Fulfilling A

Indianapolis plumber grows operation from home garage into a large facility and takes on more services to become a valuable resource for customers **Page 12**

> On The Road LASER LEVELS KEEP PLUMBER'S INSTALLS LOOKING PROFESSIONAL Page 20

In The Shop DRUM MACHINES VS. SECTIONAL MACHINES, WHICH ARE BETTER FOR YOU? Page 32



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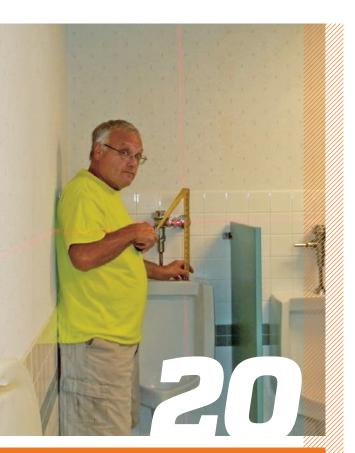
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Getting Even

Laser level keeps Pennsylvania plumber headed straight for professional-looking installs, as well as amped-up productivity. - **By Ken Wysocky**



On the Cover

John LeFeber, a licensed plumber with L.D. Smith Plumbing of Indianapolis, checks a toilet tank during a repair. L.D. Smith Plumbing, started by Lance Smith in 2011 in his garage, has grown to include drain cleaning and trenchless sewer repair and is now located in an 11,000-square-foot building. **Photography by Marc Lebryk**

Coming Next Month -Pumps, Controls & Alarms

- Plumber Profile: R.I.C. Plumbing (Lockport, New York)
- 🖌 Industry Insider: Anja Smith

8 From the Editor: **Risky Business**

There are ways you can relieve some of the risk associated with starting a new business. - By Cory Dellenbach

10 aplumbermag.com

Check out our exclusive online content.

12 Profile: Fulfilling a Vision

Indianapolis plumber grows operation from home garage into a large facility and takes on more services to become a valuable resource for customers. - By Cory Dellenbach

22 Smart Business:

A Million Dollars Won't Necessarily Ensure Your 'Golden Years'

When planning for retirement, first tally your projected monthly expenses and then work toward a realistic nest egg. - By Erik Gunn

26 Jetter & Cable Machine Directory

32 In the Shop: The Best Machine for the Job

Despite industry trend toward drum machines, there's still a place for sectionals. - By Jared Raney

36 Industry Insider:

Apprenticeships vs. Google

Unlike search engines, apprenticeships bring education and real-world working experience to plumbers. - By Randy Lorge

38 Product Focus:

Drain Cleaning

- By Craig Mandli



- By Craig Mandli

48 Product News: Product Spotlight: A push camera in high definition

- By Craig Mandli



Industry News



Calendar



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ADVERTISER INDEX

ALLAN J. COLEMAN

Allan J. Coleman Co	
American Jetter57	
Bionetix International	
Brasscraft Mfg. Co 47	



Cam Spray	45
CENTRAL OKLAHOMA	

Winnelson

Central Oklahoma Winnelson . . 37, 51



Duracable Manufacturing Co23				
Easy-Kleen Pressure Systems Ltd57				
Electric Eel Mfg53				
Enz USA Inc51				
FastEST, Inc57				

Fluidmaster.



General Pipe Cleaners/ General Wire Spring	.2
HammerHead Trenchless	35
Hot Jet USA	58
ІАРМО	17
John Guest USA	13
Lowe's Companies, Inc	33
MAXLINER	

MaxLiner USA	 •••	 25	
Meaty-Delivery	 	 	



PERMA-DINER^{*} INDUSTRIES, LLC

Perma-Liner Industries, LLC 60



PPELINING SUPPLY

Pipe Lining Supply 5	9
Pulsar 2000, Inc	5

RUGID

RUGID		• •	•	•		. 55
ServiceMaster Restore .	• •		•		•	11

SPARTAN

Spartan Tool	5
Superior Signal Company LLC5	7
Texas Truck Racks 4	2
breaking tradition."	

TRIC Tools, Inc
UltraSHORE PRODUCTS
Ultra Shore 29



Water Cannon, Inc MWBE7					
Western Drain Supply53					
WWETT Show 46					

Classifieds54

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FROM THE EDITOR



Cory Dellenbach

Risky Business

There are ways you can relieve some of the risk associated with starting a new business

here is risk in everything you do. Risks come in starting a new job, starting your own company, and hiring employees, just to name a few.

Lance Smith, owner of L.D. Smith Plumbing in Indianapolis, faced plenty of risk as he left his job as a plumber and set off to start his own business in 2011. Larger firms were buying small plumbing shops and Smith didn't like what he was seeing. He wanted to be a change for the industry.

When starting from scratch, you are bound to make mistakes. Tons of mistakes. But a mistake is only bad if you can't learn from it.

Risking everything he owned, Smith turned his garage into a base of operations and quickly grew his business to where it is now — in an 11,000-square-foot building with eight service trucks and one excavation crew.

As you'll read in this issue, it took some hard work and determination to get Smith to where he is now. It was a big risk to put everything he owned on the line without knowing what was going to happen.

One thing though I've heard from many business owners that we've interviewed over the years is: "If you aren't prepared to take risks, you have no business being an entrepreneur."

It might be true, but there are also ways you can minimize some of the risks you are taking.

Research

Do as much research as you can. You can never be overinformed on what is going on in your industry. Talk to other business owners in the industry and find out what struggles they had when they started, or talk to plumbers and learn what they would like in a company.

Listen

The feedback you get early on from customers and other individuals in the industry can be some of the most valuable information you can collect. Taking what they say and turning it into a positive outcome or finding a solution to their questions can help you identify holes in your plan.

Maximize your resources

Whether it's capital that you need to purchase trucks and other equipment or space in your office or location, keeping a tight handle on your resources is important. Plan what you need, then develop a strategy to help you along the way.

Don't be afraid to make mistakes

When starting from scratch, you are bound to make mistakes. Tons of mistakes. But a mistake is only bad if you can't learn from it. Put a Band-Aid over every cut and scrape, and keep on pushing toward your goal.

WHAT HAVE YOU LEARNED?

What advice would you pass on to others about starting their own plumbing business? What have you learned along the way? Email me at editor@plumbermag.com or call 800-257-7222. I would love to hear your story.

Enjoy this issue!

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CLEANING PIPES

Grow Your Jetting Knowledge

In a four-part series on PlumberMag.com, we've been providing an overview on waterjetting for any plumbers who don't currently offer it as a service but are perhaps interested in getting into it in the future. The final two articles in this series cover operating tips and how to select a nozzle. / plumbermag.com/featured

PERSONNEL PRO TIPS

How to Handle a **Good Employee** Ouitting

You want to retain your best employees, not see them leave. Unfortunately, it's something that can



happen, so it's worth considering how you would respond to such a situation. In this online exclusive, regular contributor Anja Smith provides some tips on what you should do. 🖌 plumbermag.com/featured

OVERHEARD ONLINE

"A price book is actually helping our plumbers focus on their primary job, not distract from it. They don't have to worry about the 'business end' or calculate invoices on their own. I had it all backward."

- Confessions of a Flat-Rate Pricing Convert



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RECRUITMENT

Contractor Makes Workforce Development a Priority Patrick Wallner and his family's business, Wallner Plumbing Heating and Air Conditioning of Redding, California, were featured in the July issue. Like many in the plumbing industry, employee recruitment efforts haven't always been easy for the company. In this online exclusive, read more about Wallner's thoughts on workforce development and how he's using his longtime involvement with the Plumbing Heating Cooling Contractors

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Plumber **Profile**

Lance Smith, owner of L.D. Smith Plumbing, stands in his company's shop near downtown Indianapolis.

Fulfilling A

Indianapolis plumber grows operation from home garage into a large facility and takes on more services to become a valuable resource for customers

By Cory Dellenbach | Photography by Marc Lebryk

L.D. Smith Plumbing, Indianapolis

OWNER	Lance Smith	
FOUNDED	2011	
EMPLOYEES	12	
SERVICES	Fixture repairs, installations, water heater and sump pump installations, drain cleaning, trenchless repairs, and excavation	
SERVICE AREA	Greater metro area of Indianapolis	
WEBSITE	www.ldsmithplumbing.com	2

12 Plumber



Plumber Mark Lambert cleans out a sink drainpipe with a Spartan Tool 100 machine with a 5/16-inch 75-foot long cable. The Spartan 100 machines are equipped on every service truck. hen Lance Smith started his plumbing company in 2011, he never expected it to grow as fast as it has in such a short amount of time.

A year after starting in his garage, the Indianapolis-based plumber found himself moving his company, L.D. Smith Plumbing, into a 3,000-square-foot building. He rented that facility until May 2017 when he had to upsize again. That's when he bought an 11,000-square-foot building near downtown Indianapolis.

"And we're still growing," Smith says. "We're looking to be about 20 percent above last year, and we have some room to build out if we need to at this spot. I love this space."

The company, with its 12 employees, offers services from the typical plumbing work of fixture repairs and installations to drain cleaning services and trenchless sewer repair.

