the ram.

To accommodate the delivery trucks, McCall's team waited until the last minute to cut a 2-foot-wide slot in the concrete at the entry pit, then sloped the soil toward it. That left the top half of the shoring wall in the way.

"Removing the 10-foot-long segment was an issue because of OSHA standards, but it had to go," says Rafferty. "Even then, we had to push down on the pipe with the backhoe bucket to assist the angle of entry." There were no surprises waiting under the slab and the pull was finished in time for the next delivery truck.

PART TWO

The second pull from the driveway clean-out pit to inside the plant replaced 185 feet of 4-inch cast iron pipe with 6-inch HDPE that tied into the new 8-inch pipe. No gasoline-powered equipment was allowed inside the building.

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McCall's crew drilled and anchored steel poles to the facility's 6-inch reinforced concrete floor, then pitched Visqueen-walled 20-foot-square by 8-foot-tall tents over all excavations. The tents had 12-inch vacuum fans exhausting into 20-foot-long flex conduit venting through the plant's ceiling to remove dust.

After workers cut through the floor, they excavated a 14- by 10- by 4-foot

John Rafferty, TRIC director of marketing and technical support, attaches the pipe and head driver to the threaded cable end.

deep pulling pit, then dug a reservoir at the head to collect the upstream drainage. They put a sump pump in a 30-gallon plastic tub, running the intake hose to the reservoir and the outlet hose to a bypass drain. Someone always monitored the tub during high-flow periods and occasionally moved the bypass hose to a larger drain to prevent spills.

McCall scheduled an electrician to direct-wire TRIC's 10 hp, three-phase, 480-volt, 2 gpm/10,000 psi PowerTeam hydraulic pump. "The unit had four thick contact wires and was the size of a washing machine," says Rafferty. It powered an X30 ram with 29.5 tons of force.

The pulling pit wasn't cribbed because wood was not allowed in the plant. "Fortunately, the dirt wall was firm enough to hold the resistance plate, yet not too compacted to allow for expansion of the pipe fragments," says Rafferty. To prepare for the pull, he slid a pre-burster up the 3/4-inch swaged cable and over the shackle (connects the bursting head and

cable) to prevent it from doing the bursting work as it entered the small pipe.

As the greasy, dirty cable came out of the pulley during the burst, McCall's crew wrapped it in white plastic, taped it, and ran it outside along the bursting path to the entry pit. "We were advancing 3 to 4 feet per minute using an average 15 to 20 tons at 3,000 to 4,000 psi," says Rafferty. "Because of Therma's



efficiency and preparedness, everything went according to schedule and we were done in 25 minutes."

TRIPLE PLAY

The third pull replaced 200 feet of 6-inch cast iron pipe with 6-inch HDPE. The line had multiple tie-ins of 2- to 3-inch cast iron pipe, requiring three excavations between the entry and pulling pits. "The challenge here was fusing pipe inside a small corner of the warehouse," says Rafferty. "We couldn't cross the loading threshold 90 feet away or we'd interfere with the nonstop forklift traffic. The pulling pit for the fourth pull was adjacent to the wall at the other end. Add the fusion machine and we were left with a 40-foot circle for the pipe."

To direct the pipe into the mechanical fusing jig and align the ends, McCall's crew drilled and screwed footings in the floor for temporary guideposts. Rafferty followed the same procedures indoors for fusing pipe as he did outdoors.

The host pipe lay in a trench backfilled with gravel. Although the 6-footdeep pulling pit was shored, the ground behind the 24-inch resistance plate kept caving in. "We had 18 inches of wall missing," says Rafferty. "If we were to complete the pull, we needed cribbing to stabilize the plate."

Therma workers dashed across the freeway to their shop and returned with 3-foot timbers wrapped in plastic. However, they weren't long enough to disperse the pulling force and the wall began compressing again, shifting the ram sideways. Technician Salvador Sainz and municipal sales director Bob Grenier stopped the pull and adjusted the timbers so one edge caught the foot of a shoring strut to extend the area of resistance.

With the cribbing stabilized, the pipe moved at 3 to 4 feet per minute. McCall's crew had disconnected the tie-in pipes so the bursting head wouldn't catch and drag them along. Rafferty monitored the intermediate pits, checking on the stretch of the pipe and stopping the pull twice to clear debris collecting in front of the head.



The backhoe bucket pushes down on the 8-inch HDPE pipe to assist the angle of entry. The 8-inch bursting head is designed to slide forward. Once the pull began, the polyethylene cap and pipe caught up with it.

"If 200 feet of pipe stretches even half a percent, that's a foot," says Rafferty. "According to the manufacturer, the pipe needs 8 to 12 hours to retract after stretching, but we didn't have that much time." To compensate, McCall's crew began connecting tie-ins at the entry pit, since stretch is minimal to none at the tail end. As soon as they cut the HDPE pipe to make connections in the intermediate pits, they relieved the tension and the pipe popped back.

The final pull, replacing 80 feet of 4-inch cast iron with 4-inch HDPE, ran perpendicular to the 6-inch pipe and tied into the entry pit of the previous job. It was uneventful. "Therma is probably the best primary contractor with whom we work," says Rafferty. "They made it possible for us to perform our job without a hitch." c



Brand Recognition

CLASSY-LOOKING VAN MAKES A GREAT IMPRESSION WHILE REDUCING OPERATING EXPENSES AND BOOSTING PROFITABILITY

BY KEN WYSOCKY

o save money, Dickenschrauf Plumbing Solutions bought a 2012 Mercedes-Benz Sprinter service van. That may sound as an unlikely as a clog-proof drainline, but it's worked out just as expected for the Milwaukee-based plumbing and drain cleaning business.

Not only has the Sprinter reduced the company's operating costs through better gas mileage and reduced repairs and downtime, the van's sleek, eyecatching design presents a professional image that gives the company's branding/marketing efforts a shot in the arm, says co-owner Ryan Schraufnagel.

"It's nice to pull up to someone's house and in a really nice vehicle," Schraufnagel says of the company's Sprinter, which replaced an older 1-ton cargo van with 120,000 miles on it. "Nowadays, it's all about how you present yourself.

"At first, we were concerned that people would think we charge too much because we drive a Mercedes-Benz," he says. "But the opposite happened — it just represents us a lot better and more sense. The used cargo van they also were thinking about buying got nine miles per gallon, compared to 20 mpg for the Sprinter, thanks to its six-cylinder, 185 hp diesel engine. And it required oil changes every 3,000 miles, compared to every 10,000 miles for the Sprinter.

Moreover, the cargo vans the company had been buying usually needed expensive repairs after they hit 100,000 miles. "But with the Sprinter, we could get 500,000 miles out of it if we take care of it," he notes. "You can own

money machines

VEHICLE:	Mercedes-Benz Sprinter service van
FUNCTION:	Carrying tools, parts/fittings and other supplies for commercial and residential plumbing repairs and drain cleaning
FEATURES:	Six-cylinder, 185 hp diesel engine
COST:	About \$43,000

"You can own it for 10 to 15 years and it won't nickel-and-dime you to death. By the time we worked out the numbers, it really doesn't cost as much to own this (the Sprinter) as it does to own a used cargo van." Ryan Schraufnagel

than our older cargo vans. There's nothing wrong with them, but it's different when you pull up with a 10- or 15-year-old rusted van with dings and dents."

Initially, Schraufnagel and his partner, Rich Woyak, looked at the Sprinter more out of curiosity than anything else. But when they did the math in terms of long-term expenses, the Sprinter made more





it for 10 to 15 years and it won't nickel-and-dime you to death. By the time we worked out the numbers, it really doesn't cost as much to own this (the Sprinter) as it does to own a used cargo van."

Schraufnagel also lauds the Sprinter's more expansive interior headroom — 6 feet, 6 inches, compared to 4 feet, 6 inches for the company's old cargo van. That extra space improves productivity because he doesn't have to crawl through the van trying to find tools or repair parts. That might sound like

Ryan Schraufnagel outfitted the Mercedes-Benz Sprinter van with a plywood platform that allows for convenient pipe storage underneath as well as metal shelving and plastic bins to keep parts organized.

a minor advantage until he explains that it's not unusual to make 10 to 20 stops a day.

In addition, the Sprinter is big enough to carry all the tools and parts Schraufnagel needs to make most common repairs. He outfitted the van with a plywood platform that allows for convenient pipe storage underneath, as well as metal shelving and plastic bins to keep fittings and parts organized. Even with all that, the van still has enough space to accommodate as much as three toilets, a water heater, a RIDGID K-7500 drum cable drain cleaning machine and a RIDGID K-40 sink drain cleaning machine.

"I rarely have to tell a customer that I'll be back in 45 minutes because I have to go and get parts before I can make a repair," he notes. "That's huge, because the customer pays for that time. Instead, I'm able to get in and out in an hour instead of, say, two hours, because I have all the parts I need in the truck. The customer doesn't have to pay as much and we can get to more jobs per week."

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See ads pages 33,43	Allan J. Coleman Co. 5725 N Ravenswood Ave., Chicago, IL 60660 773-728-2400 • (f) 773-728-2499 www.allanjcoleman.com info@allanjcoleman.com	V.	v	25' to 200'	1-1/4" to 10" 3/4" to 12"	1350 to 4000 PSI	1.3 to 65 GPM
See ad page 17	Amazing Machinery, Inc. 2160 S Lee Hwy, Cleveland, TN 37311 800-504-7435 • 423-472-2527 • (f) 423-472-2531 www.amazingmachinery.com sales@amazingmachinery.com	~	v	35' to 400' 25' to 100'	I-1/2" to 16" I-1/2" to 8"	1200 to 4000 PSI	2 to 14 GPM
See ad page 93	American Jetter 6908 Pine Grove Rd, Knoxville, TN 37914 866-944-3569 • 865-524-4647 • (f) 865-247-5105 www.americanjetter.com andy@americanjetter.com	~		50' to 500'	1-1/2" to 8"	2000 to 5000 PSI	4 to 10 GPM
See ad page 10	BuilFrog Industries 13918 E Mississippi Ave., Ste. 303, Aurora, CO 80012 303-338-0805 www.builfrogind.com builfrogind@gmail.com	~		50' to 150'	1/2" to 4"	1500 PSI	1.65 GPM
See ad page 77	Cam Spray 520 Brooks Rd, Iowa Falls, IA 50126 800-648-5011 • 641-648-5011 • (f) 641-648-5013 www.camspray.com sales@camspray.com	~				1000 to 7000 PSI	2 to 12 GPM
See ad page 83	Central Oklahoma Winnelson 5037 NW 10th St, Oklahoma City, OK 73127 888-947-8761 • 405-947-8761 • (f) 405-947-1934 www.centralvinnelson.com knjones@winnelson.com	~	~	25' to 350'			
See ad page 86	Chempure Products Corp. PO Box 740, Bolivar, OH 44612 800-288-7823 • 330-874-4300 • (f) 330-874-4448 www.chempure.com chempure@gmail.com	V		100' to 400'	2" to 12"		
See ad page 83	Coast Manufacturing 3985 W 12th Ave., Eugene, OR 97402. 800-541-7015 • 541-684-0743 • (f) 541-485-3617 www.coastmanufacturing.com sales@coastmanufacturing.com		~	35' to 150'	1″ to 10°		
See ad page 12	Draincables Direct 6615 Maumee Western Rd., Maumee, OH 43537 800-421-4580 • 419-838-6090 • (f) 800-752-8254 www.draincables.com sales@draincables.com	<i>v</i>		25' to 50'	1" to 12"	1500 to 4000 PSI	2 to 11.5 GPM
See ad page 28	Duracable Manufacturing 300 Ashworth Rd, West Des Moines, IA 50265 800-247-0556 • 515-223-1344 • (f) 515-223-6109 www.duracable.com sales@duracable.com	~	~	Up to 150'	Up to 10"	3000 PSI	8 GPM
See ad page 49	Electric Eel Mfg. 501 W Leffel Ln. Springfield, OH 45501 800-833-1212 • 937-323-4644 • (f) 937-323-3767 www.electriceel.com info@electriceel.com	V.		100' to 300'	l''to 8''	1500 to 3000 PSI	1.7 to 4.7 GPM
General PIPE GLEANERS See ad page 2	General Pipe Cleaners 1101 Thompson Ave., McKees Rocks, PA 15136 800-245-6200 • 412-771-6300 www.drainbrain.com info@drainbrain.com	~	~	150' to 400' 35' to 100/200'	I-1/2" to 10" I-1/4" to 10"	1500 to 3000 PSI	1.7 to 12 GPM

