

# Plumber™

## THE EXTRA MILE

Florida plumbing contractor puts focus on customers and employees and earns a reputation that keeps the company growing  
Page 12

▲ On The Road  
INCREASING PROFITABILITY  
WITH THE HELP OF A GPS SYSTEM  
Page 20

▲ Industry Insider  
FIND A NEW AND BETTER  
WAY TO TEACH YOUR STAFF  
Page 36





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## Keeping Track

GPS system improves plumbing firm's profitability, weeds out dishonest employees.

- By Ken Wysocky



## On the Cover

Efesdamin Figueroa, El Plomero Latino lead technician, uses a RIDGID FlexShaft K9204 in the clean-out outside of a home in Orlando, Florida. The company, owned by David Sierra, was founded in 2011 and offers commercial and residential plumbing service and repair, drain cleaning, pipeline inspections, and leak detection services throughout a 60-mile radius around Orlando. (Photography by Preston C. Mack)

## Coming Next Month - Annual Buyer's Guide, Kitchen & Bath

- ▲ Profile: Bulldog Contractors LLC (Jefferson, Texas)
- ▲ Industry Insider: Anthony Pacilla
- ▲ Smart Business: Different options when buying equipment

## 8 From the Editor: Making History

As you find historical treasures, it's important to know how to keep your company from becoming old and out of date as well.  
- By Cory Dellenbach

## 9 Water and Wastewater: No Industry Is More Essential

We have always known you're essential, and we are thankful and supportive as you continue your work during this uncertain time.

## 10 @plumbermag.com

Check out our exclusive online content.

## 12 Profile: The Extra Mile

Florida plumbing contractor puts focus on customers and employees and earns a reputation that keeps the company growing.  
- By Ken Wysocky

## 22 Smart Business: A Closer Look

The Tax Cuts and Jobs Act changes might require you to analyze how you're financing equipment purchases.  
- By Chris Fowler

## 26 In the Shop: Getting the Most From Your Vacuum Pumps

The wheels still roll, but lose suction power and your truck might as well be dead on the side of the road. A proper maintenance plan will keep you pumping on the busy days ahead.  
- By Jared Raney

## 30 Getting Down to Business: Treating Customers Right

Perception is reality for customers, and clear communication will reinforce that you respect them and appreciate their business.  
- By Rodney Koop

## 32 Product News: Product Spotlight: Faucet provides an 'industrial chic' look

- By Craig Mandli

## 36 Industry Insider: A Winning Algorithm

Teaching staff why you do things the way you do will help them better learn the job and the business.  
- By Anja Smith

## 38 Product Focus: Septic and Sewer Systems

- By Craig Mandli

## 42 Case Studies: Septic and Sewer Systems

- By Craig Mandli



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# ADVERTISER INDEX

**ALLAN J. COLEMAN**  
SINCE 1905

Allan J. Coleman Co. .... 35

American Jetter ..... 41

BrassCraft Mfg. Co. .... 23



Cam Spray ..... 35



Central Oklahoma Winnelson ..... 31



Duracable Manufacturing Company ..... 17

FastEST, Inc. .... 41

Flows.com ..... 29



General Pipe Cleaners/  
General Wire Spring ..... 44



HotJet USA ..... 43

McCormick Systems, Inc. .... 41



Nexstar Network, Inc. .... 7



Norweco, Inc. .... 11



Picote Solutions ..... 19



Pipe Lining Supply ..... 2



Pulsar 2000, Inc. .... 15



Spartan Tool ..... 5

Superior Signal Company LLC ... 41



SuppliesDepot.com ..... 25



TRIC Tools, Inc. .... 3

Classifieds ..... 37

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Chris and Emily's business turnaround isn't based on luck. Their successful, fast-growing company is the result of training, coaching, follow-through, and hard work.

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Cory Dellenbach

## Making History

As you find historical treasures, it's important to know how to keep your company from becoming old and out of date as well

**I**

want all of you to think back to when you were kids — playing in the yard, in the sandbox, and just digging around. How awesome was it when you found a hidden treasure?

I remember as a kid that my brothers and I used to bury our Hot Wheels cars, then forget about them and a few months later find them while digging. It was like we found a pile of gold.

Do you still get that way? You know, working on a customer's remodeling project or service call when you run across a hidden gem and you can't believe what you've just found. Or have you found real hidden treasure like a ring or other jewelry that was flushed down the toilet or dropped in the sink?

### SEEING HISTORY

Recently, I was at a friend's house where a local plumbing company is helping with a bathroom remodel. The plumbing crew was taking out an old claw-foot tub — which was about 100 years old. As soon as they removed it, an old drain cover was revealed.

It was a neat cover forged by The Monarch Brass Co. in Cleveland. The plumbers on the job were excited about the find. It was awesome seeing them get pumped over something like that.

It's not the first time I've seen excitement from those in the industry. I've seen postings on plumbing Facebook groups that show other finds — every-

thing from 100-plus-year-old pipes to unique ways to connect pipes and so much more.

All of these treasures tell the history of plumbing. That history is important — knowing how far the industry has come, why codes continue to change and why the technology continues to advance.

### CHANGING WITH TECHNOLOGY

As a contractor in this industry, you must be able to adapt to some of these changes. If you don't, then your company might end up becoming history itself.

El Plomero Latino, based in Orlando, Florida, and featured in this issue, has adapted to changes as the company grew. Owner David Sierra started with just himself and one truck, but now has four service trucks and six people, including his wife, working for the company. He's also added equipment and tools through the years to help his staff work better.

Even with the growth the Florida company has seen, it has continued to provide the solid customer service Sierra expects.

Remember this as you find historical pieces in the jobs you are working. Is your company keeping up with the times with equipment or policies? If not, it might be time to reevaluate your company.

### WHAT HAVE YOU SEEN?

I'd like to hear what you've found at a job site that interested you so much that you have it hanging at your shop, at your house or in your truck. Tell me the story behind finding it. Email me at [editor@plumbermag.com](mailto:editor@plumbermag.com) or call 715-350-8436.

Enjoy this issue! 📧



▲ A drain cover found by Frasier's Plumbing, Heating & Cooling in Rhinelander, Wisconsin, on a job site.



## Water and Wastewater: No Industry Is More Essential

We have always known you're essential, and we are thankful and supportive as you continue your work during this uncertain time

In its response to the coronavirus pandemic, the federal government identified you as essential critical infrastructure workers. At COLE Publishing, we've always known you're essential. That's why we're here.

Since this company was founded in 1979, we have been shining a light on the water and wastewater industries, showing the recognition and appreciation you and your work deserve.

In its overview of the Essential Critical Infrastructure Workforce, the Department of Homeland Security includes a section on Water/Wastewater workers, but reading through that document, your jobs are represented by multiple categories: Public Health, Public Safety, First Responders, Transportation, Logistics, Public Works and Hazardous Materials.

You are much more than water and wastewater workers. Running water and wastewater systems is a commitment that goes way beyond the standard workday. You're not just earning a paycheck; you're taking care of your community.