MAKING A CHANGE

Smith wasn't a newcomer to the plumbing industry when he started his company. He worked in the business for 10 years, starting as an apprentice at 23 years old. He began by working on the new construction side of plumbing, but transitioned into service. I decided to strike out on my own out of the garage at my house. It was scary." Lance Smith

While working for other firms, Smith saw changes in the industry that he wasn't happy about. "A lot of national HVAC companies were coming in and purchasing good mom and pop shops in the late 1990s and early 2000s and either ran them into the ground or just made them not a very good place to work," he says.

Smith decided it was time to venture out on his own and create something to fill the void in the market.

"I tried to find a small plumbing company to buy, but I couldn't find one and didn't have a lot of money at the time," Smith says. "I decided to strike out on my own out of the garage at my house. It was scary. I didn't have deep pockets and banks don't lend you money if you don't have a lot of money."



Plumber Profile

Plumber John LeFeber sets up a job site for working on a toilet repair.

11 It shows that I actually care, that I'm involved and not just sitting up in some cushy office chair watching the dollars roll in. I care about what goes on." *Lance Smith*

Smith had a vision and went all in, knowing that if it didn't work out, he would've lost almost everything. "Six years later, we're in a building and have a great staff," he says.

PLUMBING IS PRIMARY

L.D. Smith Plumbing is a full residential service contractor covering everything from drain cleaning, fixtures, water heaters and sump pumps. Residential, including drain cleaning, makes up about 70 percent of the business. The company also handles some light commercial work as well.

"It's a very competitive market here," Smith says. "We offer a personal touch that many of our competitors don't."

The company has eight service vehicles, all Chevy 2500 vans, which are stocked with about \$5,000 in parts. Plumbers

carry basic hands tools ranging from Channellock pliers to RIDGID pipe cutting tools, wrenches, drills and reciprocating saws from Milwaukee Tool. The vans are also equipped with Spartan Tool 100 drain machines.

"They are good trucks," Smith says. "They aren't as big as those trucks that companies have to carry water heaters and toilets, but we stock all that in our shop and have a delivery person available to bring those items as needed."

Smith says the trucks are much easier to maneuver in a busy metropolitan area like downtown Indianapolis.

GOING DIGGING

The other 30 percent of operations for L.D. Smith Plumbing comes in excavation and trenchless repair work.

"Excavation is anything from putting in clean-outs to total line replacements," Smith says. "We do trenchless sewer repair and replacement; we do water service repair and replacement. The excavation side has become a larger and larger part of my business."

It wasn't until about three years ago that Smith really got into the digging and trenchless repair work. "I didn't Lance Smith operates a 2016 Bobcat E35i mini-excavator. The company added excavation services between two and three years ago as a way to become a one-stop shop for its customers.

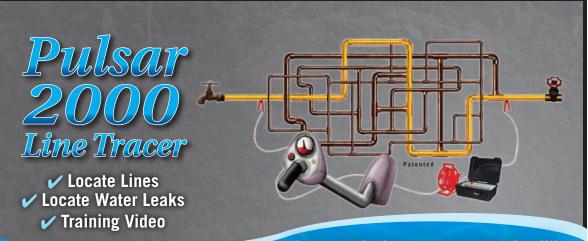
have the space or money to add it right away," Smith says. "It's a big investment to make that leap."

That investment included purchasing equipment like a Bobcat E35i, being pulled by a Ford F350 with custom-built pipe racks and bins and a TRIC Tools V26 pipe bursting setup.

"I've just always liked to play in the dirt. I love all of plumbing, but I've always liked that aspect of it. I can't explain it. There's certainly a need for it, and I've always liked excavation and drainlines and sewer lines. And I've always enjoyed that type of work," Smith says.

Smith has found that offering the trenchless repair methods has made working in tighter spaces, like downtown Indianapolis, easier. The company uses its pipe bursting equipment on a section of sewer line that needs to be replaced in areas that are





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inaccessible by an excavator and typically require moving a structure just to access the line.

"One repair involved us replacing a line under a newer garage and another one involved us replacing a line between two houses where we couldn't get any excavation equipment in," Smith says. "We are one of only a few contractors who could provide a long-term solution to those difficult problems."

Adding trenchless services to the company's offerings has allowed L.D. Smith Plumbing to be a one-stop shop for customers. "It has just given us more solutions to offer to the homeowner," Smith says. "It's less destructive and helps us diversify and expand to truly become a fullservice contractor."

The company also uses three complete RIDGID camera systems with V10 monitors, three Spartan 2001

machines, reels and locators.

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"There are times when homeowners have to make a very expensive repair to a sewer line and we're able to do trenchless and save them a lot of money," Smith says. "We have videos to show homeowners what we're going to do and how it's done. They can watch them online, and our technicians carry videos of us doing trenchless work too."

IN THE FIELD

There's one thing that Smith says makes his company stick out amongst many of the competitors: He works along with his crews.

"For a company this size, you seldom see owners still actively involved in the field, which I am," Smith says. "I wear a uniform just like any other guy. I don't have dress pants and a collared shirt on, except if I have meetings.

> Providing Quality Plumbing Service At a Fair Price

The team at L.D. Smith Plumbing stand outside of its shop in Indianapolis. Team members include (from left to right) Shawn Corey, licensed plumber and licensed well technician; Joe Garza, plumbing technician; Sophie Smith (boxer mix), leak sniffer; Lance Smith, owner and licensed plumber; Mark Lambert, licensed plumber; Jennifer Hunerkoch, office manager/customer service representative; T.J. Dowell, plumbing technician; Phil Schumacher, plumbing technician; Crystal Snow, customer service representa-

Looking for the right attitude

Lance Smith knows a big part of his Indianapolis-based plumbing company's success is thanks to his employees, and he knows what he wants when he needs to hire.

"We have a variety of different plumbing backgrounds," says Smith, owner of L.D. Smith Plumbing. "There's seldom a time where we can't put our heads together and figure out a problem. We have a great well technician, a guy with an excavation background and two guys with new work backgrounds. If there is something one of us gets stuck on, we communicate very well. This is a team-first environment."

With the company growing as fast as it has been the last few years, Smith says it's important to have quality employees and an open line of communication. "It's their hard work that got us here, too, and allowed us to grow. Letting them know we're in growth mode right now helps," Smith says. "We make sure to keep open lines of communication when we're sharing our goals."

tive; John LeFeber, licensed plumber; Tim Garza, warehouse and excavation; and Kevin Hagensieker, plumbing technician.

While it's tempting to hire staff based solely on work experience, it's a strategy that isn't always successful, Smith says. He admits it's a little bit of luck and seeing the real person when it comes to hiring.

"I find attitude and character are more important than anything else," Smith says. "I can teach plumbing. I can't teach work ethic and character. I have had some success with guys who are inexperienced with a solid character and good work history who want to get into the field."



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I ve just always liked to play in the dirt.
I love all of plumbing, but I've always liked that aspect of it."
Lance Smith

Even when we're really busy, I'm a helper on the jobs, if needed."

He says it helps him keep in touch with the needs of the customers and plumbers, allowing him and his crews to be more responsive to their needs and concerns.

"Sometimes people tell me not to go out and work in the field, but to concentrate on running the business," Smith says. "Why change something when it's working? It shows that I actually care, that I'm involved and not just sitting up in some cushy office chair watching the dollars roll in. I care about what goes on."

MORE GROWTH AHEAD

Even being in the field, Smith can see that his company has the potential to keep growing.

"Within the next five years, my target goal is 15 service vans and two complete excavation crews," he says. "I'd also like to continue adding benefits to make the company a better place to work than it already is, to attract top talent to a place where everybody wants to work until they retire."



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PLUMBING

n the **ROAD**

Laser level keeps Pennsylvania plumber headed straight for professional-looking installs, as well as amped-up productivity *By Ken Wysocky*

s the sole proprietor of Kidd Plumbing in Allentown, Pennsylvania, Mark Kidd is used to working alone. Nonetheless, he always has an extra set of hands around to help when he's hanging pipes and related tasks, courtesy of a Spectra Precision/Trimble 5.2XL five-point cross-line laser.

Kidd bought the automatic self-leveling, multipurpose unit about three years ago, and over time, it's been an invaluable investment — almost like having an employee (but minus the salary and benefits). "It really speeds things up, and like they say, time is money," says Kidd, 61, a master plumber who's been in the trade ever since he graduated from high school in 1973. Primarily doing residential service and repair work, supplemented by new construction and remodeling work, Kidd works in about a 35-mile radius around Allentown, about 65 miles north of Philadelphia. He drives a 2001 Chevrolet Express van with a utility body made by Supreme and carries about \$5,000-worth of repair-parts inventory.

Kidd used to do mostly residential and commercial installations and, as such, was no stranger to laser levels. Along with the Precision 5.2XL (now known as the LT52), he also owns three other units: a DeWalt ILMXT (for horizontal and vertical leveling), a Bosch GLL3, and a Spectra Precision LT58 (which can project accurate 90-degree angles). But the Spectra Precision 5.2XL remains a go-to tool, he says.