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		MAIN / DIST. OF PORTABLE JETTERS	MANJUDIST OF CABLE MACHINES	DRUM/REEL CAPACITY RANGE	PIPE DIAMETER RANGE	PRESSURE	VOLUME
See ad page 61	Gorlitz Sewer & Drain, Inc. 10132 Norwalk Blvd, Santa Fe Springs, CA 90670 562-944-3060 • (f) 562-944-7630 www.gorlitz.com sales@gorlitz.com		~	35' to 300'	1-1/4" to 8"	1500 to 3500 PSI	2.2 to 8 GPM
	JETTERS NORTHWEST 2222 15th Ave. W, Seattle, WA 98119 877-901-1936 • 206-283-5252 • (f) 206-284-8638 www.jettersnorthwest.com stuart@seattlepump.com	V		150' to 400'	l" to 12"	1500 to 4500 PSI	1.3 to 12 GPM
Source Performance Floriduary	John Bean Jetters PO Box 1404, LaGrange, GA 30241 800-241-2308 • 706-882-8161 • (f) 706-884-3268 www.durand-wayland.co sales@durand-wayland.com	~				2000 to 4000 PSI	18 to 65 GPM
See ad page 86	Ken-Way Corporation 930 Roberts Rd, Sparta, VVI 54656 800-533-0551 • 608-269-3752 • (f) 608-269-8129 www.ken-way.com info@ken-way.com	V	V	25' to 150'	I-I/4" to 8"	1500 to 3000 PSI	1.5 to 4 GPM
See ad page 92	Mtech 7401 First Place, Cleveland, OH 44146 800-362-0240 • 440-646-0996 • (f) 440-646-9953 www.mtechcompany.com sales@mtechcompany.com	V		300' to 600'	4" to 60"	2000 to 4000 PSI	12 to 80 GPM
See ad page 39	MyTana Mfg. Co. Inc. 746 Selby Ave., St. Paul, MN 55104 800-328-8170 • 651-222-1738 • (f) 651-222-1739 www.mytana.com mytana@mytana.com	V	~	Up to 150'	I"to I2"	1200 to 3000 PSI	2.2 to 8 GPM
See ads pages 38, 45, 92	NLB Corp. 29830 Beck Rd, Wixon, MI 48393 877-NLB-7996 • 248-624-5555 • (f) 248-624-0908 www.nlbcorp.com nlbmktg@nlbusa.com		V	200' to 500'	5/8" to 1-1/8"	10000 to 20000 PSI	
See ad page 79	NozzTeg Inc. 1497 Main St, Ste. 354, Dunedin, FL 34698 866-620-5915 • 603-413-6583 • (f) 603-413-6744 www.nozzteg.com info@nozzteg.com	V		25' to 300'	1" to 8"	1000 to 4000 PSI	2 to 4 GPM
See ads pages 7, 25	RIDGID 400 Clark St, Elyna, OH 44035 800-769-7743 • 440-323-5581 • (f) 440-329-4862 www.ridgid.com ridgidinfo@emerson.com	V	~	25' to 300'	3/4" to 10"	1350 to 3000 PSI	1.4 to 4 GPM
See ad page 64	Shark Pressure Washers & Jetters 4275 NW Pacific Rim Blvd, Camas, WA 98607 800-771-1881 • (†) 877-526-3246 www.sharkpw.com sales@sharkpw.com	V		200'to 300'	l''to 8"	1500 to 3000 PSI	1.7 to 8 GPM
See ad page 100	Spartan Tool 1506 W Division St., Mendota, IL 61342 800-435-3866 • 815-539-7411 • (f) 888-876-2371 www.spartantool.com customerservice@spartantool.com	V	v	25' to 200' 15' to 112'	I-1/4" to 6" I-1/4" to 10"	1250 to 3000 PSI	2.2 to 4 GPM
See ads pages 81,86	The Cable Center 8318 Olive Blvd, St. Louis, MO 63132 800-257-7209 • 314-993-3099 • 314-432-8024 www.thecablecenterinc.com thecablecenterinc@gmail.com	~	~	25' to 150' 150' to 400'	2" to 8" 1-1/2" to 12"	1500 to 3000 PSI	1.7 to 12 GPM
	Triple R Specialty 6925 W Beaver St, Jacksonville, FL 32254 800-356-9661 • 904-786-1826 • (f) 904-786-0911 www.triplerspecialty.com sales@triplerspecialty.com	~				1500 to 3500 PSI	2.1 to 16 GPM
See ad page 11	US Jetting, LLC 850 McFarland Pkwy, Alpharetta, GA 30004 800-538-8464 • 770-740-9917 • (f) 770-740-0297 www.usjetting.com sales@usjetting.com	V		300' to 1500'	l" to 36"	2000 to 20000 PSI	10 to 100 GPM



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Not a Simple Choice

THE PROPER WORK-SPECIFIC GLOVES ARE A KEY PART OF STAYING SAFE ON THE JOB BY DOUG DAY

orking with sewage requires waterproof gloves for obvious reasons, but that may not be enough. The National Institute for Occupational Safety and Health says there are about 25 hand injuries per 10,000 workers every year. According to OSHA, 70 percent of hand injuries happen to workers who are not wearing gloves; the rest happen when the wrong gloves are used.

It is the employer's responsibility to make sure workers are using the right gloves for the right situations, along with other appropriate safety equipment. OSHA has no specific regulations pertaining to gloves, but they are required PPE: "Employers shall select and require employees to use appropriate hand protection when employees' hands are exposed to hazards such as those from skin absorption of harmful substances; severe cuts or lacerations; severe abrasions; punctures; chemical burns; thermal burns; and harmful temperature extremes." (29 CFR 1910.138)

OSHA's guidance lists several criteria to guide you, as well:

- · Type of chemicals handled
- · Nature of contact (total immersion, splash, etc.)
- Duration of contact
- · Area requiring protection (hand only, forearm, arm)
- · Grip requirements (dry, wet, oily)
- Thermal protection
- Size and comfort
- Abrasion/resistance requirements

ANSI has a voluntary standard (ANSI/ISEA 105-2000) to help measure performance of different gloves. The numerical scale measures such things as resistance to cuts, punctures, and several other criteria.

That will help, but working with wastewater poses a unique hazard, in that a cut glove can also expose a worker to any number of infectious diseases



ranging from tetanus to typhoid fever and hepatitis. Waterproof gloves may not be enough; it may be necessary to wear multiple gloves, or one with several layers, to protect against multiple hazards such as wastewater, electricity, punctures, and abrasions from equipment.

"You wouldn't dream of walking through a plant without safety glasses today. Up to now, there hasn't been a glove that could withstand a water jet injury, now there is one." Nick Woodhead

An example is the "FR Waterproof Ultimate Lined with Kevlar" glove from Youngstown Glove Company (ytgloves.com). The company claims its glove provides flame-resistant protection in cold, wet, and winter conditions. Its outer shell is 100 percent cowhide leather. Inside are a layer of Nomex insulation, a breathable membrane that is waterproof and windproof, and a layer of cut-resistant Kevlar for flame resistance and cut protection. It is just one line of gloves made with Kevlar marketed by Youngstown; many others offer Kevlar gloves as well.

US Jetting is now marketing a glove made of a relatively new material, according to President Nick Woodhead. From TST Sweden, it is designed for jetting, high-pressure painting, and working with hydraulics. "You look at some of the injuries that occur, a lot of people lose limbs," says Woodhead. "These gloves can take a direct straight jet of about 3,000 psi and a rotary jet of 7,500 psi."

Marketed under the ProOperator name, the gloves are made of an ultrahigh-molecular-weight polyethylene called Dyneema. Used in body armor, climbing equipment, parachutes, joint implants, and other areas where high strength and light weight is needed, Dyneema is said to be, weight-for-weight, up to 15 times stronger than steel and four times stronger than Kevlar (see *Cleaner*, November 2012). "You wouldn't dream of walking through a plant without safety glasses today," says Woodhead. "Up to now, there hasn't been a glove that could withstand a water jet injury, now there is one."

As the technology of protective gear continues to grow, expectations of employers will grow right along with it. It's a good idea to keep up with the changes so you can offer employees the latest in equipment on the job so they can go home to their families safely every night.