Clean water is essential to life, and proper sanitation is one of the greatest factors in public health. Ensuring we have both is a monumental task that rarely gets the respect it deserves. We take it for granted until suddenly there's a problem. Most often it's a water main break that leads to a temporary loss of service, or a clogged sewer line backing wastewater up into our basements. Maybe the occasional boil water advisory or a frozen line. But those are all short-term. We act inconvenienced, but only because we're used to such incredible convenience.

A lot of people were taking a lot of things for granted before this pandemic began shutting down our normal

lives. And then suddenly hand sanitizer vanished from shelves. Then toilet paper. Imagine if instead of people suddenly deciding they needed every roll of toilet paper they could get their hands on, this pandemic compromised our water supplies and people fought for every bottle of water they could find. But that's not how it played out. Our water is safe; anyone blocking access to the toilet paper aisle is in grave danger. And we flush our toilets and send all the waste to you.

Our water and wastewater systems are still working as they should, because you're still on the job. You still won't get the appreciation you deserve in most cases, but that's absolutely not the case here. We, the entire staff at COLE Publishing, know your role is just as important as any doctor, police officer or elected official. You are unsung heroes, and we are here to say *Thank You*.

Sincerely,  
The COLE Publishing Team



To read the complete memorandum and infrastructure guidance document released by the federal government, visit [www.cisa.gov/sites/default/files/publications/CISA\\_Guidance\\_on\\_the\\_Essential\\_Critical\\_Infrastructure\\_Workforce\\_508C\\_0.pdf](http://www.cisa.gov/sites/default/files/publications/CISA_Guidance_on_the_Essential_Critical_Infrastructure_Workforce_508C_0.pdf).

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## REAL TALK

### Avoid Confusing Customers With Industry Jargon

Gaining a person's business ultimately means earning their trust, and there is no better way to do that than tapping into the brain's affinity for processing information visually. This online exclusive takes a look at how you can better visualize plumbing problems for customers rather than bogging them down with industry terms they don't understand. [▲ plumbermag.com/featured](http://plumbermag.com/featured)



## UNDER PRESSURE

### How to Fix Pressure Problems on a Waterjetting Job

Downtime on a job can be a difficult blow, decreasing profit margins while also increasing the likelihood of a dissatisfied customer. It helps if you can at least diagnose and temporarily fix equipment problems in the field.

This online exclusive covers what to do if you have issues with a water jetter while on a drain cleaning call. [▲ plumbermag.com/featured](http://plumbermag.com/featured)



## GETTING TOGETHER

### Why You Should Take Staff Meetings Seriously

Many business owners are probably used to hearing some groans when announcing that everyone needs to gather in the conference room. But such meetings don't have to elicit that type of response. If done properly, they should help focus a team and energize employees. This online exclusive provides some tips on how to get the most out of staff meetings. [▲ plumbermag.com/featured](http://plumbermag.com/featured)

## OVERHEARD ONLINE

*"Many of the decisions we make when we're desperate to get the business off the ground are the very decisions that keep us from growing to the heights we're meant to reach."*

*— Seemingly Good Short-Term Business Decisions Can Have Long-Term Negative Effects*

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▼ David Sierra started El Plomero Latino in Orlando, Florida, in 2011 with just himself and a truck. The company now has four service vehicles and six employees.

# THE EXTRA MILE

Florida plumbing contractor puts focus on customers and employees and earns a reputation that keeps the company growing

By Ken Wysocky |  
Photography by Preston C. Mack



*El Plomero Latino, Orlando, Florida*

<b>OWNER</b>	David Sierra
<b>FOUNDED</b>	2011
<b>EMPLOYEES</b>	5
<b>SERVICES</b>	Commercial and residential plumbing service and repair, drain cleaning, pipeline inspections, leak detection services
<b>SERVICE AREA</b>	60-mile radius around Orlando
<b>WEBSITE</b>	<a href="http://www.elplomeroLatino.com">www.elplomeroLatino.com</a>



**A**s David Sierra worked for nearly two decades at plumbing companies in both Puerto Rico and Florida, he slowly developed a vision for how he'd run a business if he ever got the chance. That vision is now fully realized in the form of El Plomero Latino, which translates to The Latin Plumber.

One of Sierra's chief priorities centers on doing things differently, in terms of how to treat customers and manage employees. He also emphasizes a distinctive marketing approach that utilizes social media platforms such as Facebook and YouTube, not to mention a couple of years as the host of a plumbing-focused radio show.

In addition, Sierra has emphasized investments in machines, tools, apps and equipment that helps his technicians work more efficiently and profitably. And last but not least, he decided to sharply focus on catering to an underserved market in his home base of Orlando: Latino customers who have difficulty speaking English.

"I'm trying to run a business that's different from the way other plumbing businesses are run," says Sierra, 45, who came to Florida from Puerto Rico in 1998 and founded El Plomero Latino in 2011. "I try to go the extra mile to give customers what they need and treat them the way I'd want to be treated. I wanted

to do more than just go to a house, do the work, give the customer an invoice and walk away.

"I'm in the business of creating customers for life, not squeezing them once for as much money as possible and then driving away," he adds. "In this day and age, you need to stand above your competitors. And that's what I'm trying to do."

The formula appears to be working. When Sierra established the company, he had one employee — himself — and one truck. Now the company runs four service trucks and employs six people, including his wife, Isis Janette Alameda, who manages the office.

"She's an angel, and I'm blessed to have her at my side," Sierra says. "She's just awesome."

### PHOTOS TELL THE STORY

For a good example of how Sierra does things differently, consider the reports he emails to customers along with an invoice. Technicians are trained to take before and after photos of the work they do, using cellphone cameras. The photos then get attached to emails that also include a summary of the work performed, he explains.

*"I'm trying to run a business that's different from the way other plumbing businesses are run. I try to go the extra mile to give customers what they need and treat them the way I'd want to be treated."*

**David Sierra**

► Jose Menendez uses a Fisher Labs XLT-17 leak detector as they search an Orlando, Florida, residence for any signs of water leaks. El Plomero Latino lists leak detection as one of its specialty areas of service.



## Plumber Profile



▲ The team at El Plomero Latino includes, from left, Joel Gonzalez, Matthew Camacho, Isis Janette Alameda, David Sierra, Efedamin Figueroa and Jose Menendez.

The photos serve a dual purpose. For one, they protect the company against claims that work wasn't performed. Second, it provides a differentiating convenience for property management companies, which account for about 75% of the company's business base.

"Busy property managers don't want the hassle of having to go to their tenants' homes or apartments to check out the work," he explains. "Emailing them the photos and report saves them time and builds trust."

The property managers pay Sierra, and the property owners then reimburse the property managers. As such, the report and photos provide an efficient way to let property owners — most of them living outside Florida — know work was completed, which paves the way for payment, Sierra says.

The photo-based reports also generated valuable word-of-mouth referrals during the company's early years because property managers really liked the concept, he adds.

To increase word-of-mouth referrals and repeat business, Sierra also emphasizes professionalism and communication with customers. Technicians do the little things that make a difference, such as wearing uniforms; driving newer, well-lettered trucks; calling customers to notify them about arrival times; and thoroughly explaining the scope of work required while providing various options.