 Mark Kidd, owner of the Kidd Plumbing in Allentown, Pennsylvania, uses a Spectra Precision 5.2XL laser level during the installation of plumbing fixtures. (Photo courtesy of Kidd Plumbing)



It really speeds things up because you don't have to stop and keep measuring off the wall. Even if it saves five minutes per hanger, it adds up in a hurry." Mark Kidd

For those who aren't familiar with how laser levels can improve productivity, Kidd offers an example of installing clevis hangers in a ceiling in a 30-by-30-foot room, 8 feet from a wall. Without a laser level, he'd have to measure 8 feet from the wall, make a mark on the floor, get on a ladder, drop a plumb bob over the floor mark, put a mark on the ceiling, and then install a hanger. Then repeat. And repeat. And repeat at whatever (interval) spread the local building code requires for hangers, he says.

The laser level simplifies this task significantly. All Kidd has to do is make a mark on the floor 8 feet from the wall, one at each end of the room. Then he puts the unit on the floor under the spot where the first hanger needs to go, turns on the unit and makes sure the red horizontal laser beam lines up with the two dots. Then he turns on a vertical laser beam; where it hits the ceiling marks the spot for the hanger. Then he keeps moving the unit down the line at the required hanger spreads until they're all installed.

"It really speeds things up because you don't have to stop and keep measuring off the wall," he notes. "Even if it saves five minutes per hanger, it adds up in a hurry. And the pipe is as straight (relative to the wall) as can be."

In another mode, the unit also can ensure that the same pipe hangs level. Using the two initial floor marks as described above, Kidd mounts the laser unit on a tripod about halfway between them. Then he turns on a 360-degree function that emits a laser beam along the floor (where it should connect the two marks), the walls, and along the ceiling. The ceiling line can be adjusted to whatever distance below it the pipe needs to hang — think of it as a high-tech chalk line, hovering in midair.

After that, Kidd raises or lowers the adjustable clevis hangers as needed so they touch the laser beam. "It makes the job so easy because you don't have to constantly stop to measure off the floor or the ceiling, either of which might not be level in the first place," he says. "It saves so much



Mark Kidd, owner of the Kidd Plumbing in Allentown, Pennsylvania, uses a Spectra Precision 5.2XL laser level during the installation of plumbing fixtures.

time. And I can make every hanger perfect, and the pipe will be dead level all the way across."

The Spectra Precision LT52 (the newest version of a Spectra Precision 5.2XL) retails for a little more than \$300. It features automatic self-leveling (the beam flashes if it gets knocked out of level); is water-, mud- and shock-resistant; can withstand a drop of 3 feet onto concrete, thanks to a protective rubber overmolding; offers a working range of 100 feet; runs on four AA batteries; weighs 1 1/2 pounds; and measures 5.7 by 3 by 5.9 inches. It comes with a three-year warranty.

As for the value, Kidd says he rarely uses a conventional level anymore because the laser levels are so much more accurate. "When you're visually trying to get the bubble between the two lines on a standard level, you might be just a little off," he points out. "But over 10 or 15 feet or more, that little difference gets much bigger."

In addition, Kidd says there's added benefits from doing work that looks neat, level and ultraprofessional. Years ago, most building inspectors were plumbers, with considerable knowledge compiled through years of experience. "Now they're mostly third-party inspectors who don't necessarily understand plumbing like a plumber does," he explains. "So if they come in and a job doesn't look neat and professional, they might start to question things — even if everything is up to code.

"But if a job looks nice and neat, they figure they're dealing with a guy who's proud of his work and knows what he's doing," he concludes.





Erik Gunn

A Million Dollars Won't Necessarily Ensure Your 'Golden Years'

When planning for retirement, first tally your projected monthly expenses and then work toward a realistic nest egg **By Erik Gunn**

w much does it take to retire? Conventional wisdom once suggested if you could put aside a million dollars, you'd be set for life when you were ready to kick back.

That's a faulty assumption, says financial advisor David Sandstrom. First, a million dollars isn't what it used to be. But more to the point, as a rule-of-thumb target, it's simplistic and could lead you astray.

Sandstrom is a vice president and general securities representative at Landaas and Co., a Milwaukee-based investment advisory and planning firm.

Of course, this column can never substitute for a conversation with your own financial advisor, who can bring an understanding to your personal circumstances. What follows are general suggestions — not investment or financial management advice.

THE INFLATION FACTOR

The first flaw in the million-dollar theory is that "over time, inflation has eroded that million dollars to something that is probably not going to be a major windfall for everybody," Sandstrom says.

Your nest egg should be large enough that you'll never need to tap into it. "We usually look at a rule of thumb that says, 'I don't touch the nest egg, and I live off what the nest egg can produce,'" Sandstrom explains.

And that, too, needs to be more than you might think. You really should live off only part of the annual earnings, and plow the rest back into savings.

Here's why: With a balanced portfolio — say 50 to 60 percent stocks and the remaining 40 to 50 percent in bonds — historical averages suggest you'll see an annual return of about 7 to 8 percent.

Now, consider that inflation has been about 3 percent a year for a long time now — sometimes a little less, sometimes

a little more. To keep pace, the dollar value of your annual payout actually needs to go up every year. For that to happen, the base savings needs to keep growing, too.

"If you're going to leave something in there for inflation every year, so that you can give yourself a little raise, that would probably leave about 4 to 5 percent for you to spend," Sandstrom says, not the full 7 or 8 percent. "If you spend all of the return, you're stuck with that million bucks the rest of your life. You're not going to keep up with inflation."

Sure, you'll get \$70,000 to \$80,000 a year in income — but in 20 years, that won't buy you as much as it does now. So if you're starting with \$1 million and hold back part of your earnings to build your savings up, you'll only be able to take out about \$40,000 to \$50,000 to live on in that first year.

Only you can decide if that will pay your expenses comfortably. But unless that's what you're already living on, chances are the answer is no.

A NEW APPROACH

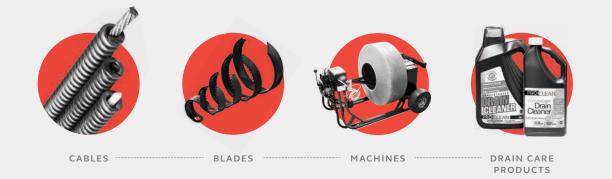
Besides the impact of inflation, some costs will rise considerably once you're retired. Yes, some expenses may go down. Perhaps you've paid off a mortgage, you're driving to work less, or maybe even trimming your clothing budget. But other costs will go up, Sandstrom warns. No. 1 is health care: "Health care costs are becoming a very significant hurdle for people retiring, especially if they retire prior to going on Medicare." (So much for taking early retirement at 55, 60 or 62.)

Another culprit: Your savings — that nest egg — carries a lot more of the burden of supporting you in retirement. Traditional pension plans are vanishing, for one thing. Or, as Sandstrom puts it, your retirement resources "used to be Social Security, a pension, and whatever you've saved.



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Now it's pretty much gotten down to Social Security and what you've saved." And for most people, "Social Security is not an answer for retirement. It's a supplement."

What all this adds up to is a completely different approach to calculating a retirement target rule of thumb. And it's not a one-size-fits-all number.

So how do you set your retirement savings goals?

"We ask clients, 'What's your number? What do you need a month?' It varies so much across the board," Sandstrom says. "I have people who do fine on Social Security alone every year, and I have people who spend all their Social Security every month and draw lots of money out of their portfolio — and they complain about not having enough. It all depends on the individual."

Once you have calculated what you think you'll need to live on per month, plan "well in advance with those numbers in mind," Sandstrom says. Ideally, you'll want to save enough so that skimming a little more than half of the earnings off every year — that 4 to 5 percent — will provide you with enough income.

WHERE TO STASH IT

When you're ready to tap into it, where should you put that savings? That question is complicated by the historic low interest rates over the last decade or more — great for borrowers, but not for savers. That's pretty much undermined a longtime traditional retirement savings parking place the bank certificate of deposit.

"Thirty years ago, CDs were double digits, and it was pretty easy to have a really safe portfolio that paid you a really nice return," Sandstrom says. Today, "The safer stuff that you'd like to own in retirement doesn't pay you anything," which "puts a little bit more pressure on what that number is for your nest egg."

Maybe simple, safe, high-interest savings instruments will come back someday, but don't expect them any time soon. So the nest egg needs to be big enough to allow for some higher-risk, higher-return investments that can deliver a potential windfall. But if those collapse, you don't want them to undercut your long-term plan.

Sandstrom suggests maintaining a broad portfolio balanced between a level of risk you can tolerate and a level of security you can maintain over time. Make sure some of your investments are in "something you're just drop-dead positive" will provide steady earnings at low risk — highquality bonds, for instance. **Thirty years ago, CDs were double digits, and it was pretty easy to have a really safe portfolio that paid you a really nice return. (Today) the safer stuff that you'd like to own in retirement doesn't pay you anything."

David Sandstrom

Then, if the riskier part of your savings hits a rough patch, you can afford to leave it alone until it recovers and tap into the safer side of the portfolio. "Just don't spend assets that have just been discounted."