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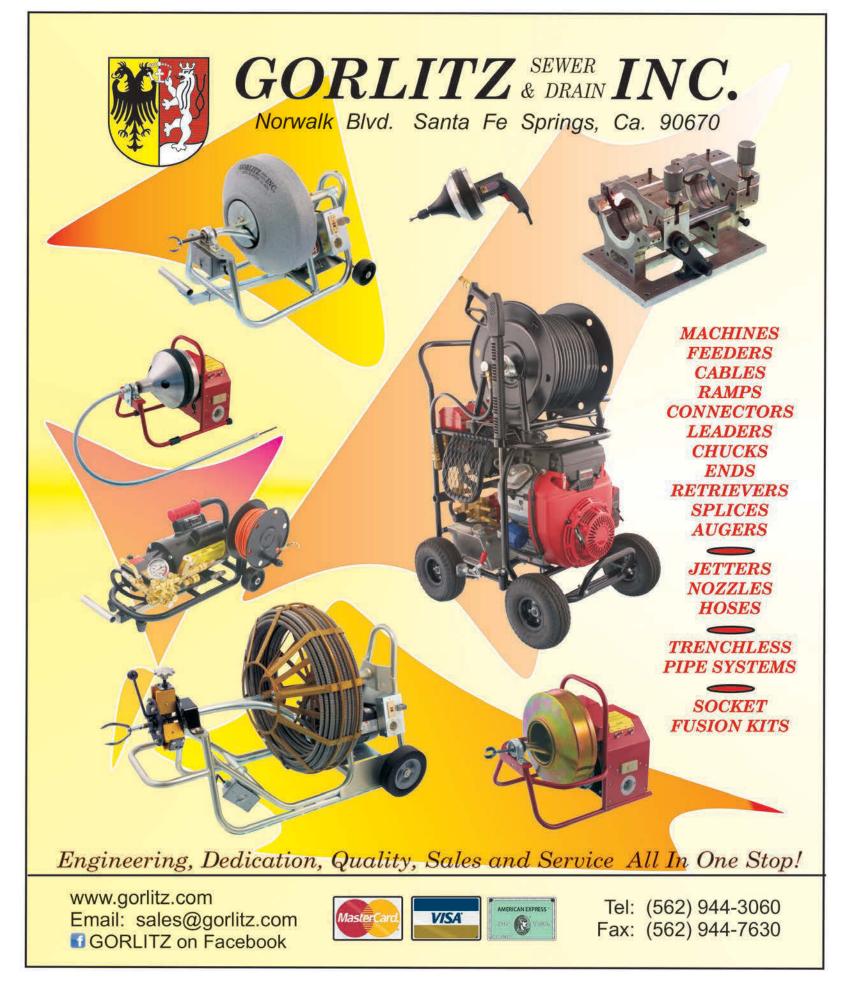
The Pulsar 2000 line tracer is designed primarily to locate metallic pipes. The Pulsar 2000 is a directional line tracer. Connect the Pulsar's powerful and unique transmitter to your target pipe and locate only that pipe. Locating can be accomplished under floors, in walls and in ceilings. The Pulsar 2000 does not require grounding.

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We have been using the Pulsar 2000 along with the XL2 fluid detector and Geophones since January 1989 in our leak locating business. Our leak locates are accurate 95% of the time, but I can honestly say, the line we trace is always there. Our equipment is userfriendly and requires very little training, as you will see on the video. Purchase the Pulsar 2000 line tracer, XL2 fluid detector and Geophones, and start locating leaks immediately.



Limit Your Liability

ESTABLISHING AN LLC SHOULD BE A SIMPLE AND EASY TASK THAT PUTS YOUR BUSINESS ON SOUND LEGAL GROUND

BY FRED S. STEINGOLD

re you currently doing business as a sole proprietorship or partnership? If so, have you considered switching to a limited liability company (LLC)?

For most small and mid-size businesses, there are good reasons to prefer operating as an LLC rather than as a sole proprietorship or partnership.

Sole proprietors and partners are personally liable for all their business debts. Operating as an LLC or corporation will limit your personal liability for these debts, so either can be an appropriate choice.

So in choosing between a corporation and an LLC, why do most businesses and their lawyers lean toward an LLC? For one thing, an LLC typically requires less paperwork. Also, it gives you greater latitude in how you manage your business and allocate profits.

Switching your business to an LLC should be easy and inexpensive. Here are some pointers on getting started.

You may be able to prepare these documents yourself using self-help books and software. If you do, play it safe: Have a lawyer look over the documents before they're final.

THE KEY PAPERWORK

Setting up an LLC typically involves two legal documents — the articles of organization and the operating agreement.

You file your LLC articles of organization with your state's LLC filing office — usually the secretary of state, located in your state's capital city. By contrast, your operating agreement isn't filed with any public agency. It's an internal document that defines the rights and obligations of LLC members (which is what LLC owners are called).

You may be able to prepare these documents yourself using self-help books and software. If you do, play it safe: Have a lawyer look over the documents before they're final.

PREPARING YOUR ARTICLES OF ORGANIZATION

Preparing your articles of organization can be surprisingly simple. Many states provide a printed form. Just fill in the blanks, sign the form, and submit it to your state's LLC filing office. If your state doesn't provide a form, it may furnish something almost as good: a sample with instructions.

Chances are you'll be able to go online and download the fill-in form or a sample form from the government's website.



Fred S. Steingold practices law in Ann Arbor, Michigan. He is the author of Legal Guide for Starting and Running a Small Business and The Employer's Legal Handbook, published by Nolo. Legal strategies may vary depending on the state in which you live and the specifics of your situation. See your lowyer for legal advice.

Typically, your articles of organization will include:

- The name and address of your LLC's initial registered agent and office. You'll probably name one of the owners as the registered agent the person who gets served with lawsuit papers if someone sues the business. He or she will also receive official correspondence relating to the LLC.
- Statement of purpose. Usually, a general statement will suffice. Example: "To engage in any lawful business for which limited liability companies may be organized in this state."
- Type of management. You usually need to say whether your LLC will be *member-managed* or *manager-managed*. In most states, if you don't specify the type of management, the members will manage it (that is, it will be member-managed).
- Principal place of business. You'll give the address of your main business location.
- Duration. You may be able to choose between a "perpetual" (unlimited) duration, and a specific number of years. Some states put a limit on the number of years you can choose 30 or 50 years, for example.
- Signatures of people forming the LLC. Usually, state law allows one person to sign the form as the organizer. You may prefer, however, to have all members sign.

PREPARING YOUR OPERATING AGREEMENT

Once the filing office has accepted your LLC articles of incorporation, you're officially in business. Now, you should prepare an operating agreement if your LLC has two or more members. It's usually optional for a one-member LLC. Consider covering:

- How a member's percentage interest is determined. Typically, it's based on how a member's capital account compares to the total of all capital accounts. So if Suzy has \$2,500 in her capital account, and the total of all LLC capital accounts is \$10,000, her percentage interest is 25 percent.
- Voting. You'll probably want to authorize a simple majority of membership interests to decide most issues, but you can also provide for a larger majority (two-thirds, for example) on major issues.
- Capital provisions. State how much money or property each member will contribute to the LLC, and what additional contributions may later be required. Also, cover how profits and losses will be allocated among the members, and when money may be distributed to them.
- Buy-sell provisions. Spell out what happens if a member dies, moves away, gets sick, or simply wants to get out of the business. Can a member's interest be transferred to an outsider? If not, how does the departing member (or the member's family) get fairly compensated for



the LLC interest? How can the remaining members avoid having to work with a new member who may be incompatible with the others? How will the interest of a departing member be valued?

HOW DO YOU WANT TO BE TAXED?

Normally, when it comes to the federal income tax, an LLC is taxed like a sole proprietorship or a partnership: A member's share of the business's income is reported on the member's personal tax return.

You have an option, however. You can elect to have the LLC itself taxed. Check with a tax pro. Then, if you and your co-owners decide that this optional method is best for your LLC, file IRS Form 8832, **Entity Classifica-tion Election**, within 75 days after you form your LLC.

Be aware, though, that only a small percentage of LLCs will find that it's beneficial to elect the optional taxation method. ${\tt c}$

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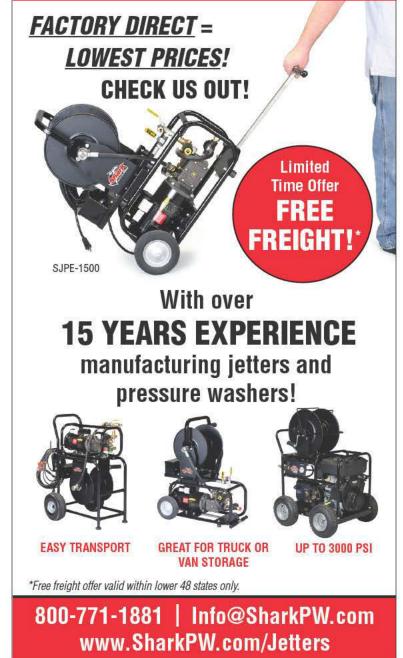




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2. COMPACT TRAILER JETTER

The compact **55** Series (formerly Mini Series) trailer jetter from American Jetter has been redesigned with a 150-gallon tank, larger wheels and a removable trailer tongue for easy storage. User-friendly controls allow for easy operation learning curves. It's powered by gas or propane Kohler engines up to 40 hp, with available flow ranges from 4 to 11 gpm and pressure to 4,000 psi. The powered reel holds up to 500 feet of 3/8- or 1/2-inch jetting hose with forward and reverse reel function and manual pull-out. Options include an anti-freeze system for cold climates and wireless remote for one-man operation. Low oil and water shutoff prevent engine and pump damage. **866/944-3569; www.americanjetter.com**.

3. TOWABLE JETTER NOZZLE

The Cnt-r-KUT "TOW HOOK" towable jetter nozzle from Arthur Products allows for pressurized water to be applied by the integration of a towing nozzle which can be pulled through the line. The technician can also pull a line from point "A" to point "B" if required. It is flexible enough to conform to damaged or deformed lines and can easily be trimmed in the field to fit virtually any line from 2 to 8 inches in diameter by attaching a 3/8- or 1/2-inch National Pipe Taper hose to one end. It is available in a standard

and mini size. 800/322-0510; www.arthurproducts.com.

4. SEWER JETTER

The Crap Shooter sewer jetter from Bull Frog Industries weighs less than 25 pounds and features 1,500 psi running off a 15-amp circuit without losing any water pressure. A 50-foot high-pressure hose with quick connect attaches to the unit, and two heavy-duty nozzles are specifically designed to enhance performance. Designed to handle up to 3-inch pipes, two different faucet adapters make the unit versatile. All fixtures and hoses can handle up to 120-degree water temperatures. A heavy-duty case with carry handle encases the entire unit. 303/338-0805; www.bullfrogind.com.

5. SKID MOUNT JETTER

The RCJ Series skid mount jetter from Cam Spray is offered in flows and pressures of 12 gpm at 2,700 psi, 8 gpm at 3,500 psi and 7 gpm at 4,000 psi. It has a three-plunger industrial pump with pulse feature powered by a 688 cc Honda Engine. It features 200 feet of jetter hose that can also be used to supply an optional portable reel cart available with 200 or 300 feet of hose. It's equipped with a 35-gallon buffer water tank with float control, powder-coated heavy tube frame, wash-down gun and a four-nozzle set. It easily mounts in the side door of a cargo van, on a truck bed or inside a service truck. 800/648-5011; www.camspray.com.