“The everyday challenges are what I love about plumbing. For my entire career, I've prided myself on being that lead guy who can solve the most difficult problems.”

*David Sierra*

To enhance such communications, technicians are bilingual, he adds.

“We want to provide personalized service, with full communication,” Sierra notes. “We never want to leave a job site if customers still have questions. And the ability to speak to them in Spanish is huge, as many of these customers would rather work with someone they can understand better — someone who can understand exactly what they need.”

### DEEP ROOTS IN PLUMBING

Sierra grew up in the plumbing business in Puerto Rico. His now-retired father, Carmelo Sierra, a master plumber, established Sierra Plumbing in 1976 in the city



## Radio show put plumber and potential customers on the same wavelength

When David Sierra first established El Plomero Latino (The Latin Plumber) in Orlando in 2011, he needed a cost-effective way to promote his company and build brand recognition. The unconventional solution fit perfectly with his vision of building a plumbing company unlike most others: A radio show in which he answered plumbing-related questions posed by listeners.

For a fee of \$150 for an hour-long session once a week, broadcast on a local Spanish-language radio station, Sierra traded in monkey wrenches and drain machines for a microphone and headphones. The show aired from 4 to 5 p.m. every Tuesday. He had no prior experience with radio, but the entrepreneur was willing to learn, he says.

"At first, I was a sack of nerves ... knowing thousands of people were listening," he admits. "But after about six months, it didn't bother me anymore. When I put my mind to something, I'm able to get it done.

"I ended up doing it for about 2 1/2 years, and it got me very well known in central Florida," he continues. "It was a great tool for getting my name out there when I was first starting out. It allowed me to reach thousands of people in one hour, and you just can't beat that."

Sierra came up with the Q&A talk-show format and asked radio station officials if they'd be interested. "They said, 'You're going to talk about plumbing for an hour on the radio? OK, go ahead,'" he recalls. And after three weeks, the station was inundated with phone calls from listeners posing all sorts of questions.

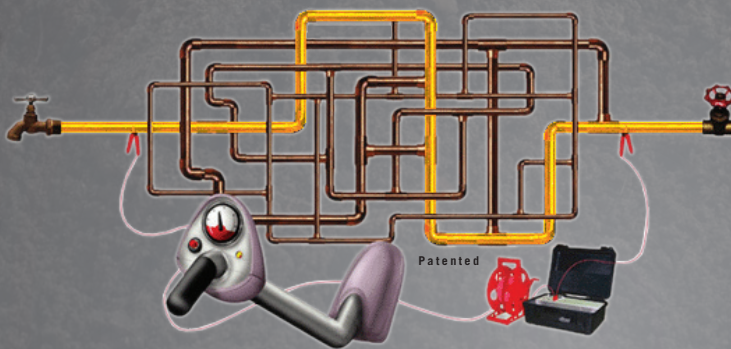
Eventually, Sierra stopped doing the show because he no longer had time, due to the company's rapid growth. But he says the experience helped immensely when he turned to social media — in particular, videos for Facebook and YouTube — to market his company. "I'm no longer afraid of the camera or the microphone," he says.

Sierra believes that marketing tools like YouTube videos are more effective when the goal is educating customers, as opposed to trying to convince them to use El Plomero Latino. As an example, he cites a video he made about maintenance tips that can prolong the life of a water heater or garbage disposal.

As for the radio show, Sierra would enjoy sitting behind a microphone again someday. "I'd love to get back to it," he says. "But in order to do that, I'd need more employees. And they're very hard to find."

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- ▶ Plumber Matthew Camacho uses a RIDGID SeeSnake Mini pack to inspect a bathroom sink drain at a residence.
- ▶ The RIDGID SeeSnake Mini pack camera gives Camacho a clear view of any issues while inspecting a drainpipe from the bathroom sink.



company's success, especially Efesdamin Figueroa, lead technician. "He knows the business as much as I do," Sierra says. Jose Menendez, who used to work for Sierra's brother in Puerto Rico, is a technician, along with Matthew Camacho. Sierra's cousin, Joel Gonzalez, is the dispatcher. "I have nothing but great people working with me," Sierra says. "I trust them with my life. They are great plumbers and are like family to us."

Mostly bad experiences with bosses throughout his career informed Sierra's management style, which centers on trust and respect. "I do everything in my power to not be like some of the people I worked for," he says. "They were rude and disrespectful; they were bosses, but they weren't leaders."

Sierra says he builds mutual trust and respect by working side by side with his employees. "I'm not afraid to get dirty, and they value that," he says. In addition, he offers employees flextime to accommodate family situations and the like and listens to their ideas and accepts them whenever possible.

A good example is RazorSync, a field management app suggested by Gonzalez. As the company grew, keeping track of job schedules became more problematic, and Gonzales stepped forward with a solution.

In addition, Sierra pays employees on a commission basis because he believes it motivates them to work harder and more efficiently. Why? The more they do, the more they get paid. "It encourages them to feel like they're part of the business," he says. "When you get paid (the same amount) for 40 hours a week whether you go the extra mile or not, people aren't as likely to go the extra mile for customers."

Continued ▶

of Bayamón; Sierra's brother, Carmelo Sierra Jr., now owns and operates the company.

"My father wanted me to do something else for a living, but I wanted to be a plumber ever since I was a little boy," Sierra explains. "But I wanted to be more than just a plumber — I wanted to be an *entrepreneur* plumber."

By age 16, Sierra had earned a plumbing license in Puerto Rico and was running his own service truck. "Working with family is very hard," he says of his decision to strike out on his own. In 1998, he moved to Florida, where he worked for several plumbing outfits for about 10 years while learning how to speak English and earning a state plumbing contractor license.

As soon as he obtained the contractor license, Sierra bought a used truck and started Jet Rooter Plumbing in Deltona, north of Orlando, in 2008. A divorce derailed that business, but undaunted, Sierra formed El Plomero Latino in 2011.

Great employees also have played a key role in the



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▲ Efesdamin Figueroa pulls out more hose from the company's Model 184 jetter (Mongoose Jetters by Sewer Equipment) to jet out a sewer line in Orlando, Florida.

## MORE BUSINESS, MORE EQUIPMENT

Working more efficiently and profitably requires good equipment. For starters, the company runs four service trucks: a 2019 Ford F-250 with a cab-high utility truck cap made by LEER (a member of the Truck Accessories Group); 2014 Ford E-250 cargo van; 2012 Ford E-150 van; and 2011 Chevrolet 2500 Express van.

Each truck carries two Spartan Tool drain machines: Spartan 100s and Spartan 300s for mainlines, plus a RIDGID hand-held K-50 and RIDGID K-6 toilet auger. The company also owns three RIDGID inspection cameras: one standard-size SeeSnake, one SeeSnake Mini and one SeeSnake microDrain, as well as two RIDGID NaviTrack Scout locators.