THE BOTTOM LINE

To sum up: Forget about a \$1 million target. "It's not the million dollars. It's having a plan," Sandstrom points out, one that will let you draw on your savings that amount you'll need each year for the rest of your life. "Get a good handle on what you think your retirement needs are going to be, then figure out, 'Can I get there?"

Consider it a road map that will lead you to that retirement lifestyle you've been dreaming of. Then see what you can do to make the trip as smooth as possible.

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





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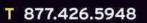
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www.easykleen.com • sales@easykleen.com See ad on page 57	EZO5005G (High Pressure & Jetting Combo)	8"	5000	5	25 HP Kohler Gasoline Engine
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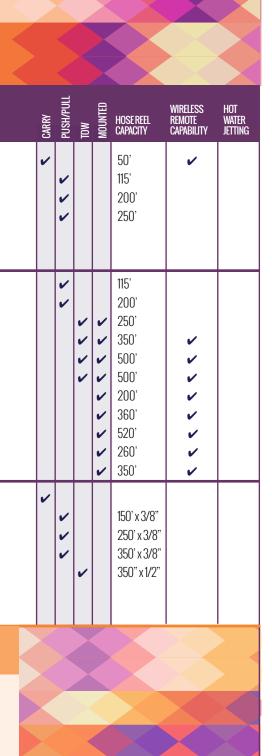
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The Best Machine for the Job

Despite industry trend toward drum machines, there's still a place for sectionals **By Jared Raney**

drain cleaning machine is the most essential asset a cleaner possesses, but it also brings with it one of the most polarizing issues in the industry: drum versus sectional.

"As you talk to contractors, you'll find they're very committed to a style. They don't want to change," says Marty Silverman, vice president of marketing for General Pipe Cleaners/General Wire Spring. "Oftentimes trying to convince someone to change is like trying to change someone's religion."

But when you look at the benefits of each piece of equipment, each has benefits depending on the situation.

While sectional machines are lighter and offer stronger performance on long runs, drum machines are simple and versatile packages.

"There are advantages of each, so I see why some people like one style and some people like another," Silverman says. General Pipe Cleaners offers both drum and sectional machines. "It's just a different way of clearing the lines. Both do a good job of clearing the line; each has advantages on what it'll do."

JOB TYPE

Silverman says he would ask someone what types of jobs they plan to do before recommending which machine they should use. "Both machines can handle roots and heavy stoppages. Both are very good at that," he says. "It really comes down to the length of the line that has to be cleared. A sectional does a much better job on particular applications, especially long runs."

Drum cables are enclosed and must be pushed through the line, while sectional cables are open-coil springs — the coil acts almost like a screw, actually pulling the cable forward on its own.

Most drum-style machines have the option for an automatic feeding system, but even that isn't a silver bullet.

"You're going to get yourself in trouble if you don't realize

** There are advantages of each, so I see why some people like one style and some people like another. It's just a different way of clearing the lines. Both do a good job of clearing the line; each has advantages on what it'll do."
Marty Silverman

you can only feed the cable forward as fast as it's moving through the line. If you push it in too fast, it'll tangle up," Silverman says. "Even with automatic-feed drum machines, there's a certain learning curve to make sure you do it right."

JOB CONSTRAINTS

A job is as much about where the drain is located as it is about what's in the line. While sectional machines work fine outdoors and in applications where space isn't an issue, drum machines take the edge in tight spots where even 4or 8-foot cable segments are difficult.

"We like the drum machines versus the sectionals. I've used them both. They both work well, but I prefer drum because so much of our work, half of our work I'd say, is inside," says Hugh McLaughlin, owner of Quality Drain Service in Tucson, Arizona. "When you're trying to do a sectional machine in somebody's kitchen or right outside their bathroom in the hallway, they tend to be a little bit messier. I think outside they're fine, but when you've got to go inside a house or inside a restaurant, working with the sections is a little more involved.

"The setup is almost instantaneous with a drum machine versus a sectional machine. There's a bit of involved setup to get the sectional in place and start working with it."

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Both machines come in a variety of sizes and models, but even the largest drum machines can be more maneuverable than sectional machines.

"The advantage of drum-type machines is you have everything in one package," Silverman says.

That being said, there are also locations where the allin-one system is a detriment, such as rooftops of multistory buildings. Because sectional machines come to the job site in parts, the machine itself is lighter for lugging up stairs, and breaking the weight up can sometimes be easier.

Drum cables are about a pound a foot, so a hundred-foot drum can be weighty cargo. If you know you only have 20 feet to clean, two 10-foot cable sections are lighter than having to carry the whole drum.

MAINTENANCE

"Cables are made of steel; they go in the water; they're going to rust. So this applies to both — that you want to keep the cables clean and oiled. A light-grade motor oil will do to keep the rust from developing," Silverman says.

General Pipe Cleaners and most other manufacturers carry special rust-inhibiting oil products designed for this application.

"Drum machines have an additional issue that the water will pool at the bottom of the drum, from the cable. So it's even more important to put the oil in the drum and spin the drum a few times to get the whole thing lubricated, to keep the cable from rusting, and to help the drum last longer as well," Silverman notes.

Because they are enclosed along with much of the water and grime from the traps they clean, drum cables can have more issues depending on the use.

"If you're a company that uses it once in a while, maybe once a week or once every couple weeks, yes, you need to stretch the snakes out and loosen them up and oil them. Otherwise they will start to form in their coiled position," McLaughlin says. "Our snakes get used 15 to 20 times every single day, six days a week, so they're really just routine maintenance items."

By that same token, the benefit of drums keeping the mess internal is that they decrease the chances of splattering muck in a customer's home.

REGIONALITY

Preference and benefit can vary by region as well. For example, Florida doesn't have many basements, so accessing roof drains is often necessary.

"It's a lot easier to carry a sectional machine up on the roof than it is a drum-type machine. So there's a lot of popularity in that area," Silverman says. "There are certain parts of the country where sectional started many years ago, and then they kind of got used to that style as their first drain cleaning machine and stick with it, so that's the reason they might have that design."

Often this is also the deciding factor for many contractors: Whatever they were trained on tends to be the equipment they gravitate toward. McLaughlin was an exception, switching to drum machines after learning on sectionals. To a large extent, it comes down to what a particular contractor or operator is comfortable with.

COMFORT

"When I first started working with drum machines, I felt personally it was so much easier to operate, so much easier to manipulate through a house, but I have other friends who are in my industry who have used both, and they're really sold on the sectional machines," McLaughlin says.

"I like the clean efficiency of the drum machines. I just find that when you're unclogging a drain in a customer's home, it can be a messy situation to begin with. I don't think that the drum machine adds to the messes, whereas I think a sectional can contribute to more mess."

On the whole, either machine could probably be used with varying effectiveness in just about any scenario, so it's not just about the job, it's also about the operator.

"It's just a matter of what method you're accustomed to," Silverman says. "Now, we have seen a gradual shift from sectional toward drum-type machines across the industry. Some manufacturers that made nothing but sectional machines years ago now make both styles to address the market.

"If you don't have an allegiance or experience with one style versus another, the industry has shown that people tend to go toward the drum-type machines, as just being more compact. Usually people starting out without a preference will lean toward the drum machines."

CONSIDER YOUR OPTIONS

It's important to take all factors into account when buying a big piece of equipment, including the state of your business.

"If you're just trying to get started on a wing and a prayer, buy whatever you can afford," McLaughlin says. "If you're in it for long term and you have the money, buy once, buy right. Buy the better-quality equipment."

Whether it's residential or commercial, indoor or outdoor, basement or rooftop, the bulk of your cleaning work will determine which machine fits the bill.

"It's asking what kinds of jobs you anticipate doing, before you decide which kind of machine to buy," Silverman says.

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Randy Lorge

Apprenticeships vs. Google

Unlike search engines, apprenticeships bring education and real-world working experience to plumbers **By Randy Lorge**

ccording to Wikipedia, an apprenticeship is a system of training a new generation of practitioners of a trade or profession with on-the-job training and often some accompanying study (classroom work and reading).

According to Merriam-Webster, "Google" is to use a search engine to obtain information about (someone or something) on the World Wide Web.

So that means they are completely different, right? I know how I would answer that question and, for the most part, I'm pretty sure I know how you would answer that question. How would the general public answer that though?

I have this uneasy feeling that if the topic came up in general conversation, the average person would tend to think that an apprenticeship is some sort of gimmick to hire cheap labor. They might even go as far as saying it is some union thing that was developed to protect their work and keep it to themselves.

I mean, why would someone need to work two to five years as an apprentice while being paid a percentage of what a journeyman or master plumber makes? If I need to know something about plumbing, all I need to do is ask Google. Google knows all, right? Not only will Google tell me something about plumbing, it will show me videos on how to do it. And to top it off, the videos are free.

Why would you ever need an apprenticeship to do plumbing, much less worry about becoming a plumber?

The very definition of an apprenticeship gives us an example of what makes an apprenticeship so unique, "a trade or profession with *on-the-job* training."

ON-THE-JOB TRAINING

I truly hope by now you're smiling and possibly even laughing about the last couple of paragraphs and not plotting how you're going to write hate mail to me.