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7. FLOOR/BOTTOM CLEANER

The Grouper Floor/Bottom Cleaner from Cloverleaf Tool Co. is available in four sizes, all featuring 60 to 120 gpm at 1,800 to 3,000 psi. It features replaceable jets, a rotating swivel joint, and flat-bottom construction ideal for the removal of heavy solids at the bottom of storm and sewer pipes. It can be used in 18- to 72-inch-diameter pipe, features 10 or 12 carbide rear jets, and comes with either a 1- or 1 1/4-inch hose connection. 800/365-6583; www.cloverleaftool.com.

8. AIR/FLUID TRANSFER REEL

Pure Flow Series reels from **Coxreels** are designed for air and clean fluid transfer applications. Available in spring rewind, hand crank and motorized retraction models, the reels have non-corrosive air and fluid paths machined from high-quality stainless steel, along with full-flow swivel and nitrile, non-toxic, food-grade seals. 800/269-7335; www.coxreels.com.

9. CCTV INSPECTION SYSTEM

The K2 Base Station from CUES is a self-contained CCTV inspection system supplied in a compact, rugged, weatherproof enclosure that can fit into an ATV, van, trailer or pickup truck to access easements and hard-to-reach areas. It's operated by a hand-held portable wireless control. A built-in heavy-duty reel is supplied with automatic video cable payout to withstand the rigors of side load forces during daily operations. It can be supplied with a maximum of 1,500 feet of video cable. 800/327-7791; www.cuesinc.com.

10. JETTER HOSE

The 4,000 psi jetter hose line from Draincables Direct is available in 1/8- up to 1/2-inch inside diameter, in lengths up to 500 feet. The hose has a temperature range of -40 to 122 degrees F, and features a green high-abrasion and fungus-resistant polyurethane cover. It is ideal for use with all high-pressure sewer-jetting equipment. Custom hose sizes are available. 800/421-4580; www.draincables.com.

11. DRAIN CLEANING MACHINE

The DM138 drain cleaning machine from Duracable Manufacturing cleans lines from 1 1/4 to 3 inches in diameter. It has a continuously welded frame, heavy-duty front bearing mount and self-aligning head bearing to ensure proper reel placement, quick reel change and extended machine life. Designed for residential sink, shower and bathtub drains, it has a heavy-duty, 20-amp switch and revolving arm, and is powered by a 1/4 hp motor that operates at 230 rpm. The 14-inch polyethylene reel won't rust or dent and is easily drained with plugs located on the back of the reel. It can be operated either upright or horizontal, and has non-marring rubber pads to protect the floor. 877/244-0556; www.duracable.com.

12. PIPE INSPECTION CAMERA

The EasyCAM E3200 was designed from a plumber's perspective, using easily replaceable modular components. When repairs are needed, the owner can easily do them, as no special tools are needed. It includes a lightweight titanium color camera head, 200 feet of HYTREL abrasion-resistant pushrod with molded waterproof connectors, 512 Hz transmitter, on-board 8-inch daylight readable monitor, powder-coated aircraft aluminum frame, RCA video jack for laptop or DVR use, safe 12-volt operation, heavy-duty wheels and a two-year warranty. 239/260-2056; www.easycamllc.com.

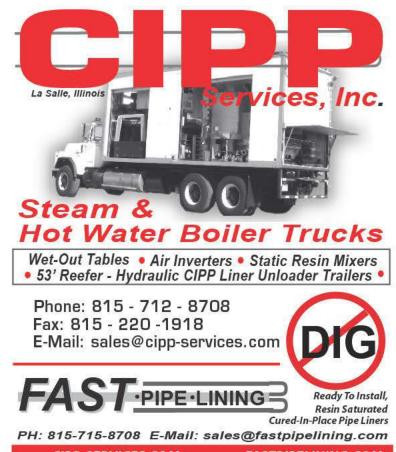
13. DRAIN AND SEWER CLEANER

The Model C dual cable sectional drain and sewer cleaner from Electric Eel runs up to 200 feet of 1 1/4-inch self-feeding dual cable in 8- or 10foot sections that require no handling when rotating. A heavy-duty 1/2 hp motor comes standard, with 3/4 and 1 hp motors available. The heavy-duty, fully adjustable safety clutch keeps cable and tool breakage to a minimum and provides overload protection. A fold-down handle allows for easy transportation, storage and use in crawl spaces. It also includes a carry handle for balance and easy transport. 800/833-1212; www.electriceel.com.



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14. ROTATING CUTTING NOZZLE

The Rotodrill nozzle from Enz USA features a rotating front jet for improved cutting performance. It is highly effective clearing blocked pipes, frozen pipes, and moving heavy debris. It has excellent propulsion but can also be used in hydroexcavation by plugging off the thrust jets. It is available in 1/2-, 3/4-, and 1-inch sizes. 877/369-8721; www.enzusainc.com.

15. HAND-HELD INSPECTION TOOL

The Gen-Eye Micro-Scope compact hand-held inspection tool from General Pipe Cleaners gives technicians the versatility to inspect small drainlines and toilet traps, or hard-to-reach places like duct work, furnaces and crawl spaces. The monitor attaches to the reel with an adjustable mount to give the best viewing angle. The reel carries up to 100 feet of micro-push rod with color camera. It features a 39-inch probe rod, bright 3.5-inch LCD screen, built-in SD card reader with one-touch record, digital zoom, rotatable picture, voice-over recording capability, LED brightness control and USB port. On-screen status indicators include date and time, SD card capacity and battery strength. The rechargeable battery powers the unit for up to four hours. 800/245-6200; www.drainbrain.com.

16. ELECTRIC CLEANER

The GO 68HD heavy-duty electric drain cleaning machine from Gorlitz Sewer & Drain is available with an open steel reel or enclosed polyethylene drum, and can be outfitted with an optional power feeder. Standard configuration is 150 feet of 11/16-inch hollow core cable, which should reach most blockages with a single reel. The 185-pound unit is designed to clean pipes from 3 to 18 inches in diameter. Use of a loading ramp and electric winch makes transportation quick and simple. 562/944-3060; www.gorlitz.com.

17. HIGH-PERFORMANCE JETTER

The Sewer Duck from GPM Pump and Truck Parts & Service is a highperformance jetter available in 1,000- and 3,000-gallon capacities. It comes standard with a Perkins engine, with Cummins and CNG engine options available. The engine and pump enclosure comes with an aluminum roll-up door for access. The jetter is easily transferable from one chassis to another. A tandem axle chassis is available on 3,000-gallon units, with an optional cold weather package. The rear engine keeps the unit self-contained, separating the chassis from the jetter to reduce fuel costs. The hydraulically operated rotating hose reel has a mounted throttle control and 700-foot hose. 630/543-7373; www.gpmpumpandtruck.com.

18. SEWER PUMPS

HD-146 and HDP-196 sewer pumps from Hammelmann Corp. are suited for dirty water applications. With flow up to 160 gpm and pressures of 3,200 psi, the pumps can handle any sewer blockage problem. The compact design offers an integral reduction gear. Installation options include horizontal or vertical models, reversible pump head, central or side suction connection, discharge connections on both sides and left or right drive shaft. The pumps operate at any angle. All service access is from the front and above the units. Fixed valve housing is accessible via lightweight cover plates. Twin helical gears provide a quiet drive end. 800/783-4935; www.hammelmann.com.

19. SEWER CLEANING HOSE REEL

The 6200 Series sewer cleaning hose reel from Hannay Reels features a heavy-duty ball-bearing swivel base, ribbed discs, and one-piece axle hub assembly. It is engineered with a direct-drive hydraulic motor that allows for precise payout of hose from the reel without the maintenance needed by chain and sprocket-driven drives. With a capacity of 500 feet of one-inch ID hose, it supplies smooth operation through a swinging hose guide arm with roller and operator handle. An external hose connection allows access without removing all the hose from the spool. Every reel is custom-built to customer specifications. 877/467-3357; www.hannay.com.

20. VAN JETTER

The Van Pack waterjetter from Harben allows operators to put a full-size jetter into an enclosed and heated van. Users can mount a 4,000 psi/18 gpm (continued)

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VACALL

The industry's most productive hydro excavator now offers greater debris disposal efficiency with a uniquely designed high dump option. Vacall AllExcavate high dump models use a rugged hydraulic system and wireless remote control to raise the debris tank as much as 76 inches – the most in the industry – and then shift the tank horizontally 21 inches, reaching beyond the rear bumper and over the edge of roll-off containers. This capability can reclaim productive time lost for travel to ground level dump sites, improve dumping efficiency and even eliminate spills by providing the operator a clear view of the debris removal process.



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unit in a powder-coated, lightweight folded steel skid/frame measuring 75 by 53 by 61 inches. It has a dry weight of 1,600 pounds. The system comes standard with the Harben P Pump; a 108-gallon water tank (additional tanks available based on van payload); a 48 hp Kubota water-cooled diesel engine; 500-foot capacity hydraulic hose reel; and a hinged, telescoping manual garden hose reel. Options include a jump jet pulsation system, antifreeze system, MK II dump washdown gun, 1/4-inch mini-jet kit, strobe, manhole and workstation lights, and a range of nozzles and accessories. A complete system will allow cleaning of drains from 2 to 18 inches in diameter. **800/327-5387; www.harben.com**.

21. DIGITAL RECORDER

The **Optimum HDD12.1** digital recorder from **Hathorn Corporation** utilizes a bright 12.1-inch HDMI monitor when working outside. The system features adjustable lighting, 512 Hz sonde, 16 pages of text writing, 8x zoom, voice recording, a spill-proof keyboard, onscreen footage counter, multiple reel selections including other brands and a 4-hour battery pack with a built-in smart charger. Inspections can be recorded to a 320 GB hard drive or directly to a USB stick. Files can also be transferred to a computer via a USB cable. Reel types available include a 200-foot standard with self-leveling camera, a 200-foot mini with color mini-camera, and a 200-foot micro with 7/8-inch color micro-camera. **905/886-2835; www.hathorncorp.com.**

22. TRENCHLESS CLEAN-OUT SYSTEM

The VAC-A-TEE trenchless clean-out system from LMK Technologies can be installed with minimal disruption and restoration through hydroexcavation, while saving landscaping from being disturbed. It can be installed in a few easy steps using minimal equipment. It works with a variety of pipes, including vitrified clay pipe, concrete, PVC and cast iron. **815/433-1275; www.lmktechnologies.com**.

23. MID-SIZE INSPECTION SYSTEM

The **MS11** mid-size inspection system from **MyTana Mfg. Company** is suitable for inspecting 3- to 4-inch lines up to 150 feet long. The one-piece design means the monitor, control box, pushrod reel and camera are all contained in a single piece of equipment with a carrying handle. In addition to self-leveling, the color camera head has a built-in 512 Hz transmitter for

locating trouble spots. The unit is also equipped with connectors for recording jobs with an optional DVD burner or DVR with S-Card media. **800/328-8170**; **www.mytana.com**.