The company also relies on two RIDGID FlexShaft drain machines, a Model 102 and Model 204; two portable generators made by Predator and Troy-Bilt; and two XLT-30-B electronic leak detection units, made by Fisher Labs (a First Texas Products company). Technicians generally use DeWALT power hand tools, he says.

"New technology helps us be more cost competitive

“My father wanted me to do something else for a living, but I wanted to be a plumber ever since I was a little boy. But I wanted to be more than just a plumber — I wanted to be an *entrepreneur plumber*.”

*David Sierra*

and stay ahead of the competition,” Sierra says. “That’s why I’m constantly investing in it.”

Moreover, investing in advanced equipment helps Sierra do what he loves best about the plumbing industry: fixing customers’ problems.

“The everyday challenges are what I love about plumbing,” he explains. “For my entire career, I’ve prided myself on being that lead guy who can solve the most difficult problems. A lot of that I learned from my dad — he taught me right.

“I also love that each day brings news challenges,” he adds. “I can never say what I did today was just like what I did yesterday. It’s always something different.”

## A PLUMBING DETECTIVE

One of the more challenging problems Sierra ever faced involved a bathroom sink faucet and a bathtub valve that



wouldn't deliver hot water. Other plumbers had tried fixing it by taking apart the faucet and tub valve, figuring it was clogged, but to no avail.

But Sierra tried something different: Back-feeding the hot-water supply line by hooking it up to an air compressor.

"We could feel air coming through the line in the adjacent bathroom hot-water supply line, so there didn't appear to be a clog between those two lines," he explains. So he went up in the home's attic, where the water pipes ran, and disconnected the supply line closest to the affected bathroom. That's where he discovered the problem: a small marblelike piece that had broken off the heat-trap nipple in the water heater.

"When we air-tested it, there wasn't a problem because the marble rolled out of the way," he says. "But when water was flowing in the pipe, it would push the marble back to a connection where

the pipe steps down from 3/4 to 1/2 inch in diameter and obstruct the water flow. We had to play detective on that one — that's where experience and common sense comes into play.

"That's also where we make a name for ourselves because other plumbers were telling this customer that only a total home repipe would fix the problem," he adds. "They were trying to make some easy money instead of just solving the problem."

Looking ahead, Sierra has ambitious plans to franchise his business. "I also want to become a millionaire in the plumbing industry," he says. "And that's not a dream: It's a goal.

"I have it on my vision wall, a spot in my bathroom where I post goals," he explains. "When I get out of the shower every morning, I see it and it reminds me about where I want to go. And I'm very confident I'll get there." 📌

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# Keeping Track

GPS system improves plumbing firm's profitability, weeds out dishonest employees

By Ken Wysocky

**B**y simply investing in a GPS system, Rub-A-Dub Plumbing in Tyler, Texas, reduced fuel expenses, decreased driving-insurance costs, eliminated operational problems and improved technician's accountability.

The company's experience underscores the value of GPS tracking software — in this case, a system developed by GPS Insight. The cost? About \$275 a month to monitor seven service vehicles — an expense the company easily recoups, says Ginny Rivers, general manager.

The company — which was founded in 2004, employs 12 people and runs six service trucks — first started thinking about using GPS tracking when fuel bills started

increasing. To save money and boost efficiency, the company already was remotely dispatching technicians from their homes in the morning; they cover such a wide area of rural East Texas that it makes more sense for them to avoid driving to the office every day, she explains.

Yet fuel bills kept rising. The main culprit? Turns out some technicians were doing extracurricular driving when they were supposed to be working. In one instance, a gas receipt from a company credit card showed a technician was 50 miles away from a job site where he supposedly was working, Rivers says.

"We didn't want to be in the embarrassing position of calling customers and asking, 'Is our guy there?'" she says. "So we had to figure out a better way to keep track of technicians."

## TECHNOLOGICAL ASSIST

The GPS Insight system, which the company started using in October 2017, proved to be a viable solution. One feature allows the company to set boundaries on a map; if trucks pass those boundaries, dispatchers receive alerts.

"We put their homes outside those boundaries," Rivers explains. "So if someone goes home and takes a two-hour nap, for example, we know they've gone where they're not supposed to go."

Another feature allows the company to "landmark" specific locations, such as approved parts depots where the company has established accounts, as well as other critical locations. That helps new drivers who may be unfamiliar with the service area reach destinations faster, she says.

In addition, the system alerts dispatchers when technicians exceed speed limits. "As soon as I get an alert, I call the driver," Rivers says. "They dread that phone call."

The system also indicates when trucks are idling. So dispatches know if, for instance, technicians are sitting at a parts depot for 1 1/2 hours. "We understand the parts depot is like a beauty shop for guys — a place where they



**COMPANY** Rub-A-Dub Plumbing, Tyler, Texas

**OWNER** Brent McDonald

**PRODUCT** GPS Insight vehicle tracking system

**FUNCTION** Tracking technicians' vehicles

**FEATURES** Real-time vehicle tracking; speeding, idling and tampering alerts; virtual boundary setting; driving-safety reports to support driver's-insurance discounts

**COST** \$275 a month for seven vehicles

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

**GPS INSIGHT WEBSITE** [www.gpsinsight.com](http://www.gpsinsight.com)



“Now GPS Insight is just a part of our everyday lives around here. And we don’t have operational problems anymore. All of that went away.”

**Ginny Rivers**

can stop and shoot the breeze,” she says. “We understand that it’s good to meet your peers and talk about new ideas. But we don’t want them doing it for 1 1/2 hours.”

Dispatchers can also see where trucks are located in real time; the vehicles are color-coded to notate whether they’re driving or stopped (the trucks turn green and red, respectively). And if drivers lose internet service while driving in remote rural areas, dispatchers can guide them to their next service call, she explains.

Furthermore, a tampering alert tells the company if a technician tries to disable the system, she adds.

### WIDE RANGE OF BENEFITS

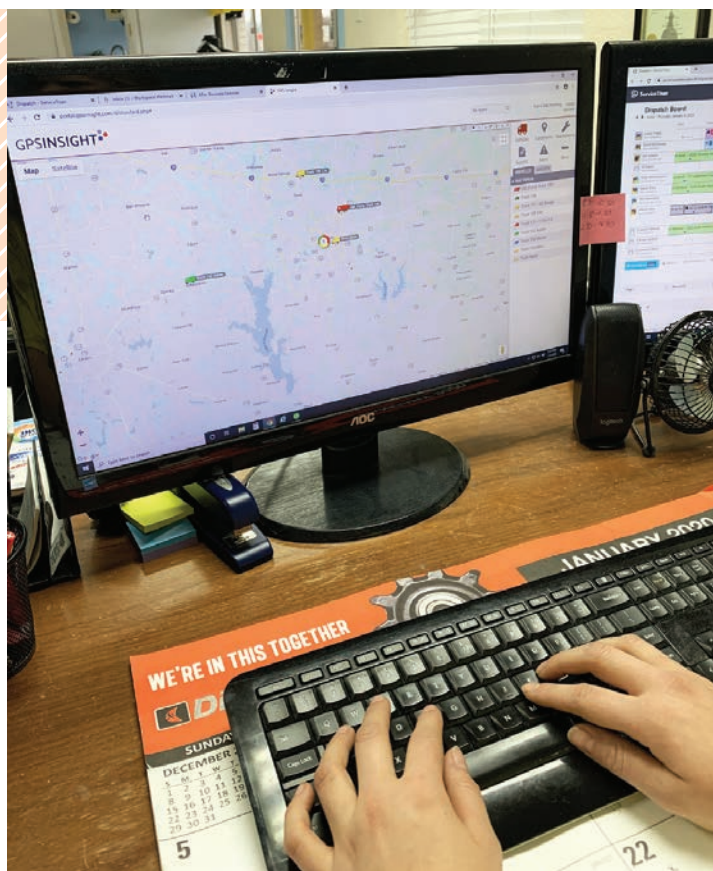
The system provides the company with many benefits, both financial and otherwise. For starters, Rivers says the company’s fuel expenses dropped about 16% per month, for a monthly savings of around \$600. In addition, overtime dropped by 10 hours a week.