Googling something about plumbing versus serving an apprenticeship are completely different; we all know that. The very definition of an apprenticeship gives us an example of what makes an apprenticeship so unique, "a trade or profession with *on-the-job* training."

In other words, apprenticeships equal experience. Experience equals efficiency. Experience cannot be obtained by Googling it. Think about it for a second. Can serving in a war be Googled? Sure it can. But can you fight a war by Googling it? Extreme? Maybe, but you get the point.

The on-the-job aspect of the apprenticeship is what sustains the trade. The training an apprentice receives from the journeyman or master he or she works with is priceless. Experiences are shared and knowledge is passed on by working side by side. Safety, timesavings, and knowhow are imparted to the apprentice who will someday do the same for his or her apprentices.

SCHOOL TIME

Then of course comes the schooling. It is here that the "how" meets the "why." "The journeyman told you to do it this way because the code says so. Now here's why."

Depending on your state, the number of hours spent in the classroom learning code can vary. Here in Wisconsin, a plumbing apprentice attends 572 hours "paid relatedtraining." You read that right! The apprentice gets paid their hourly wage to attend an eight-hour class every other week studying plumbing code, plumbing principles and theory.

They attend paid related-classes for eight semesters, and then, on their own time, they are required to attend

a minimum of 260 hours of "unpaid related-training" on topics such as blueprint reading, plumbing applications, and OSHA, to name a few. What's even better is that on top of the apprentice being required to be paid per the apprenticeship contract is that many employers will even pay for the classes and books required, provided they attain a B or higher grade-point average. That means the apprentice could very well be debt-free at the end of the apprenticeship and off to earning, on average, \$75,000-85,000 a year after successfully passing the state licensing exam.

FOLLOWING THE SAME PATH

As many trades struggle to attain new workers to fill the gaps that the baby boomers are leaving and expected to leave, other occupations are feeling the same pinch and are turning to apprenticeships, not Google, for help.

According to Wikipedia, the number of American apprentices has increased from 375,000 in 2014 to 500,000 in 2016, while the federal government intends to see 750,000 by 2019, particularly by expanding the apprenticeship model to include white-collar occupations such as information technology.

It was also stated that youth apprenticeships are a promising new strategy to engage youth in career-connected learning, encourage high school completion, lower the youth unemployment rate, lower the skills gap, and provide a pipeline for youth into higher education or into the industry as qualified workers to fill open positions.

Apprenticeships have survived and sustained themselves since as far back as the 1950s and some will say even as far back to the time of Christ who apprenticed under his earthly father as a carpenter.

Google is only as good as your connection.

Randy Lorge is a third generation plumber and plumbing instructor and trainer for the Plumbers Union, Local 400 out of Kaukauna, Wisconsin. Lorge was a coach for Team USA in 2015 in Nashik, India; 2016 in Diepsloot, South Africa; and in 2017 in Indonesia, where his team and he participated in the Community Plumbing Challenge. Lorge also sits on the International Association of Plumbing and Mechanical Officials (IAPMO) Training and Education committee. He enjoys time with his family and spending as much time as possible in his deer stand. To contact Lorge, email editor@plumbermag.com.





Drain Cleaning By Craig Mandli

Cable Machines

Brasscraft Cobra Pro CP2040

The **Cobra Pro CP2040** cable drum machine from **Brasscraft** is designed to clear 1- to 3-inch sink, shower, tub, and floor drains



up to 50 feet and has a 5/16-inch music-wire cable with reinforced steel inner core. The machine includes a fourpiece cutter set. The drill motor is double-insulated and has a foot switch for hands-free operation. **877-272-7755**; www.cobratools.com.



Duracable DM30

The **DM30** from **Duracable** has a double-tube frame that's constructed of an aluminum alloy for added stability. The electrical wiring runs through the top of the frame so normal

wear will not expose it. The machine can run 19- or 21-inch reels with options for open-spoke metal or enclosed polyethylene drums. Packages come with 21-inch reels and 100 feet of 5/8-inch drain cable. Its 1/2 hp motor makes it ideal for residential jobs, floor drains, roof vents and light commercial work. **877-244-0556; www.duracable.com**.



Electric Eel Model D-5

The **Model D-5** from **Electric Eel** is a continuous cable drum machine for cleaning 3- to 10-inch lines up to 100 feet. The high-density polyethylene drum and belt guard will not rust or dent and holds up to 100 feet of 3/4-inch Tri-Max cable. Three sealed, heavy-duty ball bearings support the drum and

thick-wall guide tube for extended wear. It is powered by a heavy-duty 1/2 hp capacitor-type motor to provide more torque. It has large 10-inch solid wheels for easy maneuvering and stabilization while in operation. It has extra-strength 1 1/4-inch steel tubing framework, five position height adjustments on the handle, a wheel brake, continuous belt skids and a loading wheel built into the handle, GFCI on a 20-foot line cord, and an air-operated foot switch for easy operation. **800-833-1212; www.electriceel.com.**



GI Industries TCM 5000

The high-speed **TCM 5000** pipe cleaning machine from **GI Industries** combines high-flow air/water flushing with brushing at variable speeds to provide the operator more control in various applications, creating a jetter and cable machine in one package. The variable-speed (0 to 1,750 rpm) control

allows customers to use cleaning/drill heads or devices from other manufacturers. It provides contractors greater flexibility in deciding which tools are correct for their application. These systems can clean 1/2- to 24-inch lines at over 150 feet on a single unit. **800-724-1944; www.giind.com**.

Gorlitz Sewer & Drain Model GO 68HD

The Gorlitz Sewer & Drain Model GO 68HD heavy-duty electric drain cleaning machine is available in two different versions



— either with an open steel reel or enclosed polyethylene drum — and can be outfitted with an optional power feeder. It comes with a standard configuration of 150 feet of 11/16inch hollow-core cable, which should reach most blockages with a single reel. It weighs 185 pounds, and adding a loading ramp and electric winch to any vehicle makes transportation quick and simple. It is designed to clean pipes from 3 to 8 inches in diameter. **877-446-7548; www.gorlitz.com.**



Spartan Tool Model 81

The **Model 81** drain cleaning machine from **Spartan Tool** is a versatile, lightweight machine that can operate vertically or horizontally to clear 1 1/4- to 3-inch lines up to 50 feet. It is ideal for medium-duty jobs in bathtubs, showers, laundry tubs and sinks. Rubber-capped feet allow use in tubs and showers while protecting the surface from scrapes and scratches. A cone-shaped internal drum applies extra torque to the cable, and the 25-foot power cord with ground fault interrupter helps the technician access the job easily and safely. **800-435-3866; www.spartantool.com.**

Enz USA Rotodrill Bend

Nozzles

At 2 3/4 inches long, the **Rotodrill Bend** nozzle from **Enz USA** is a powerful cleaning tool that can easily negotiate traps and bends. The high-



powered rotating jet provides thrust power and is effective for moving debris, tree roots and clearing blocked pipes. The nozzle pushes itself through pipes via a tapered front. It cleans and cuts its way down the pipe as it's retrieved, adding efficiency. It can operate on flow as low as 4 gpm while cleaning pipe ranging from 3 to 6 inches in diameter. It is available in 1/4- and 3/8-inch connections. **877-369-8721; www.enzusainc.com.**



StoneAge WGR Switcher

WGR Switcher sewer nozzle from StoneAge can run in pulling or cleaning mode without being removed from the pipe. By doing the job of

two different nozzles, it uses less water and time compared to making multiple runs with different nozzles. When the pump is idled down and brought back to pressure, it will switch the water flow between two different patterns of jets. One jet pattern pulls and flushes debris down the pipe, and the other is a cleaning and descaling pattern for cleaning deposits and cutting roots. The two-in-one unit navigates pipes 8 to 36 inches in diameter and handles pressures up to 5,000 psi at up to 100 gpm, running more jobs with one tank of water. **970-259-2869; www.stoneagetools.com.**



Portable Jetters

MyTana Mfg. M30 MaxBlast

The **M30 MaxBlast** gas-powered jetter from **MyTana Mfg.** maximizes portability without sacrificing cleaning power and efficiency. This mainline jetter's 390 cc Honda motor with electric start blasts through blockages with 4.5 gpm at 3,000 psi in 1 1/2- to 6-inch lines. It includes a 10-amp recharge



system and thermal pump protection to keep users safe, and a detachable hose reel leaves exhaust outside during indoor jetting. With 1/8- and 3/8-inch hoses, it combines all the power of a mainline jetter with the convenience of a medium-line jetter. It comes with stair glides and 10-inch pneumatic tires with swivel castors with locks, so it's easy to load, maneuver, disassemble and use. **800-328-8170**; www.mytana.com.