24. ROTATING JETTING NOZZLE

The **Typhoon 10** self-rotating jetting nozzle from **NLB Corp.** utilizes high-pressure water to clean 5/8- and 3/4-inch pipe. Designed to produce rotating action from the nozzle instead of the barrel, it forces the water jets up front where they are most effective. The nozzle comes in two 10 gpm speeds (up to 15,000 psi and up to 24,000 psi) and two 20 gpm speeds (up to 15,000 psi) and up to 20,000 psi). All models rotate at 7,000 rpm and are made of high-grade stainless steel for durability. They feature a NLB seal design to reduce leakage and can be ordered with four jets for polishing, or five jets for cleaning and cutting. Two more Typhoon nozzles are available for larger pipes. **800/441-5059; www.nlbcorp.com.**

25. LATERAL-CUTTING NOZZLE

The **Lumberjack 50 Series** lateral-cutting sewer nozzle from **NozzTeq** is available in four sizes from 3 to 6 inches, and can be used as a large front knife or with a flat plate for tuberculation. It runs on as low as 7 gpm at 1,500 psi, can run at speeds up to 25,000 rpm, and has grease-sealed, water-cooled bearings. It can reinstate lines that need a quick fix and can be used on small lining jobs from the service to the main. It can maneuver through 45-degree sweeps. **866/620-5915; www.nozzteq.com.**

26. FLEXIPROBE PUSHROD INSPECTION SYSTEM

The **P340 Series Flexiprobe** pushrod video inspection system from **Pearpoint/SPX** offers USB flash drive connectivity and robust 1- and 2-inch high-resolution cameras. A weatherproof flexiprobe controller records high-quality digital video or images with a single key press, and displays them on an ultra-bright 8-inch TFT screen. Users can zoom, pan and rotate images during recording and playback to focus in on problem areas. Still pictures can be taken at any time. It is designed to travel through the tight corners found in commercial and residential plumbing, negotiating most traps (from 2 inches) and bends (from 1 1/4 inches). The built-in sonde can be used to pinpoint its position with a suitable cable and pipe locator. **800/688-8094; www.radiodetection.com**.





PIPE WOLF NOZZLES

Have you ever had a Sanitary Sewer Overflow emergency due to a total blockage? Rest assured, all you have to do is just send the **Wolf**, the

Pipe Wolf that is. This unrivaled nozzle is the only tool you need in those emergency situations caused by roots, grease, silt or any other organic material. A tempered stainless steel head is turbine driven and spins at approx. 6,000-12,000 RPM depending on the flow and pressure of the pump. The Pipe Wolf succeeds where standard hydrodynamic tools fail and will penetrate and remove the blockage or obstruction.

BEST BANG FOR YOUR BUCK!



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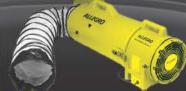
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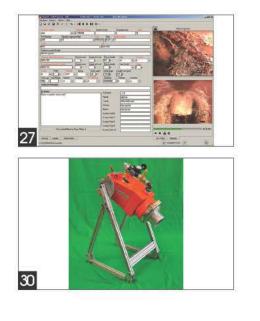


Tripod Systems: S50G-M7 - TP7 tripod, R50G rescue unit, MW50G work winch, as shown.

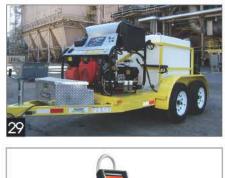
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27. DATA COLLECTION SOFTWARE

MuniXS data collection software from PipeLogix enables technicians to capture and analyze leaks, inflow and infiltration sources and other pipeline defects with ease. It interfaces with most CCTV controllers, and records digital video files in the WMV format for outstanding picture quality with economical file size. Technicians can also capture still photos from live or previously recorded video. A built-in CD/DVD burning feature provides a method for quick and easy distribution of surveys. You can import/export to the PACP standard and print or save basic reports in PDF format for sharing and email distribution. 866/299-3160; www.munixs.com.

28. JETTING HOSE

Slither Jetting Hose from Piranha Hose Products is a high-pressure thermoplastic sewer cleaning hose designed with an ultra-slick cover to snake around and through the difficult bends encountered in many residential sewer cleaning applications. Hoses with ID size of 1/8- to 3/8-inch have a high temperature rating of 160 degrees F, while hoses with the ID size of 1/2- to 1 1/4-inch have a high temperature of 150 degrees F. Hoses can be swaged or crimped. 800/250-5132; www.piranhahose.com.

29. TRAILER POWER WASHER

Trailer power washers/water blasters from **Powerline Industries** feature power plants from 18 to 35 hp with outputs up to 10 gpm and pressures from 3,000 to 5,000 psi with hot or cold water. They are fully engineered for continuousduty service, with triple V-belt-driven General Emperor Series pumps, a separate 115-volt generator to power the electrical system, and a pump-saver system. Capacities start at 200 gallons on single axle trailers, and up to 1,050 gallons on larger trailers. They are available in open trailers, skid power units and enclosed trailer units. 800/624-8186; www.powerlineindustries.com.

30. SEWER LATERAL LINER SYSTEM

The sewer lateral lining system from Quik Lining Systems is easy to operate and makes CIPP installation simple. It allows the user to install pipe directly from the "wet out" stage into the ground without transporting, storing or loading it into the launching device. It also allows the technician to install unlimited lengths of resin-impregnated liner from 3- through 8-inch diameters, and can handle all products designed for an inversion-type installation. 605/868-8670; www.quiklining.com.

31. PUSHROD INSPECTION CAMERA

GatorCam4 systems from Radiodetection deliver high-quality inspection in almost any situation, from residential work and commercial use through specialist plant and municipal applications. The rugged and compact construction offers a portable system that can be used in most weather conditions. They feature industrial-grade 8-inch LCD screens, USB flash drive connectivity, robust 1- and 2-inch high-resolution cameras, on-site reporting capabilities and video titling. It can be configured to suit most inspection requirements. A range of pushrods is available, from an extra-flexible 100foot plumber's reel to navigate the bends and traps found in commercial and residential plumbing, up to the 500-foot extra-stiff rod designed to push for longer distances. 877/247 3797; www.radiodetection.com.

32. MINI PUSH CAMERA

The MiniLite push camera system from RapidView IBAK North America is a pipe inspection system that allows users to inspect, record and measure the internal dimensions of smaller pipelines. During normal inspection, users can accurately capture diameter measurements with one touch using the ORION Zoom Camera. The system consists of a cable coiler cartridge, which makes replacement easy, a portable command console and one of several choices of cameras. It includes a high-visibility 10.4-inch monitor and a full QWERTY keyboard. Inspections can be recorded on a built-in MPEG digital video recorder on SD and SDHC memory cards. The system is currently available in 100- and 130-foot lengths. 800/656 4225; www.rapidview.com.

33. TILTING PUSH CAMERA

The Pan n' Tilt Push Camera from Ratech Electronics is a portable (continued)





inspection system for pipes and drains as small as 4 inches in diameter. Originally used as a mainline camera, it has been redesigned to fit into small lateral pipes. It rotates 360 degrees and 210 degrees up and down, allowing technicians to view the pipe condition easier and in more detail. An optional steerable gooseneck assists the camera in the desired direction. Also included is a 512 Hz sonde, 200 feet of standard Gel-Rod cable with up to 400 feet available, an on-screen text display overlay system, electronic distance counter, time and date display, and eight pages of memory. 800/461-9200; www.ratech-electronics.com.

34. PIPELINE REHABILITATION SYSTEM

QuickLock Point Repair from Rausch USA is a permanent pipeline rehabilitation installation that features a 316L stainless steel sleeve encased in an EPDM rubber sleeve that is mechanically compressed against the inner pipe wall and is permanently locked in place by two gear mechanisms. No chemicals or resins are used in this system, so there is no cure time. Applications include sealing leaking joints, fixing cracks and holes, preventing root intrusion and abandoning laterals. It reinstates the structural strength of the pipe, and will withstand and pass internal pressure tests. Since there are no chemicals involved, it can be installed with flow present. It comes in several sizes to cover a range from 6 to 32 inches in pipe diameter. 717/709-1005; www.rauschusa.com.

35. JETTER REEL SYSTEM

The jetter reel turnkey system from Reelcraft offers a complete solution for jetter applications. Systems are designed in-house and built to customer specifications. The system is designed to fit inside a standard truck bed. It includes a hydraulic power pack with 8 hp motor, special hose for well cleaning applications, directional control valves and air pressure manifold. 800/444-3134; www.reelcraft.com.

36. ROOT-SHEARING NOZZLE

The RIDGID RR3000 Root Ranger nozzle is designed to clear cracked lines infested with roots. With a single rear-facing turbojet, it blasts a concentrated stream of water that shears root obstructions from the drain wall. It is capable of clearing lines up to 8 inches, and can clear lines larger than the one it originally entered. For example, if the easiest access point for a 6-inch line is an upstream clean-out in a 2 1/2-inch line, a traditional drain cleaner is limited by the cutter size that will fit the smaller line. A jetter can clear up to its rated capacity regardless of how it got into the line. It comes standard with 200 feet of hose. 800/769-7743; www.ridgid.com.

37. REMOTE PUSH CAMERA

The RiFlexio S push camera from Ritec GmbH can be pushed over deposits or staggered pipe joints, extending pipe inspections further. The camera head is remotely lifted upward and pushed over the obstacle, and can turn in pipes 2 inches in diameter, making it ideal for slim work areas. The head can turn 90 degrees inside the pipe without loosing its rotational capabilities. www.ritec-tv.de.

38. ROOT CONTROL SOLUTION

Root control solution from RootX uses a foaming herbicidal formula to clear sewer lines, drains and septic systems blocked by roots. It kills roots on contact and inhibits re-growth, even at the top of the pipe, where 90 percent of intrusion occurs. Root debris begins to decay within 12 weeks, and nine months later, the roots are virtually gone. It doesn't contain copper sulfate or metam sodium, and is EPA-accepted for use in all 50 states. 800/844-4974; www.rootx.com.

39. JET CAM

The Jet Cam from RS Technical Services is a single-conductor inspection solution adaptable to most jetter systems. It is powered by a 12-volt DC battery system and allows the operator to see the condition of 2- to 24-inch-diameter pipes to clean them instantly. Features include a motorized cable reel with rewind speed and torque controls and the choice of 650 feet of steel armor or plastic-jacketed Kevlar single conductor cable; a control unit with TFT, 10-inch LCD display monitor and isolated and regulated power; auto-upright, high-resolution color camera in a stainless steel casing with wide angle lens, high-intensity LED lights and remote intensity control; and stainless steel skids to suit various line diameters. 800/767-1974; www.rstechserv.com.