“Guys who were a problem could no longer lie about where they were and for how long, so that’s a huge impact for us,” she says. “That alone probably raised our gross profit margins by about 3%.”

The GPS also makes drivers more conscious about not speeding, which decreases insurance expenses. The system produces a report that shows how many times drivers exceed the speed limit; the company submits that report to its insurance company as proof of safe-driving habits.

The bottom line: Driving-insurance expenses dropped by \$200 to \$300 a month. In addition, the GPS system serves as a tool for weeding out untrustworthy employees, she adds.


Initially technicians resented having their vehicles tracked. Technicians who weren’t bending rules were insulted that management was lumping them in with a few bad players. “But in the end, they understood this was



▲ A dispatcher at Rub-A-Dub Plumbing in Tyler, Texas, uses the GPS Insight vehicle tracking system on a computer at the office to track a truck and send directions to the next job.

a management tool that had to be applied across the board,” Rivers says.

To boost employee buy-in, the company integrated some driving metrics into its employee-of-the-month competition, in which workers get rewards by earning points for meeting certain performance standards. For example, technicians earn points if they go without a speeding alert. “So we’ve turned it into a positive,” she says.

The system helped the company eliminate its employee problems in about five months. “Now GPS Insight is just a part of our everyday lives around here,” Rivers notes. “And we don’t have operational problems anymore. All of that went away.” 



Chris Fowler

# A Closer Look

The Tax Cuts and Jobs Act changes might require you to analyze how you're financing equipment purchases

By Chris Fowler

**E**quipment is one of the most important factors in smooth operation of a plumbing business, and the question of how to pay for new equipment is equally important. With uncertainty of how 2017 tax reform will impact equipment acquisition, these business strategies warrant a closer look.

Financing capital equipment can enable plumbers to conserve their cash and lines of credit while providing maximum flexibility. The need to grow, stay competitive and meet the latest safety standards all factor into decisions when acquiring heavy equipment.

With all of this in mind, now is a good time to determine the best way to pay for capital equipment and maximize the benefits of tax reform legislation for qualifying purchases. This is general information only and is not comprehensive nor is it legal, accounting or tax advice. Consult with your own tax experts for advice on how to handle your individual situation.

## ENTER TAX REFORM

The Tax Cuts and Jobs Act, or TCJA, of 2017 positioned some businesses for growth and profitability.

While manufacturers have historically identified successful go-to strategies to optimize equipment-related tax legislation, the playing field has changed. From 100% expensing to the elimination of corporate alternative minimum tax, recent changes require a fresh analysis. Here are four important considerations:

### 1. Equipment financing remains an effective acquisition tool.

The TCJA didn't change the tried-and-true benefits of leasing that have always supported business growth. Equipment financing continues to provide:

- **Enhanced cash flow**, allowing businesses to avoid large out-of-pocket costs and effectively manage cash from operations.
- **Flexibility** and asset-management features,

including options to keep equipment in place for the long haul or upgrade to the latest technology.

- **Preservation of credit lines** to support day-to-day business operations rather than long-term capital needs.

### 2. Continued tax savings.

Most equipment offers depreciation benefits. Historically, the most common equipment financing options — loans, nontax leases and tax leases — allowed the equipment owner to deduct equipment depreciation expenses from taxable income, which significantly lowered their tax liability. Fortunately, the TCJA didn't eliminate this benefit.

Determining the tax deductions and credits that benefit your business the most is time well spent.

Evaluating and selecting the option that optimizes your unique business tax strategy is essential. Traditional thinking went something like this: Full corporate tax payers benefited most by retaining equipment tax ownership to take depreciation directly. Loans and nontax leases worked best for these businesses. Businesses that weren't full corporate tax payers commonly found more benefit from shifting the equipment's tax ownership to a third-party financing source in return for a lower financing rate. In this scenario, tax leases often were appropriate for the business strategy.

### 3. Historic changes with major impact.

The centerpiece of the TCJA — a reduction in the maximum corporate tax rate from 35% to 21% — dramatically

Continued ▶





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reduced tax liability for many manufacturers. Additionally, the range and size of available corporate tax deductions expanded. The combination of these two changes begs an important question for most businesses: How many deductions can realistically be absorbed going forward?

Determining the tax deductions and credits that benefit your business the most is time well spent. Together, your financial adviser and equipment finance provider can help you determine the right equipment acquisition strategy for your business this year and beyond.

#### 4. How much is too much?

Understanding your company's ability to absorb large deductions (e.g., modified accelerated cost recovery system depreciation, 100% expensing and other tax benefits) is important. Here are some areas to consider:

##### *100% Expensing*

For the better part of the last decade, bonus depreciation has reigned supreme, offering an additional 30% to 50% cost recovery — in addition to standard MACRS depreciation — on new equipment in the year it was placed in service. For equipment placed in service after Sept. 27, 2017, and before Jan. 1, 2023, however, the tax reform bill has eliminated the bonus depreciation feature. Instead, those who invest in qualified equipment during that time can simply expense 100% of the equipment cost in the first year of ownership.

##### *Interest Expense Deduction*

The TCJA now places limits on deductions related to interest accruals and payments made on debt in a given tax year. Unfortunately, this can negatively affect heavy borrowers and those investing in business growth and expansion activities. Equipment leasing might help to offset the pain, however, because rental payments arising from a lease are not included in this calculation.

##### *Alternative Minimum Tax*

The repeal of the corporate AMT was cause for celebration for many organizations. In the past, those paying AMT seemed to automatically benefit from a tax lease equipment acquisition strategy, as capital asset depreciation was an AMT preference item. This meant

that equipment depreciation benefits were effectively neutralized and had little value for AMT payers.

##### *Net Operating Loss Carryforward*


Net operating loss carryforward generated in 2018 or later can no longer be carried back (with certain natural disaster exceptions) but can now be carried forward indefinitely. However, NOL will only reduce taxable income by up to 80% a year.

##### *Section 179*

Traditionally, Section 179 allowed businesses with limited capital acquisitions to expense 100% of the cost of new and pre-owned equipment in the first year of ownership. Owners could expense up to \$500,000 in cost, so long as the business' total equipment investment for the year did not exceed \$2 million. For investments totaling more than \$2 million, the deduction declined on a dollar-for-dollar basis.