RIDGID KJ-1350 water jetter

The **RIDGID KJ-1350** water jetter propels a highly flexible hose through 1 1/4- to 4-inch lines, blasting through sludge, soap and grease blockages. As users pull the hose back, it power scrubs the

line, flushing debris away and restoring drainlines to freeflowing capacity. A working pressure of 1,350 psi and flow of 1.4 gpm provides fast, effective cleaning of lines. It comes standard with a 1.5 hp motor that draws a maximum of 14 amps, can run on most standard 115-volt circuits, and is CSA and UL standards approved. Simply guide the hose into the drain while the thrust propels the hose down the line. Activate the pulse action to easily navigate difficult bends and traps, and utilize the pressure control valve for quick and easy pressure adjustment. An optional H-10 cart makes for easy job site transport. **800-769-7743; www.ridgid.com.**



Root Control Chemicals

Duke's Root Control Razorooter II

Diquat-based **Razorooter II** root-control herbicide from Duke's Root Control is registered by the U.S. Environmental Protection Agency for controlling



nuisance tree roots in sanitary sewer collections systems. It kills roots and eliminates mainline stoppages caused by live tree roots. **800-447-6687; www.dukes.com**.

Lenzyme Trap-Cleer foaming root control

Foaming root control from Lenzyme Trap-Cleer has double the active ingredient dichlobenil of previous solutions, along with



a latex base designed to help it stick to roots longer. It is easy to apply and provides a slower foaming action to coat the entire pipeline and eliminate fast-foam-over messes. **800-223-3083; www.lenzyme.com.**



RootX chemical root control

Chemical root control from **RootX** is a long-term solution to pipeline root intrusion. It stunts new root growth without damaging the pipe, clearing pipeline roots that can cause blockages

and sanitary sewer overflows. The chemical won't harm water treatment systems and is registered with the U.S. EPA for both sanitary and storm use (EPA Reg. No. 68464). Simplicity of application enables crews to perform root control on demand or as scheduled preventive maintenance. **800-844-4974; www.rootx.com.**

Root Cutters

NozzTeq Lumberjack

The **Lumberjack** cutting nozzle from **NozzTeq** is a low-torque, variable-speed multipurpose cutting nozzle powered by common



sewer jetting or combination trucks. Its cutting chains rotate at speeds of 10,000 to 50,000 rpm, depending on pressure

and flow rate. The precisely engineered cutter is designed to cut roots, but it also effectively clears out concrete, tuberculation, grease, protruding laterals and other obstructions. Low torque means it won't get stuck, won't harm host pipe and won't spin off the hose end. It has sealed, grease-lubricated bearings and is water-cooled so it won't need daily maintenance. The cutter drive shaft and turbine are made of hardened steel and the supply tube is made of stainless steel, so the nozzle lasts for seven to 15 years' heavy use and is easy to rebuild. Five models clear pipes from 3 up to 48 inches. **866-620-5915; www.nozzteq.com.**

Picote Solutions Mini Sweeper

The **Mini Sweeper** from **Picote Solutions** is



designed to clean and descale pipes, including removing tree roots. It grinds away debris from the inside of the pipe at 1,000 to 1,500 rpm. The aggressive tool is effective in situations where there is thick scale, rust or other waste materials that are difficult to remove. It can also be used to remove wrinkles in liners or to remove excess lining material from the pipe wall after a failed liner has been removed. It is rebuildable after the legs become dull. It is available for 2-, 3-, and 4-inch pipe sizes and is powered by the Picote Mini or Maxi Miller. **708-267-6366; www.picotesolutions.com.**

Pipeline Renewal Technologies Micro Automatic Plus

The **Micro Automatic Plus** smalldiameter lateral and drain cutter from **Pipeline Renewal Technologies** combines powerful cutting and versatility for a machine ready to handle even the toughest roots. Equipped with three remote-inflated air bladders, it positions itself remotely



by creeping and climbing. It then clamps itself in place for precise cutting in vertical or horizontal orientation and extends using a full 4-inch feed on the cutting head to complete every task with ease. At under 3 inches in diameter, the arm fits through small openings, and its agile articulation (90-degree swivel and 400-degree rotation) facilitates rootcutting at any angle. It is deployable in lines from 3 to 6 inches or 8 to 10 inches with modification. The cutter is controlled with a CANbus-based controller with twin multifunction joysticks. This allows for easy position recall, making repetitive work quick and intuitive. **866-936-8476; www.pipelinert.com.**

Southland Tool S906M1-AK root cutter motor

The **S906MI-AK** root cutter motor from **Southland Tool** is built from the same platform as the S906M-1 motor, but has an upgraded process for the internal parts that makes it



smooth to turn, improving hydraulic performance, and nearly eliminating internal corrosion. This process know as "advanced kinetics" uses a finish that improves the friction coefficient, allowing parts to run smoother, which reduces drag, saves water, and increases productivity. The metal becomes denser to ward off corrosion and wear. The cutter is designed for lines from 6 to 30 inches. The motor can accommodate hose sizes of 3/4, 1, 1 1/4 and 1 1/2 inches without being bushed down or up. It can handle flows from 40 to 170 gpm and pressures from 1,500 to 3,000 psi. It is rated up to maximum 288 pounds of torque and 220 pounds of continuous torque, which is ideal for cutting taps in larger sizes. **714-632-8198; www.southlandtool.com.**

USB-USA Turbo S600

The **Turbo S600** chain cutter from **USB-USA** is made of highquality stainless steel and has a continuously adjustable guide skid. Turbine technology powers

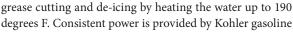


the durable chain retainer on a durable body to remove concrete, calcium deposits, hardened grease and tuberculation from 12- to 24-inch sewer lines. The unit's 3D fluid mechanics in conjunction with one-piece ceramic nozzle inserts allow the cutter to be used with recycled or clean water. Adjusting the cutter to different pipe dimensions is as easy as turning the rear spindle, which makes the cutter open or close. This type of adjustment allows the cutter to be adjustable within 1/16 inch. Different cutting attachments are also available for the end of the chain. **844-285-5770; www.usb-usa.com**.

Trailer Jetters

American Jetter 51 Series Hot Jetter

The **51 Series Hot Jetter** from **American Jetter** offers increased cleaning power for



engines up to 74 hp, with flows of 8.5 to more than 20 gpm and pressure to 4,000 psi. The rear reel provides precise cleaning speeds and easy access to the jet hose with the included hose guide. Low-water shut-off prevents pump damage if the 330- to 600-gallon tank runs low. The optional 1-mile openrange wireless remote option allows for water on/off, engine shutdown and hose reel control. The heavy-duty square tubing trailer offers a 2 5/16-inch ball coupler and standard electric brakes. **866-944-3569; www.americanjetter.com**.

Cam Spray TT4025HZ-350

Themodel **TT4025HZ-350** trailer jetter from **Cam Spray** produces 25 gpm at 4,000 psi



using an EPA Tier 4 Final Hatz Diesel 74 hp turbo intercooled, liquid-cooled engine. It comes with an over-center clutch, control panel with hour meter, low-fuel gauge, low-fuel shutdown, over-pressure shutdown and digital pressure readout. The reel is hydraulic powered with variable speed and comes mounted on a slide-out with angle adjustment fitted with 500 feet of 5/8-inch hose, manual shut-off valve and analog pressure gauge. RCM wireless remote control modes include valve open, valve close, engine idle down with a 15-second time delay shutdown, emergency shut-off, two-speed engine revolutions-per-minute control, and auxiliary 10-amp circuit with on/off control. **800-648-5011; www.camspray.com**.



Easy-Kleen Pressure Systems Groundhog Jetter

The **Groundhog Jetter** from **Easy-Kleen Pressure Systems** is designed to blast through clogged pipes with its 35 hp Vanguard engine that provides 12 gpm at

3,500 psi. It is compact and easily transported in a pickup truck or van, with trailer options available. It includes a fully welded, powder-coated 2-inch steel tube frame, drilled and tapped, which houses the 200-gallon water tank. It comes with an accessible breather and 10-gallon fuel tank, General Pump with gearbox drive, 12-volt powered hose reel with 300 feet of 3/8-inch jetter hose, hose guides, super swivel and foot-pedal control, emergency shut-off valve, and an hour meter. Optional remote features include hose reel-in, motor off/speed control and pressure on/off. **800-315-5533; www.easykleen.com.**



Hot Jet USA HotJet II

The HotJet II sewer and drainline jetter from Hot Jet USA is a dual-purpose machine that cleans drains and serves as



a high-powered, hot-water pressure washer. It can be used to clean drains up to 300 feet long and 12 inches in diameter. It has a 35 hp Vanguard engine by Toyota, delivering 10 gpm at 4,000 psi using hot or cold water, mounted on a diamond plate tandem-axle trailer, and powder-coated for durability. **800-624-8186; www.hotjetusa.com.**

Jetters Northwest Eagle 200

The **Eagle 200** midsize trailer jetter series from **Jetters Northwest** is available in 12 gpm/3,000 psi (model Eagle-



200/3012) with 1/2-inch I.D. jet hose or the 9 gpm/4,000 psi (model Eagle-200/4009) with 3/8-inch I.D. jet hose. It comes with either a Kawasaki (liquid-cooled) or Kohler

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(air-cooled) fuel-injected engine, an industrial-duty trailer with brakes for safety, and an A-frame tongue that allows it to be towed when full of water. Flat-top fenders allow for additional mounting-surface. Chrome wheels give it a sharp appearance. It comes with a super-duty triplex UDOR U.S.A. pump, 12-volt power-wind hose reel with windspeed controller, 200-gallon water tank, large 60-inch lockable tool storage bin, 300 feet of jetting hose on the main 12-volt reel, 100 feet of 3/4-inch water-supply hose on a second reel, adjustable pulsation control, and four jetting nozzles. **877-901-1936; www.jettersnorthwest.com.**



Mongoose Jetters by Sewer Equipment Model 184

The Model 184 jetter from Mongoose Jetters by Sewer

Equipment has a tubular steel frame, corrosion-resistant prepainted subassemblies, state-of-the-art controls, a strong hose reel, high-quality diesel engine and the Mongoose Run Dry Pump. **877-735-4640; www.mongoosejetters.com**.