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- 360° pan- and 180° tiltable camera eye
 - Easily negotiates 90°-bends
 - LED lighting illuminates the darkest environments
 - Digital distance measuring
 - Effortlessly inspect pipework, air ducts, vents, cracks, welding seams, gaskets, and much more!
 - New re-lining adapter kit makes for efficient pipe repair
 - 1" straight camera head and 1 1/2" pan-and-tilt camera head
 - Record inspections
 - Prevent problems before they occur

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40. GREASE TRAP TREATMENT

Simple Solutions bacterial grease trap additive BS-921 is ideal for use in plugged commercial grease traps. It systematically breaks down thick grease buildup. The company offers a range of formulations, including blocks and liquid additive, to allow technicians to custom-design their grease treatment programs, including combinations of different products for optimum grease control. 866/667-8465; www.industrialodorcontrol.com.

41. IPAD PIPE INSPECTION CAMERA

The Sparvision 200 Hero Shot from Spartan Tool is a pipe inspection camera that makes full use of iPad technology. A fully functioning iPad serves as the screen for the camera, giving you flexibility on and off the job site. Functions include instant snapshots, on-screen drawing and a full keyboard. It comes with a self-leveling color camera, a locating beacon, 200 feet of high-efficiency push rod and an optional 50-foot Trap Eze ultra-flexible push rod for quick peeks into small diameter drains. Technicians can get up to six hours of battery life on a single charge. 800/435-3866; www.spartantool.com.

42. HYDROEXCAVATION LANCE

The Hydro-X Lance Assembly from StoneAge is a hydroexcavation jetting tool that can be used to locate utilities and precisely excavate an area with high-pressure water. Jetted with a single replaceable OCIH 1/4 NPT carbide nozzle, this 60-inch lance with a 1/2 NPT male connection gives extra reach for digging deep, focused holes. The assembly includes a guard and collar system to protect the nozzle. 866/795-1586; www.stoneagetools.com.

43. SMOKE BLOWER

The Model 25 high-output smoke blower from Superior Signal is engineered to find sources of surface inflow. It can be configured for use with smoke candles and/or smoke fluid to quickly and easily detect sources of inflow and other faults in sanitary sewer lines. It blasts 4,000 cfm of smoke at 4.0 static pressure to push smoke through larger systems requiring greater volume and pressure. It fits all standard manholes, plus has a second outlet to blow into pipes and other openings. The Smoke Fluid System uses a proprietary insulated heating chamber with stainless steel injector to maximize dry smoke output. 800/945-8378; www.superiorsignal.com.

44. MINI-CAMERA INSPECTION SYSTEM

The ProCam DVR Ultra from UEMSI is a compact and lightweight color mini-camera inspection system. It includes a 10.4-inch color LCD monitor and a built-in DVR that records video files and photos to an SD card. The push reel is made of powder-coated steel for durability. The nylon-jacketed push cable has a water-blocking gel inside to prevent water infiltration. The data display package includes on-screen digital footage and a full-size flexible keyboard. Options include an inline transmitter and rechargeable battery pack. 800/666-0766; www.uemsi.com.

45. CHAIN CUTTERS

Turbo chain cutters from USB-Sewer Equipment Corporation are made of tempered stainless steel and offer unique, continuously adjustable guide skids. The chain retainer is driven by a high-performance turbine to remove roots, grease and mineral deposits from 4- to 48-inch sewer lines. With an optimized 3-D hydromechanics design in conjunction with ceramic nozzle inserts, the cutters use recycled or clean water. They can also be used as barrel cutters with diamond bits for smooth removal of protruding laterals. Heavy mineral deposits can also be removed with carbide bits attached to the specialized chain. 866/408-2814; www.usbsec.com.

46. COMBINATION SEWER CLEANER

The Vacall AllJetVac P Series combination sewer cleaner uses a positivedisplacement blower system to create superior jetting and vacuum forces to efficiently open and maintain critical sewer lines. The blower system is powered by the chassis engine, which reduces fuel consumption, slashes service time and eliminates extra emissions while holding down the overall cost of the



machine. The AllSmartFlow CAN bus control system comes standard on all models and allows the operator to precisely control vacuum forces as well as water flow. All models have a front-mounted, pivoting hose reel and an 8-foot, 6-inch extending boom with 180-degree rotation. 330/339-2211; www. vacallindustries.com.

47. ROOT CONTROL OPTION

Vehicles from Vac-Con are now available with the Vaporooter Jet Set Commander. Vaporooter uses a combination of metam sodium and dichlobenil to eliminate roots. Metam sodium penetrates root cells and destroys roots on contact, while dichlobenil bonds to pipe walls, joints and cracks, preventing new root growth from blocking pipes for years. At the push of a touch-screen button, operators go from jetting to foaming in seconds, and then simply retrieve the hose while filling the pipe with Vaporooter foam, killing roots on contact and preventing them from causing a blockage. The computerized system is now available as an option on Vac-Con vehicles. 888/491-5762; www.vac-con.com.

48. DUAL-HEAD INSPECTION CAMERA

The VIS 340 Plus inspection camera system from Wohler USA features

dual camera heads, giving technicians more flexibility when it comes to troubleshooting. It comes with a 1 1/2-inch, 360-degree-pan and 180-degree-tilt camera head, and a 1-inch straight camera head. Both heads are waterproof and come with LED lights. It can be used to analyze defects in water pipes and inspect ducts, welding seams, gaskets and manholes. Use the VIS 340 Plus' digital distance measurement feature to pinpoint the exact location of trouble spots along the way. Inspections can be recorded, saved and replayed on a laptop. **978**/750-9876; www.wohlerusa.com.

49. PUSH-CAMERA SYSTEM

The SEEKER push-camera from Aries Industries is a user-friendly, contractor-grade examination tool for pipes from 3 to 24 inches and for distances up to 300 feet. It can be operated as a stand-alone system or in conjunction with a CCTV truck to record all of the video to a PC or laptop. It is a self-contained system with no external wiring. Weighing as little as 40 pounds, it is easily transported to any job site and comes standard with a built-in 512 Hz transmitting beacon and bright 6.4-inch LCD screen. Options include digital video recording, on-screen footage, wireless video transmission up to 300 feet away, rechargeable battery, PAL video and live-line tracing. 800/234-7205; www.ariesindustries.com.





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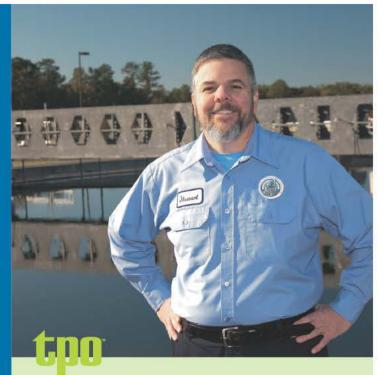
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RESIDENTIAL AND COMMERCIAL SEWER AND PIPE MAINTENANCE BY SCOTTLE DAYTON

MICRO-CUTTER RENEWS PIPE SYSTEM

PROBLEM

The 40-year-old cast iron stormwater drain at the Phoenix Plaza office building in Hartford, Conn., drained poorly due to root intrusion and debris.

SOLUTION

E&G Waterworks in Templeton, Mass., cleaned 1,200 feet of 4-inch and larger pipe with the Pneumatic Micro-Cutter from Nu Flow. The system rotates at 1,500 rpm in 1.5- to 6-inch pipes up to 100 feet long and negotiates 90-degree turns in even 2-inch pipes. The cutter, also used for reinstating, works in steel, cast iron and Orangeburg pipes.

RESULT

The tool allowed workers to clean the pipe with minimal disruption, then line certain sections of it with Nu Drain. 905/433-5510; www.nuflowtech.com.

MANHOLE INSERTS STOP ILLEGAL GREASE DUMPING

PROBLEM

The Riverside County (Calif.) health staff informed Bruce Clark, owner/manager of Clark's Nutrition and Natural Foods Market and Organic Café in Rancho Mirage, that the grease interceptor was overflowing, but not with grease from his business.

SOLUTION

Clark hired SewerLock to install stainless steel manhole inserts with keyed alike shrouded padlocks in the five grease interceptor access holes. Using four anchor bolts and Liquid Nails, the installation took less than 30 minutes per insert.

RESULT

The inserts ended midnight grease dumping and the costly cleanups. 408/761-5882; www.sewerlock.com.

SYSTEM DECREASES MAINTENANCE COSTS

PROBLEM

The decentralized sewers and two lift stations serving a private mobile home park in Manatee County, Fla., required monthly cleaning to remove grease.

SOLUTION

BESTechnologies installed a system that automatically injected biological dosing material immediately upstream from trouble spots.

RESULT

Park manager Charles Meyers realized a return on his investment in less than 12 months. He decreased annual maintenance costs by more than 50 percent, as only occasional spot cleaning was necessary. 941/907-7788; www.bestechcorp.com.

BIOREMEDIATION DISSOLVES GREASE

PROBLEM

The high cost of removing grease from 60 lift stations at a Virginia utility led officials to test various products in the collection system, but none solved the problem.

SOLUTION

In 2011, the utility installed BioPlugs from Vaporooter. The multi-strain bacterial formula converts grease to harmless carbon dioxide and water. The plugs release bacteria into the lift stations for 30 days, then are replaced in a few minutes.

RESULTS

The product reduced grease enough to eliminate routine cleaning of most lift stations. The utility plans to expand its bioremediation program. 800/223-3684; www.vaporooter.com.

















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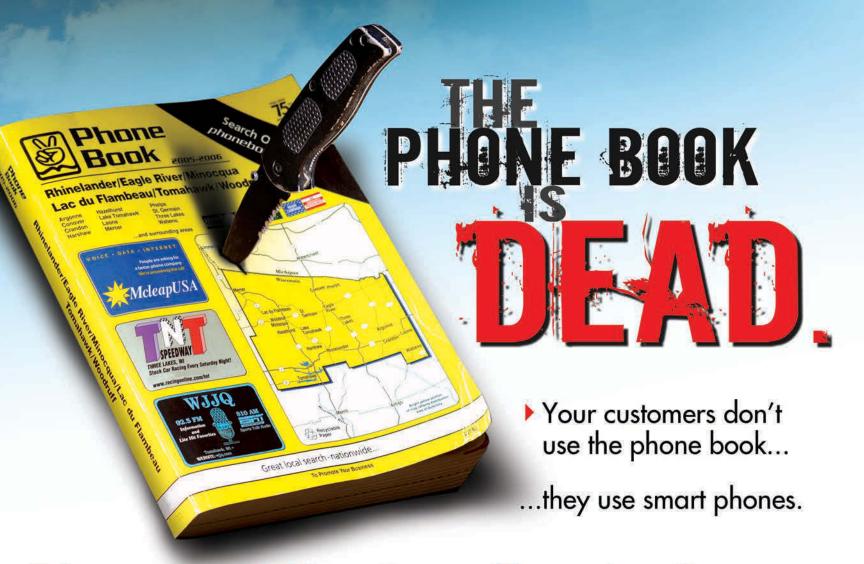
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PRODUCT SPOTUGHT

In-bed polyethylene diesel fuel tank reduces weight, prevents corrosion

BY ED WODALSKI

The 60-gallon, polyethylene, in-bed diesel fuel tank from Titan Fuel Tanks is made to resist the corrosive properties of diesel, biodiesel fuels and additives. The 51-pound customizable tank is fully baffled to prevent load shifting. It can be secured using eye-nuts or the optional utility riser bracket, which provides up to 4 inches of clearance for under-tank storage.