The TCJA permanently increased the deduction to \$1 million beginning in 2018, on an equipment investment limit of \$2.5 million. Section 179 has always applied to new and pre-owned equipment purchases — previously a significant distinction from bonus depreciation. However, the new tax reform changes to Section 179 are both permanent and now applicable to a broader set of assets.

#### **WEIGHING THE BENEFITS**

Equipment financing can be used as a strategic tool. It allows plumbing businesses to not only acquire and employ assets immediately, but also develop a plan to achieve long-term goals. Whether the objective of your business is to enhance cash flow or optimize tax savings — or both — an in-depth analysis of your equipment acquisition strategy is necessary. Assessing your business' current and future asset needs in the form of a lease versus buy analysis can help determine whether a lease or loan is the best alternative for your company. 

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*Chris Fowler is vice president – industrial equipment and specialty vehicles for Key Equipment Finance, which provides financing for a wide range of heavy equipment and is backed with decades of industry experience. He can be reached at [chris.fowler@key.com](mailto:chris.fowler@key.com) or 937-285-5361.*



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# Getting the Most From Your Vacuum Pumps

The wheels still roll, but lose suction power and your truck might as well be dead on the side of the road. A proper maintenance plan will keep you pumping on the busy days ahead. *By Jared Raney*

**A** vacuum pump is the beating heart of your septic service truck. You pull the lever and expect it to work hard and perform reliably every day. As such, a solid preventive maintenance routine is the key to avoid unexpected — and costly — breakdowns.

Fred Hill, owner of Washington, D.C., Gotta Go Now, committed to a rigorous routine pump maintenance schedule early on for his portable sanitation and pumping company, and the savings he reaped are impressive.

“I didn’t do it the first year, and that forced me into a position where I ended up buying pumps to replace,” Hill says. “After that I said, ‘Hey, we can do preventive maintenance and save a ton of money,’ and at that point we put into place the regular maintenance program to keep us from having to buy pumps all the time.”

As important as knowing the proper steps to take is building a routine and getting drivers to commit to that schedule.

“When the truck drivers arrive in the morning, they’re required to do their pretrip, and part of that is to drain down the pumps if they hadn’t done it the day before,” Hill says. “Sometimes they come (back to the shop) pretty late, so I don’t ask them to do it every evening. But at least before they go out the next morning, they need to drain down the catch reservoir and then refill the fill tank with clean oil, thereby keeping the pump ready to use.”

## CAN’T TAKE THE HEAT

The foremost downfall of vacuum pumps is overheating, and a single maintenance item — possibly the simplest of all — is often responsible.

“A big factor that we’re finding to be a problem is people aren’t cleaning the pump, and they’re letting mud build up on the pump,” says Todd Devcsery, national sales manager with Fruitland. Many pumpers are in the habit of keeping their pumps clean, but a refresher for your drivers is always a good idea.

“Don’t let mud build up on your pump. It’ll act like a blanket. Even if your pumps are liquid-cooled, they still need some ambient cooling, and air-cooled pumps rely on heat dissipation. If you’ve got a half-inch of mud built up on it, it’s not going to allow the heat to escape — heat is one of the biggest enemies of the pump,” says John Gilbert, sales manager with pump manufacturer Masport. “Externally, cleaning the pump is literally just pressure-washing like at a car wash.”

Ensuring that the pump is properly oiled can be a factor in overheating, but lubrication also contributes to the longevity of many pump components and efficient pump operation. An often-overlooked piece of pump care is the oil pump. Oil consumption testing can tell you whether the oil pump is operating properly. If it’s not, it could be catastrophic for the pump.

“Without any oil getting to the vanes, the pump will overheat. The friction will be too great inside the pump, and then it will not operate and it will fail,” Devcsery says.

Leaks are another big danger. Undetected leaking can potentially lead to damaging increased friction inside the

“Vanes come in different thicknesses and heights; different pump manufacturers should have a wear tolerance on it, as far as when they need to be replaced. It’s kind of like brake pads. If it gets below a certain amount of wear, you want to replace them.”

*John Gilbert*



pump, but it can rob the pump of its ability to create adequate vacuum to get the job done.

“Most people don’t realize this: Without a sealed environment — I mean hermetically sealed, perfectly sealed, 100% sealed — a vacuum truck does not work,” Devecsery says. “A lot of the drivers don’t take that into account.”

Along with regularly checking seals and gaskets for leaks, a simple way to encourage a maintenance mindset is to have drivers routinely check pressure and vacuum. Testing the system with a small amount of pressure and vacuum for 10 minutes before leaving the shop can help catch issues before they cause downtime, and doing it regularly can help catch issues before they become more serious.

## KNOW YOUR PUMPS

Unfortunately, pump care isn’t as simple as occasionally giving them a thorough cleaning. Knowing how to run the pump is also key in promoting its longevity. One common misunderstanding is that the relief valves are not typically preset by the manufacturer or builder on vacuum systems.

“Vacuum relief serves adequate air into the tank: The vac relief starts sucking air in and produces what we call air conveyance, and then it pulls the product into the tank,” Devecsery says. “You need to have air to create pressure, and you need to have a relief to allow the system to operate effectively. This is the key caveat of the whole deal: They’re not set. So a person gets a brand-new piece of equipment and the reliefs aren’t set at all. They have to know how to set them.”

Not only can improper settings cause periodic issues on the job site, such as inefficient loading or even pump failure, but they can do more damage over the long haul.

“Knowing your pump speed and knowing to operate the pump at the right speed are crucial for the life of the pump and overheating,” Gilbert says. “Have the vacuum or pressure relief valves at the right settings; number one, don’t exceed the maximum continuous recommendation for the pump. And then don’t set it too high for the actual work you need. Say one of our pumps can run at 25 inches of vacuum continuously — yes, it’ll do that all day long, but that’s kind of like redlining your car all day long. If you don’t need it, don’t use it, because the higher vacuum and higher pressure just creates more heat.”



▲ John Gilbert, sales manager at Masport, demonstrates vacuum pump teardown and inspection during the 2019 Portable Sanitation Association International conference. (Photo by Jim Kneiszel)

## START A ROUTINE

One easy tip for incorporating pump maintenance into existing schedules is to tie certain preventive items to planned truck maintenance. For example, Fruitland recommends a checklist of pump maintenance to coincide with truck engine oil changes:

- Set or check the relief valve.
- Full pump flush.
- Check, empty and clean oil reservoir; adjust oil pump if necessary.
- Check rotation speed of pump with laser tachometer.

Some contractors, such as Gotta Go Now, choose to schedule pump maintenance by time intervals: daily draining of catch reservoirs and refilling of fill reservoirs; flushing and seal/leak check monthly; and full teardown, component replacement and rebuild annually.

Taking the pump apart occasionally for visual inspection ensures that secondary wear isn’t occurring on the vanes. Beyond the expected tip tolerances, vanes can wear and cup in the center or become pitted and “mushroomed,” not all of which can be seen from inspection ports.