Trojan Worldwide TWWS3500

The **TWWS3500** skid-mount jetter from **Trojan Worldwide** can turn any full-sized pickup into a jetting machine. It has a 26 hp Honda GX690 engine with electric start and a triplex



ceramic plunger pump putting out 8 gpm at 3,000 psi. Hot-water blasting is made easy with a Beckett burner, stainless coil wrap, hood, control panel and adjustable thermostat. It comes equipped with a 150-gallon water tank with transfer pump, 100-foot fill hose on manual reel, 300 feet of 3/8-inch and 1/2-inch jetter hose with automatic reel, 100-feet of pressure washer hose on a manual reel, three 3/8-inch jetter nozzles, three 1/2-inch jetter nozzles, and a pressure washer wand with quick release. **800-392-4902;** www.trojanworldwide.com.

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Suitcase jetter gets restaurant drains flowing again



Problem: A restaurant chain local to the Orange County area of California was dealing with problematic drains in the kitchen. The drains kept getting clogged, and several plumbers were unable to keep the drains clear with traditional wire cables. Monthly servicing with the cables wouldn't keep the drains clear.

Solution: Ciro Plumbing was called in to get the drains flowing again and chose the **Crap Shooter** suitcase jetter from **BullFrog Industries**. "The BullFrog Crap Shooter was the perfect tool for the job," says Ciro Montelongo, owner. "Its compact size lets me get into the site, quickly set up, get the job done and move on to my next call."

Result: "Not only was I able to make my customer satisfied, but I now have a contract to clean all six of his restaurants every three months," Montelongo says. "The payback on the equipment was almost immediate — I was in the black after the first month." **888-890-1555; www.flushafrog.com.**

Jetter helps solve blocked overflow pipe issue



Problem: Over 50 years' hardened sediment and debris blocked a critical 5-inch overflow pipe beneath the artificial lake at Dospat Dam, Bulgaria, seriously threatening dam wall integrity and risking catastrophic failure. Construction of a new conduit proved unfeasible. The remote setting prevented use of heavy, trailer-mounted equipment. And the 460-foot line descended 2.5 percent to 157 feet beneath the dam wall through four tight bends to the outflow, making it extremely difficult to access the obstruction.

Solution: Double D Engineering opted for a compact, portable water jetter, the JM-3080 gas-powered water jet from General Pipe Cleaners/General Wire Spring. The high-flow water jet is ideal for clearing 4- to 8-inch lines of grease, sediment, ice and other soft blockages. A 20 hp Honda engine with electric start provides 8 gpm at 3,000 psi. A 12-gallon buffer tank protects the pump when the water supply is inadequate. Vibra-Pulse propels the hose down long lines and around tight bends.

Result: The JM-3080 eventually helped clear what seemed like an impossible blockage. "We're enormously pleased with the JM-3080's portability, power and performance," says Dimiter Dimitrov, company manager. **800-245-6200**; www.drainbrain.com.



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- Produces 25 Gallons Per Minute at 4000 PSI
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- 74 HP EPA Tier 4 Final Compliant Hatz Turbo Intercooled Diesel Engine
- Air Purge Valve and 18 Gallon Anti-Freeze Tank and Freeze Protection
- Heavily Constructed Trailer with 2" x 4" Steel Tube Box Frame
- 26 Gal Fuel Tank Gives Hours of Run Time on a Single Fill
- Wireless Remote to Control Throttle Up and Down, Water Valve and More
- 350 Gallon Tank with 2" Hydrant Fill
- Features 150' Wash Down Hose and Front-mounted & **Over-fender Tool Boxes**

Cutter used to remove large root mass from condo's storm drain



Problem: A Nu Flow Technologies certified installer in San Diego was called to investigate what was causing a 10-inchdiameter storm drainline at a condo to continually overflow every time it rained. Upon inspection, it was discovered that the 30-year-old line was severely intruded with roots that restricted the flow and caused the backups.

Solution: In order to remove the abundance of roots that had gathered in the pipes, they had to cut them out. The Pneumatic Micro-Cutter from Nu Flow Technologies was used to cut away at the roots. Once complete, the roots could be pulled, and the cluster was revealed to be 15 feet long.

Result: "After the roots were removed from the inside of the pipe, the customer decided to install a CIPP liner inside the storm drain to prevent any future roots from penetrating through the pipe. 800-834-9597; www.nuflowtechnologies.com.

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Product Spotlight

A push camera in high definition By Fraig Mandil

inmhers are always keeping an eye out for products that offer a multitude of options at an affordable price. Vivax-Metrotech provides just that with the vCam-6 HD inspection system.

The high-definition camera system gives both nunicipalities and plumbing contractors a fully equipped system at a palatable price point. Features such as text writer, voice-over, locatable sonde and a traceable pushrod are included as standard equipment. The standard reel is available with 200, 300, or 400 feet of pushrod and choices of 1.3- or 1.8-inch self-leveling HD camera.

"What makes the vCam-6 truly unique is the full 1080 pixel high-defi-

nition camera head and control module," savs Rich Jordan, product manager at Vivax-Metrotech. "Before the vCam-6, the only HD inspection systems were crawler cameras. This introduces high-definition quality in a push camera system."

Built tough and reliable for everyday use, the versatile camera system is a good fit for plumbers, contractors, home inspectors, building maintenance supervisors, or anyone looking to inspect the interior of a pipe or duct. It can be used to create crisp, detailed HD video inspections with audio comments, text descriptions, footage, date, and time



stamps to submit to costomers without worry. It offers a five-hour battery life and charging on-the-go with the provided AC and DC charging leads.

"The vCam-6 system has applications in both the lateral line and mainline inspections because two sizes of camera heads are offered," Jordan says. "The D34 HD camera, which is 1.3 inches in diameter, can be used on lines from 3 to 6 inches. This is good for laterals to the building and some inside building applications. The larger D46, which is 1.8 inches in diameter, can be used on lines from 3 to 8 inches in diameter. This is good for main sewer lines. When used with the Type-P Skid with 1 ight Kit, the D46 HD camera can be used in lines up to 14 inches."

It comes with a control module with a 9.7-inch HD1CD with distance counter. Video recording and IPEG format pictures can be saved to the internal 1 TB hard drive. The control module has built-in Wi-Fi to stream live video and snapshots to smartphone apps or direct to your computer for recording to the hard drive. The features of the easy-touse system aren't lost on customers.

"The feedback could not be better," Jordan says. "Customers are comparing the picture quality to that of the much more expensive crawler cameras." 800-446-3392; www.vivax-metrotech.com.





Fluidmaster PRO45K Plumber Kit for toilet tanks

The PRO45K from Fluidmaster is a complete kit for a total overhaul of toilet tank components. The kit includes a fill valve, 2-inch flush valve, flexible flapper, solid brass bolts, stainless steel washers, gasket and a PRO61 tank lever.

The kit contains all the necessary components for a quick installation and eliminates the need to purchase additional parts. It is code-approved and features durable components to fix and upgrade a toilet, making it quiet and efficient. **949-728-2000; www.fluidmaster.com.**

Hannay Reels VAC Series vacuum hose storage reel

VAC Series reels from Hannay Reels store and handle vacuum hose up to 4 inches I.D. The reels are constructed with a heavyduty frame for over-road durability and offer a variety of mounting configurations to adjust



to different truck and tank constraints. The reels have dual, sealed bearings for smooth winding and unwinding operation, and spoked discs, which make for an optimal balance of strength and weight savings. The reel comes standard with manual rewind but is also available with electric, air, or hydraulic rewind for smoother handling. A dual-sided hose access design offers easy access to the hose from either side. **877-467-3357; www.hannay.com.**



Perma-Liner Industries Vinyl Ester resin

Perma-Liner Industries has a new high-performance epoxy vinyl ester resin, Vinyl Ester. The new resin provides corrosion resistance, durability

and toughness for CIPP applications. It is well-suited for specific applications where fluid temperature is relatively higher and also for high-pressure and corrosive environments. The molecular architecture delivers a number of benefits, including superior mechanical properties and catalyzed pot life. **866-336-2568; www.perma-liner.com.**

REHAU, Building Solutions Division, PlumbingCAD takeoff software

REHAU, Building Solutions Division, PlumbingCAD 2018



takeoff software for the REHAU PEXa plumbing system is CAD-based, offered through Avenir Software. It allows for quickly generated takeoffs and quotes for commercial and residential projects. The software imports PDF and AutoCAD drawings, traces the plumbing system, and then generates a REHAU PEXa plumbing system materials list and quotation. Key components in the materials list are RAUPEX UV shield PEXa pipe and EVERLOC+ polymer and lead-free brass compression-sleeve fittings in diameters up to 2 inches. **800-247-9445; www.na.rehau.com.**



HammerHead Trenchless LT-20PRO CIPP trailer

The HammerHead Trenchless LT-20PRO is a

purpose-built trailer for CIPP applications, and it features a modular design with all storage, electrical power, and air supply needed for a wide range of lateral lining tasks. The configuration is customizable, allowing the customer to tailor it to their specific needs and avoid duplication of existing equipment. The base model's standard features include insulated trailer walls and ceiling, roof-mounted air conditioner, 13,000-watt generator with external slideout, roller bed with wall mount for the wet-out table, 30-gallon wall-mounted air compressor, and external and internal air connections and electrical outlets. **800-331-6653**; www.hammerheadtrenchless.com.