"What makes this different from aluminum or steel tanks is weight," says Klint Anderson, design engineer with Titan. "It installs a lot easier and decreases the amount of weight that you have in your truck bed." One person can install or remove a tank, which gravity-feeds into the vehicle's fuel system. An insert at the top of the tank enables it to accommodate an auxiliary transfer pump.

Made of cross-linked polyethylene (XLDPE), the tank is designed for durability and eliminates the possibility of lining failure. The polymer material also is 200 times less conductive (heat or cold) than steel. The added conductive properties prevent corrosion and helps keep fuel closer to optimal combustion temperature.

Made to fit most full-size, American-made pickups, the molded tank can withstand the stress of off-road use and requires little to no maintenance. The tank's seamless design and contoured edges add to the truck's overall appearance. "When you put one of our in-bed tanks in the truck, especially if you have a bed liner, it matches the bed liner extremely



well. And you get a finish that holds up over time," Anderson says.

Features include a toe-clamp, eye-bolt mounting system that provides tie-down locations, free-spinning locking fuel cap to prevent theft and a mechanical fuel gauge (in-cab electric available). Molded lifting handles on each side of the tank offer ease of movement from truck to truck.

Options include diamond-plate for enhanced appearance and bolt-on tool boxes (short and tall models in aluminum and black finish). A motorcycle bracket

with wheel chocks offers additional carrying capacity, while a rollover valve atop the tank and in the fill system provides added safety in case of an accident. 800/728-4982; www.titanfueltanks.com.

RIDGID SOIL PIPE CUTTER

The 238-P powered soil pipe cutter from RIDGID cuts soil pipe in hard-to-reach places, including rafters or below grade. Weighing 13.5 pounds and 11.5 inches long, the cutter is designed for use with a 1/2-inch impact driver. The chain can cut no-hub cast iron, service weight cast iron and clay pipe up to 8 inches in diameter, and concrete pipe up to 6 inches in diameter. Two-direction operation enables the



user to score pipe before cutting, while the torque limit protects against overloading. 800/769-7743; www.ridgid.com.

TT TECHNOLOGIES CONSTANT-TENSION WINCHES

Grundowinch hydrostatic constant-tension winches, available in 3-, 5- and 10-ton sizes, are designed for pipe bursting, underground cable pulling, sliplining, pipe pulling and swage lining. Constant tension senses



and automatically takes up any cable slack. All models feature protective cable storage and are available with air-cooled diesel or gasoline engines, as well as an adjustable boom system. 800/533-2078; www.tttechnologies.com.

XYLEM WATER REMOVAL, FLOOD CONTROL APP

A mobile app of the Xylem Dewatering Handbook provides users with access to dewatering, water removal and flood control pump product information from the company's Flygt and Godwin brands. The app is available for download from the iTunes App Store. https://itunes.apple.com/app/ xylem-dewatering/id582035365?mt=8.



MCELROY SUPER 28 FUSION MACHINE

The Super 28 fusion machine from McElroy pairs a 28 fusion machine carriage for fusing 2-inch IPS to 8-inch DIPS polyethylene pipe with larger-tracked, diesel-powered TracStar 412 and 618 chassis for job sites where gasoline is unavailable or

not allowed. The fusion machine is available as a combination unit with saddle fusion capability. 918/836-8611; www.mcelroy.com/fusion. c

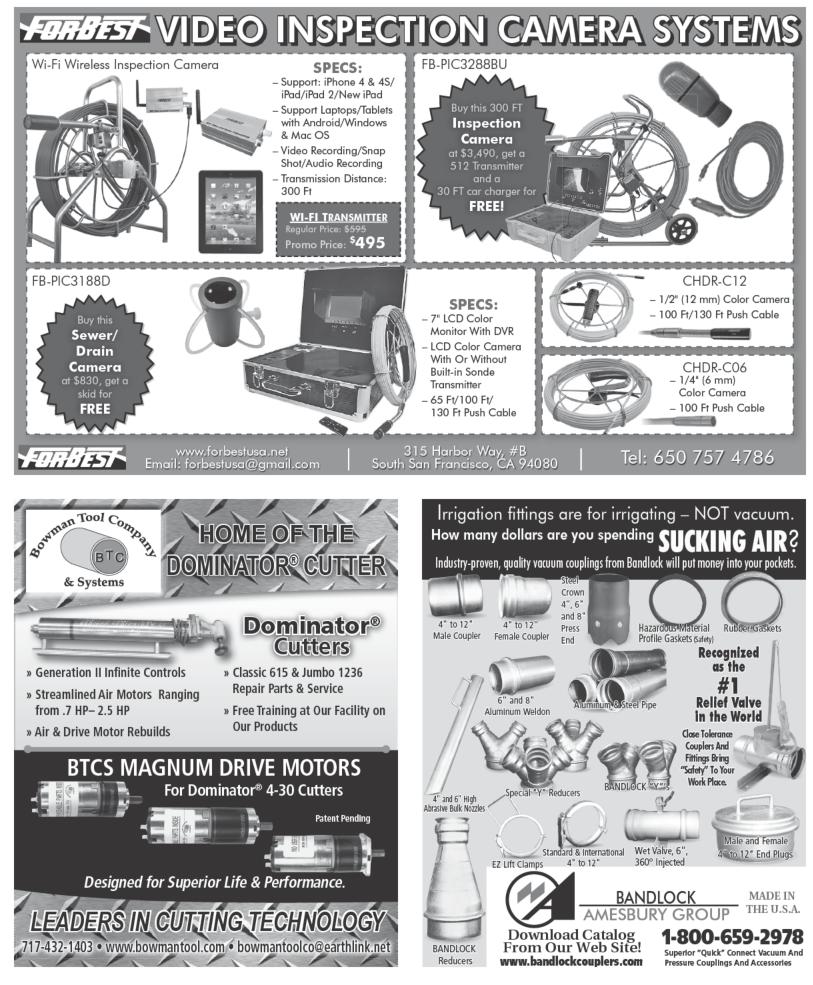
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PETERS WINS TIGRE SALES COMPETITION

Douglas Peters, national sales manager-plumbing for Tigre USA, was among 10 winners of the Tigre Group S/A companywide 2012 Fittings Sales Competition. He will join sales representatives from each of the company's international divisions for an all-expenses-paid trip to Brazil, including a tour of the company's headquarters in Joinville and weekend in Florianopolis.

HOLDEN INDUSTRIES ACQUIRES VECTOR TECHNOLOGIES

Holden Industries, parent company of Vac-Con, acquired Vector Technologies. Based in Milwaukee, Vector designs and manufactures industrial vacuum cleaning systems for hazardous and non-hazardous material handling. Holden Industries is an employee-owned company based in Deerfield, Ill., with manufacturing facilities in Illinois, Wisconsin, Ohio, Florida, Texas, Georgia, Michigan, California and Arizona, as well as India and Taiwan.

FEDERAL SIGNAL OPENS RENTAL, SERVICE CENTER

Federal Signal Corp.'s Environmental Solutions Group opened an FS Solutions rental and service center in New Brunswick, N.J., as part of the company's expansion of FS Solutions locations and service offerings. The ninth rental and service center stocks high-performance parts and accessories for Federal Signal's Guzzler brand of vacuum trucks, Vactor vacuum excavators and Ietstream waterblasters.

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HAMMERHEAD HIRES COMMUNICATIONS FIRM

HammerHead Trenchless Equipment named business-to-business public relations firm Ellenbecker Communications its agency of record for all product lines. Ellenbecker will assist HammerHead's marketing department with new product launches, press events, site and application stories for the trade press, and other projects.

HONDA POWER EQUIPMENT RECEIVES INDUSTRY AWARD

The Honda EB10000 industrial series portable generator received the 2012 Innovative Product Award from Rental Equipment Register magazine. The award recognizes excellence in new product development in the equipment rental industry.





Tony Briggs

VERMEER NAMES LEADERSHIP TEAM

Vermeer named Jason Andringa president, forage and environmental solutions, and Doug Hundt president, underground and specialty excavation solutions. Andringa and Hundt will co-chair the executive team. Tony Briggs was named vice president, sales and distribution.

PEERLESS ELECTRONICS ADDS CARLING PRODUCT LINE

Peerless Electronics will distribute the complete line of Carling Technologies products, including lighted and unlighted rocker switches, toggle switches, mini and sub mini, rotary and push-button switches, as well as magnetic and resettable thermal circuit breakers.

TRIWATER HOLDINGS INVESTS IN LMK TECHNOLOGIES, PERMA-LINER

Triwater Holdings, a Chicago-based water treatment and infrastructure company backed by Bolder Capital, completed growth capital investments in trenchless rehabilitation companies LMK Technologies and Perma-Liner Industries.

XYLEM EXPANDS DEWATERING PUMP RENTALS ACROSS EUROPE

Xylem is expanding its dewatering pump rentals across Europe for the construction, municipal, mining and industrial sectors. A rental branch roll-out is scheduled over the coming years, including refurbishment of existing premises, new locations and selective acquisitions.