“Personally, I’d rather see the pump opened up for a visual inspection of the whole vane,” Gilbert says. “Checking the height is one thing, but actually looking at the vanes — there’s other underlying issues that can happen. You can get dimples in the vane slots that’ll make the vane hang up and wear at an angle. If there’s any glazing on the tips, you can tell the pump has been running with a lack of oil or running too hot.”

Gilbert actually recommends flushing on a weekly basis, but it depends on manufacturer recommendations for individual pumps and the amount of use a pump sees day to day. Masport has a series of video resources on its website with flushing guidelines, as well as its recommendations for time-interval maintenance.

“In a perfect laboratory world, theoretically, oil should be coating every surface and the vanes should never really wear out,” Gilbert says. “Some jobs are worse than others, but a lot of the systems do ingest dust and dirt, you get liquid carryover, and that creates wear. Down the road, that’ll lead to oil leaking. Maintaining the components is key for keeping your pump alive.”

## VANE BASICS

Vanes naturally rub against the inside of the pump casing during operation, and if the pump isn’t flushed and oiled properly, vanes wear out more quickly. And no matter the diligence in maintenance, some material carryover is inevitable, so vanes may still need to be replaced occasionally.

“Vanes come in different thicknesses and heights; different pump manufacturers should have a wear tolerance on it, as far as when they need to be replaced,” Gilbert says. “It’s kind of like brake pads. If it gets below a certain amount of wear, you want to replace them.”

While vanes used to be made of asbestos-based materials, modern versions are typically made of Kevlar and phenolic resin. It’s a durable material, but its resilience shouldn’t be taken for granted.

Vacuum pumps can have anywhere from three to eight vanes in a variety of sizes and tolerances.

“You want to keep it within the manufacturer’s spec. Differences in materials grow completely different under heat and your tolerances change,” Gilbert says. “Looking at some of our vanes, 3/8 of an inch is the maximum height wear you want before replacing them.”

When it comes to replacements, most pump companies will sell vane sets, and some will offer full rebuild kits with vanes, bearings, gaskets and seals.

It can be tempting to put this maintenance on the back burner, but it can have a catastrophic effect on the pump if neglected.

“If it gets to a point where it’s not going back in the slot like it should, it’ll break in half,” Gilbert says. “The vanes will fall out of a slot. Then once they wedge up in the top of the cylinder, you’re going to break something cast iron.”

## JUST DO IT

There’s perhaps no better way to bring home the point about pump maintenance than comparing the ages of pumps: maintained versus not. Hill says in the early days of his company, before establishing his maintenance program, one of his pumps failed after only about 16 months. Gilbert hears from many customers whose pumps failed after only a handful of years.

On the other hand, lasting a decade is a cakewalk for a well-kept pump, experts say.

“I have a pump right now that is 14 years old and is still being used,” Hill says. “If you go out and buy a pump, you’re out \$3,000, \$4,000 because you didn’t set up a maintenance program, which you’re only spending a couple hundred dollars on annually.”

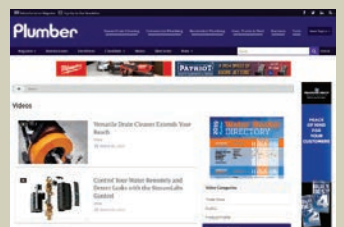
The bottom line is that proper pump maintenance for a fleet of vacuum trucks can save pumping companies thousands of dollars over the years.

“Keeping the pump clean, flushed out — that can extend the pump life, keeping your repair costs and downtime costs low,” Gilbert says. “The pump is basically the life of the truck, so if it’s not working, you have a whole vacuum truck that’s basically unusable. You depend on the pump every day.” **P**



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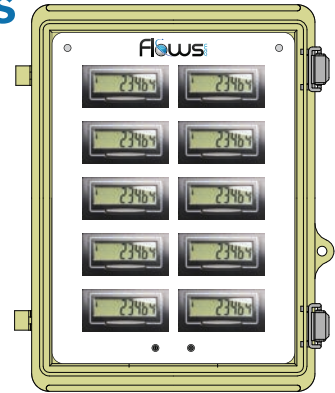
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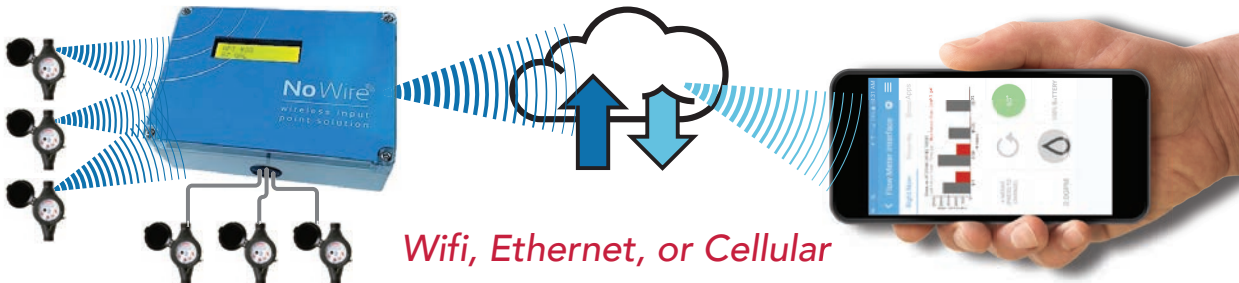


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Rodney Koop

# Treating Customers Right

Perception is reality for customers, and clear communication will reinforce that you respect them and appreciate their business

By Rodney Koop

**I**t's not often that you get a chance to rip off a customer a second time. I suppose that's because most people don't call you again when they feel they were taken advantage of. So, is it a myth that people feel the service person is just there to rip them off? Have they been ripped off before? Or is it simply a figment of their imagination?

It really doesn't matter if they have or have not been ripped off. What matters is that they think they have. If they think they have, then you get the evil eye.

I have to laugh about a customer in the Washington, D.C., area who told me and the technician as soon as we got out of the truck that he would be watching us very closely so we wouldn't steal anything. He also said he was concerned we might sabotage something just to get more work. He never even noticed when I ran the screwdriver down the side of his Porsche, but I'm betting he did later.

OK, I may have made up the part about him thinking we might sabotage his stuff, but the part about him meeting us on the driveway to say he would be watching us is absolutely true.

## SMOOTHING THINGS OUT

In this case, I remembered many times when I regretted doing work after the service call just started out wrong. So, I decided to stop the call and clear the air.

"Mr. Customer?" I asked. "Could I ask you a question?"

He told me to go ahead, so I asked him this question: "Mr. Customer, did Jim or I or someone at our company treat you wrong sometime in the past? Is there some way that one of us offended you or in some way took advantage of you?"

"Why no!" He said, "What makes you say that?"

I continued, "Well you said that you would be watching to see if we might steal something, so I wondered what

one of us might have done to make you feel that way."