GROHE Lineare Collection bathroom fixtures

The redesigned Lineare Collection offers the slimmest body available from GROHE. Inspired by the modern aesthetic

of architect Mies van der Rohe's Farnsworth House, the line features softened corners and smooth contours to ensure ergonomics and comfort for the user. The collection features a range of options including extra-small-, small-, and largesize center-set lavatory faucets; a widespread faucet; shower trims; and free-standing and Roman tub fillers. Finishes include StarLight chrome and brushed nickel Infinity Finish. **800-444-7643; www.groheamerica.com.**



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Ruvati USA WORKstation sink

The WORKstation sink from Ruvati USA is designed for RV and tiny-home customers, to make the most of small kitchen spaces. It comes

with built-in accessories. The cutting board, constructed of solid African mahogany, is water-resistant and covers the entire sink, converting the sink into a countertop. Also included is a 5-inch-deep stainless steel colander that can be used as a strainer or drying caddy. It is offered in two sizes: 15-by-15-inch with a 9-inch bowl depth and 15-by-20inch with a 10-inch bowl depth. Featuring a top-mount installation, the sinks are made from 16-gauge premium 304 stainless steel and offers heavy-duty padding and undercoating for maximum noise absorption. **855-478-8284; www.ruvati.com.**



LeakSmart (Waxman Products) water leak detection system

The LeakSmart System's four components — an automatic water shut-off valve, wireless water leak and temperature sensors, system hub, and free smartphone application — work together to detect a leak or pipe

freezing temperature. Once detected, the system immediately shuts off the home's water supply and simultaneously alerts the homeowner via a smart device in under five seconds. LeakSmart sensors are placed behind appliances, under pipes and other places where leaks may occur. Monitoring for temperature and leaks, a sensor automatically signals the LeakSmart Valve to automatically shut off water. Also offered are the LeakSmart Sensor Range Extender to help boost signal strength of distant LeakSmart sensors, as well as LeakSmart Standalone Systems for direct appliance shut off, including washing machines, hot-water tanks, dishwasher, sinks and toilets. **855-532-5457; www.leaksmart.com**.

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INDUSTRY NEWS

Uponor North America appoints new vice president of finance

John Reutter was named the new president of finance for Uponor North America. He will lead all of the finance-related teams, including accounting, finance, risk management and legal. Most recently, he served as



the vice president of finance for Ecolab's global health care business, leading a team throughout the U.S. and Europe.

Keeney Mfg. mobile catalog app

Keeney Mfg. announced its new mobile catalog app, which offers up-to-date product information that provides users with the most recent content available. In addition to standard catalog information, the app contains a literature library for new products, sell sheets, and access to past catalogs. Another feature of the mobile app allows users to send general questions at any time about a product or app usage to our customer service team without leaving the app.

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 John White III and Ben White present Major Dan Rooney with a check from Taco Comfort Solutions at the 2018 Eastern Energy Expo.

Taco Comfort Solutions donates to Folds of Honor

Taco Comfort Solutions donated over \$32,000 to the Folds of Honor Foundation at the Eastern Energy Expo at Foxwoods Casino Resort in Mashantucket, Connecticut. Folds of Honor is a nonprofit organization that provides scholarships to children and spouses of disabled veterans or those killed in action. To date, the charity has raised over \$100 million and provided nearly 16,000 scholarships.

Reliance Worldwide acquires John Guest Holdings

Reliance Worldwide announced it has successfully closed on the acquisition of John Guest Holdings. According to Reliance Worldwide, the acquisition of John Guest aligns with its strategy to add complementary products that broaden the solutions offered to end users and expand its market presence, particularly in Europe. The combined businesses will provide an end-to-end solution with applications from meter to fixture and floor to ceiling from a single manufacturer.

TRIC Tools revises website to animate pipe bursting

TRIC Tools announced the rerelease of its new website, www.trictools.com, with new animation featured for the X30 pipe bursting hydraulic ram. The animation is a collaboration with Trenchless Marketing, which will next feature the Municipal M100 hydraulic ram. The updated website is organized into eight sections that describe the company, what products and services they offer, and how TRIC Tools can assist in meeting your trenchless product needs.

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Cyclops Camera equipment is now Cyclops Systems. We can repair and/ or replace your equipment. Call 970-842-3508 or 970-371-3546; email toddsimon0@gmail.com (C10)

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CALENDAR

Oct. 26

Northeast Wisconsin Plumbing Seminar,

Holiday Inn, Fond du Lac, Wisconsin. Visit www.phcc-wi.org/plumbing-seminars.

Nov. 9

Central Wisconsin Plumbing Seminar,

Stoney Creek Hotel & Conference Center, Rothschild, Wisconsin. Visit www.phcc-wi.org/plumbing-seminars.

Jan. 14-16, 2019

International Air Conditioning, Heating, Refrigerating Exposition (AHR Expo);

Georgia World Congress Center, Atlanta. Visit www.ahrexpo.com.

Feb. 19-21. 2019

The Kitchen & Bath Industry Show (KBIS),

Las Vegas Convention Center, Las Vegas. Visit www.kbis.com.

Feb. 19-21. 2019

National Association of Home Builders (NAHB) International Builders' Show,

Las Vegas Convention Center, Las Vegas. Visit www.buildersshow.com.

Feb. 20-23, 2019

Water & Wastewater Equipment, Treatment & Transport (WWETT) Show, Indianapolis Convention Center. Indianapolis.

Visit www.wwettshow.com. 🖻

Plumber invites organizations and associations to submit details about upcoming industry trade shows and conferences for our calendar of events. Send information to editor@plumbermag.com.

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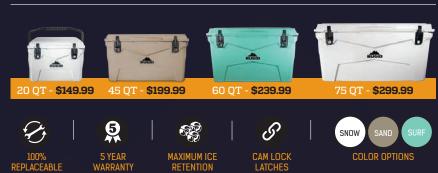
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Please tell us about yourself, so we can better serve you.

WHAT IS YOUR PRIMARY SERVICE?

Plumbing/Heating/Cooling Rehabilitation/Relining/Bursting
Sewer/Drain Cleaning Dealer/Distributor/Manufacturer
Septic System Installation/Repair Consulting/Engineering
Other_____

WHAT BEST DESCRIBES YOUR PRIMARY JOB FUNCTION?

President/CEO/Owner
Management/Supervisor

Operator/Technician
Other _____

HOW MANY EMPLOYEES DO YOU SUPERVISE OR WORK WITH AT YOUR FACILITY?

□ 1-3 □ 4-9 □ 10-19 □ 20+

 HOW MANY VEHICLES DO YOU CURRENTLY HAVE IN SERVICE?

 □ 1-5
 □ 6-10
 □ 11-15
 □ 16-20
 □ 21+

 WHAT IS THE APPROXIMATE POPULATION OF THE AREA IN

 WHICH YOU PROVIDE SERVICE?

 □ 1-10,000
 □ 10,001-50,000
 □ 50,001-100,000

 □ 100,001-200,000
 □ 200,001-500,000
 □ 500,001+

 WHAT IS YOUR ANNUAL EQUIPMENT BUDGET?

 \$1-\$50K
 \$51K-\$75K
 \$76K-\$150K
 \$151K-\$250K

□°I-*50K □*51K-*75K □*76K-*150K □*151K-*250K □*251K-*350K □*350K +

WHAT SERVICES DO YOU PERFORM ON A REGULAR BASIS?

□ Plumbing Maintenance/Repair □ Sewer/Drain Cleaning □ New Construction - Commercial □ Pipe Bursting □ New Construction - Residential □ HVAC □ TV Inspection □ Location/Leak Detection □ Septic System Installation □ Septic Tank Pumping □ Other _____



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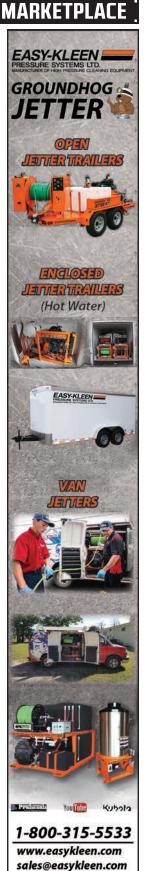


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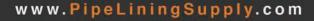
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