USB-SEWER EQUIPMENT NAMES SALES MANAGER

USB-Sewer Equipment Corp. named Leighton White sales manager for the West Coast. He has 23 years of sales, marketing and management experience within the sewer industry. White will be responsible for sales, service and customer support in California. C



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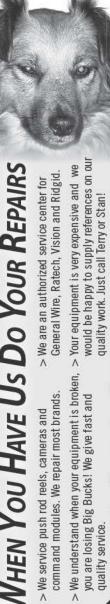
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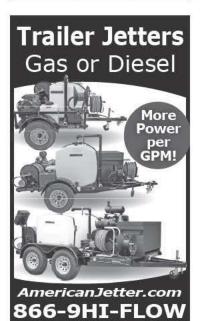
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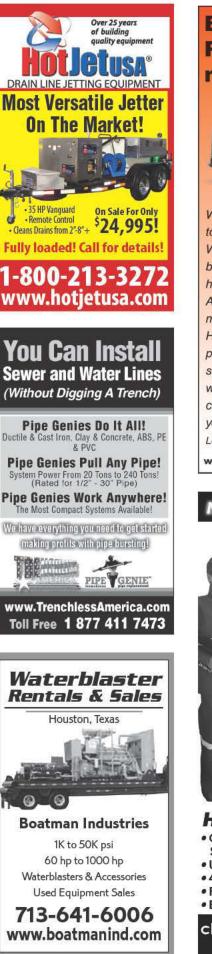
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FreeServiceReminderSoftware.com, FreeServiceDispatchSoftware.com, FreeRouteManagementSoftware.com. (CT05)

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General Wire models J-3055, J-3080, and J-2000; Spartan #717; Electric Eel gas jetters. The Cable Center: 800-257-7209. (CBM)

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1995 International 4900 with a 2,300 U.S. gallon Presvac, carbon steel, DOT certified 412, vacuum pressure tank. (Stock #6004C) www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648). (CBM)



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Presvac 2,300 U.S. gallon, carbon steel with a Masport H15W vacuum pump installed on a 1993 GMC Kodiak cab and chassis. (Stock #6615V) www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648). (CBM)

New 3,200 U.S. gallon, carbon steel, DOT certified 407/412 vacuum tank; dump type with full open rear door and a Presvac PVB-750 vacuum-pressure pump installed on a 2012 Peterbilt, 348 cab and chassis. (Stock #13526V) www.VacuumSalesInc. com, (888) VAC-UNIT (822-8648). (CBM)

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Sewer Jetter, trailer mounted, 4-cylinder diesel continental motor, John Bean 600 pump, 35 gallon/minute@1,800 psi. Call/text Tom 215-767-6752. \$15,000/OBO. Email for photos at instantresponseplumbing@yahoo.com. MAKE AN OFFER TODAY! (C05)

O'Brien trailer jet unit: White with 300-gallon tank, approximately 500' of 3/4" hose and 200' of 1/2" hose, approximately 1,500-2,000 psi at 20-30 gpm. Mod. #SKJ-4A, runs great! Call Don at 616-291-4226. \$5,000. (C05)



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1990 Ford diesel L8000: 44,341 miles, enclosed front driven hydraulic system replaced, SRECO 2,000 psi. Has traffic arrow safety lights, interior like new, includes all hoses & equipment. Can email pictures. \$12,500/ OBO. 650-333-3304. (C05)

2006 GMC TC6500 cab and chassis with Pipe Hunter trunk mounted jetting unit, 3,000 psi @ 50 gpm with a 1,000-gallon water tank, rear mounted hose reel with Jet Eye Camera System, **6,800 original miles, like new. \$95,000 sale price.** (Stock #13234V) www.VacuumSalesInc.com, (888) VAC-UNIT (822-8648). (CBM)

Peabody Myers: 1987 Ford F-800 diesel jetter truck, 56,000 actual miles, 1,500-gallon, 36 gpm @ 3,000 psi, new tires, arrow board, extras. \$9,000 or best reasonable offer, retiring, clean title, pipes to 24 inches, photos available. Buddy, 951-227-5623. (C06)

1989 Ford with Carnel water jet, 1,500gallon stainless steel water tank, Myers 80 gpm, 2,000 psi water pump. Truck and jet in good working condition. \$12,500. Pictures at www.empireequip.com. Call Greg, 714-639-8352. (CPBM)

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1991 Vactor, 3,600 CFM PD blower. Newly rebuilt water pump. 12-yd debris tank. Municipal trade. Very clean and well maintained. Asking \$24,500. Call Dave @ 800-381-9134 WI. (C06)

JET VACS



2002 Vactor 2100: 12-yard debris body, 1,500-gallon water capacity, dual fan, 80 gpm @ 2,500 psi, 53,00 original miles, 2,100 original hours, winter recirculation, hydroexcavation package, 8" extendable rotating boom, 600' of 1" hose, 2002 Freightliner FL80 6x4 with CAT engine, automatic transmission. rodder pump, cyclone separator, 1" hose, Roteck bearing, and dual fan have all been replaced at the dealership in the last 250 hours.\$129,000/OBO Call 717-629-1780



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JET VACS



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(2) New Sutorbilt PD blower, model GAFMBPA catalog no., 6 mp. \$2,500/each or \$4,500 for both. 714-639-8352. Pictures at www.empire equip.com. (CPBM)

PUMPS

Honda model WP40X, 8 hp, 4" with hoses. Honda 4 hp, 2" pump with hoses. The Cable Center: 800-257-7209. (CBM)

Buy & Sell all makes and models, new & used vacuum pumps & high pressure water pumps, and good used replacement parts. Call for an inventory sheet and save. www. VacuumSalesinc.com, (888) VAC-UNIT (822-8648). (CBM)

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Dynamic Repairs - Inspection Camera Repairs: 48 hour turn-around time. General Wire, Ratech, RIDGID, Electric Eel Mfg, Gator Cams, Insight Vision, Vision Intruders. Quality service on all brands. Rental equipment available. For more info call Jack at 973-478-0893. Lodi, New Jersey. (CMPBM)

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www.servicewithasmile.com Sewer Cam Reel and Camera Repair: Authorized for General Wire, Ratech, Vision & RIDGID. Quality service on all brands. Need more info? Just call Terry or Stan. Electronic Repair Co., Birmingham, AL 35206. 205-836-0454; email: part@servicewithasmile.com. (CBM)

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Ritchie Yellow Jacket Recovery System & BULLET 7 cfm pump. The Cable Center: 800-257-7209. (CBM)

Bosch Brute hammer drill with cart irons. The Cable Center: 800-257-7209. (CBM)

TV INSPECTION

Used CUES Crawler Camera System. Call for additional information. The Cable Center: 800-257-7209. (C05)

CUES K2 SYSTEM: Steerable Compact Pipe Ranger (CPR), OZ3 camera, 1000' gold cable, auto cable reel, CPU, CCU, wireless controllers, six different wheel sets, two different wheel spacer sets, tool and manual. Like new (app. 40 hours) at 20% off list. Call 866-936-8476 or emailoffice @envirosight.com.(CBM)

2011 CUES LAMP II LATERAL LAUNCHER CAMERA SYSTEM FOR SALE. All accessories included, operates excellent, well maintained. \$52,000. Call 760-828-5347 CA.

(C05)

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New Cyclops Electronics Valu-Pac IV Standard P&T color camera, heavy duty transporter, all-in-one controller for camera, lights, reel and transporter, 15" LCD monitor, DVD rec/player, keyboard data system with onscreen footage, motorized reel with 500' TV/ tow cable. All for only \$32,700. Call 830-249-9756 and talk to the guys that build 'em. (C05)

TV INSPECTION

2004 Ford E450 Aries inspection camera truck. Equipment is ready to be put to work. The truck was manufactured on 5/4/04: order #60859, system # sys 144, there is over 700' of cable on the unit. There is dual viewing station equipped with WinCAM software and is NASSCO certified. We have two tractors, one is a Badger TR3000 wheel camera transporter tractor, two is a TR2000, the camera head is a illuminator pan tilt camera, model #Pe-2700. The truck also comes with air compressor tools, tool box and various wheel spacers and tracks to change height and width of unit for multiple applications. \$89,000. I have a ton of pictures I can email you. 203-494-6525, CT. (CP05)

FOR SALE: 2011 SPX Pearpoint P340 Flexiprobe, pushrod inspection system, super-flexible Plumbers system, One-touch recording to USB memory sicks and compact flash cards. Outstanding picture quality, interchangeable heads 1" and 2". Contact Aidan Kelly Plumbing Systems Incorporated, 970-376-8322. (C05)



Pearpoint Mainline Inspection System: 400 ft. push camera.\$15,000 Call Shawn 717-587-1927 PA COS

Used and rebuilt camera kits in stock: RIDGID Mini Compact, Mini Color, Standard Self-Leveling, General Gen-Eye I, II and III, Aries Seeker, and SRECO kits. The Cable Center: 800-257-7209. (CBM)



CCTV Aries 2007 Freightliner: Diesel pipeline inspection step-van with brand new command center, never been used, fully loaded sewer TV system in 18' step-van. Portable pathfinder, pan and tilt, Badger, LETS lateral launcher, pole camera, thermal image camera, DVD/ VCR, PipeTech software, compressor, restroom, sink, generator, winch, plus much more! Finance\$250,000/OBO CALL 925-784-2837

TV INSPECTION

1998 CUES Mainline TV System: GMC Savanna 3500, CUES with Pro-Data on-screen titler, Honda generator, Sony combo DVD/ VHS, 1,700' of M/C cable, pan & tilt camera with shorty transporter. \$29,500. 608-835-7767, WI. (CBM)

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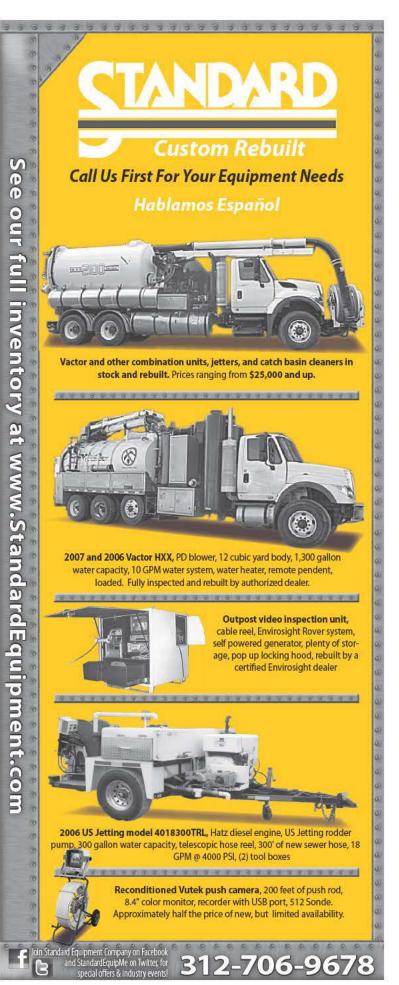
Gardner Denver T-375M: Bare Shaft pump. Gardner Denver T450M Bare Shaft pump NLB 20-200: 12 gpm @ 20,000 psi. Gardner Denver LC-1500: 390 gpm max, 15,000 psi max. NLB 36-200 6 gpm @ 36,000 psi. HT-150S 25 gpm max 10,000 psi max, Shell Side Machine, Wheatley 165: 30 gpm @ 10,000 psi, Wheatley 165: 17 gpm @ 20,000 psi. Wheatley 125 with aluminum bronze fluid end. Boatman Ind. 713-641-6006. View @ www.boatmanind.com. (CPBM)

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