"Oh, no," he said, "it wasn't anyone from your company! It was that guy who delivered my new refrigerator. When he left, I noticed my favorite coffee cup was missing, so I decided that from now on I would watch closely when anyone new comes into my house. I hope you didn't

*Most customers are like us when we need something: We didn't come for an education — we came to have a problem solved by someone who we felt we could trust.*

think I meant that I didn't trust you or don't want you to actually work in my home. I am so sorry if I made you feel that way!"

Right then my eyes teared up just a little as I was feeling really bad about that thing with the screwdriver.

"Well," I said, "Jim and I are here to help with your heating system. How about you tell us what's happening?"

From then on, the call went well. It turned out Mr. Customer was just a little bit concerned because he knew he had very little knowledge about heating systems, and he thought he might need to understand all about how his furnace worked so he would know what to have us do. We quickly put his mind at ease by telling him we didn't want his family to be cold tonight, so we'd take a close look at what his furnace was doing and find out why it didn't want to heat the home.

## BUILDING TRUST

Our little conversation turned out well. And when we informed him that his furnace wasn't coming on because the ignition system had a problem, he quickly chose one



of our options that included replacing the parts that were causing the problem, plus a complete service and inspection of all the system's components.

I tell this little story to remind myself that many times in the past I thought I had to go in and teach customers how their equipment worked by using technical terms, pictures and diagrams and taking a lot of time. But most customers are like us when we need something: We didn't come for an education — we came to have a problem solved by someone who we felt we could trust.

So, here are four lessons I have learned:


- If I, the contractor, assume the customer is going to want a lot of detail about what I need to do to solve their problem, I am wrong 90% of the time. They usually just want it done.
- If the customer assumes I will think they are dumb because they don't understand what needs to be fixed, they are wrong 90% of the time. I don't expect them to be the expert that I am.
- If a spouse is asking for details, often they just want to be able to answer the questions they know their husband or wife will be asking when he or she gets

home. They don't want or need a lot of detail, just what had to be done and if it's fixed.

- If I, the contractor, am afraid they will think I am overpriced, get out the screwdriver. Hold the phone, just kidding on that one, too. But I will say that the solution to this concern is to explain your work as an entire system, not just a part. "Mr. Customer, for the entire system to work from beginning to end, we need to make sure we completely solve your problem and also run the entire system before we leave to ensure it's right the first time."

## HAPPY CUSTOMERS

It's really about making friends and wanting them to be happy when you leave.

About the screwdriver thing with the Porsche, I'm sure you took that with a grain of salt, didn't you? 

-----  
*Rodney Koop is a founder/CEO of The New Flat Rate. For more information, visit [www.thenewflatrate.com](http://www.thenewflatrate.com).*

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# Product Spotlight

Faucet provides an 'industrial chic' look

By Craig Mandli

Combining warmth and masculinity, industrial chic is a style of decorating that keeps gaining popularity. While it used to be reserved for converted lofts and factories, the style is now being seen in all kinds of buildings — both urban and rural. It combines utilitarian design with worn textures and the warmth of raw, aged woods. This nod to the industrial revolution is all about mixing raw materials (galvanized metal, glass and reclaimed woods) while keeping the shapes and silhouettes relatively simple.

Isenberg Bath captures the essence of this style with the Tanz faucet. Notable for its sleek lines and curves, this faucet takes inspiration from the unexpected beauty of plumbing mechanics to create an abstract sculptural look designed to make it stand out in the kitchen.

"We're quite proud of Tanz, both from an aesthetic and functional point of view," says Abbas Poonawala, director of sales and marketing for Isenberg. "The look is very versatile and complements modern and traditional settings equally well."

As part of Isenberg's Klassiker collection, Tanz is available in an array of durable finishes. Options include traditional metallics, as well as 20 thin-film, ceramic-based



finishes ranging from glossy white and black to soft shades of green and brown, as well as bolder hues such as crimson and navy blue. Singular color options combined with a striking silhouette make this faucet a dramatic focal point in fashion-forward kitchens.

According to Poonawala, Isenberg maintains an extensive

design lab at its Dallas-based corporate headquarters, equipped with 3D modeling software. It was here that the Tanz faucet was prototyped and perfected. Crafted from stainless steel, the faucet includes fine ceramic disc cartridges for smooth lever movement and an eco-friendly design with 1.8 gpm flow rate.

"But the Tanz is about more than just good looks," Poonawala says. "It was built to perform with a rotating projection spout and a side sprayer to handle the most rigorous kitchen duties."

The Tanz is a smart and beautiful choice for today's busy kitchens, according to Poonawala. The key to achieving a no-frills industrial chic look is simplicity. As such, it is suggested to avoid excess accessories and keep only what's needed. The company suggests completing the look with a matching soap dispenser for a cohesive design space. **888-342-2284; [www.isenbergfaucets.com](http://www.isenbergfaucets.com).**

## General Pipe Cleaners Speedroooter XL

The Speedroooter XL from General Pipe Cleaners clears tough clogs in 3- to 10-inch lines up to 200 feet. Now with easily interchangeable drums, the rugged, easy-to-manuever Speedroooter XL sports a powerful 3/4 hp motor and 100-foot-capacity drums for Flexicore cable. To change drums to add cable lengths or swap cable sizes, loosen three knobs and remove the drum. Switch between 3/4- or 5/8-inch cables in the large drum design or substitute the small drum with 100 feet of 1/2-inch cable for smaller lines. The see-through inner

cage lets you quickly gauge how much cable remains. The adjustable-height, swept-back handle provides maximum maneuvering leverage. The durable design features a braced frame at key stress points, as well as front and rear drum supports for longer bearing wear. **800-245-6200; [www.drainbrain.com](http://www.drainbrain.com).**





## RIDGID K9-306 drain cleaning machine

The K9-306 FlexShaft drain cleaning machine from RIDGID is designed to clean 3- to 6-inch-diameter drainlines up to 125 feet. It can clear blockages while simultaneously inspecting with a camera, completing two jobs at once.

The K9-306 quickly clears grease buildup, roots and heavy scale in larger pipes. It features a 1.5 hp internal universal motor for maximum power and longevity; a fully enclosed drum to minimize setup and cleanup time; and a retractable handle with multiple wheels and grab points to make loading, unloading, transporting and storage easy. **800-769-7743; www.ridgid.com.**



## Mohawk Lifts ML-220 two-post lift

The model ML-220 from Mohawk Lifts is a new 20,000-pound-capacity two-post lift. Designed with three-stage arms, the lift is designed for the lifting points of medium-duty work trucks or retracting to service short-wheelbase vehicles. With a direct-drive, all-hydraulic lifting system and no overhead cable covers, the ML-220 ensures it can fully lift high-profile vehicles. The lift includes full sets of truck adaptors for servicing all vehicles. **518-842-1413; www.mohawklifts.com.**



## Electric Eel eCAM Ace 100-Micro camera system

The compact eCAM Ace 100-Micro pipeline inspection camera system from Electric Eel performs quick inspections in pipes ranging from 1 1/2 to 3 inches in diameter and up to 100 feet in length. The system comes equipped with a 512 Hz transmitter and a resettable, on-screen footage counter. The video is streamed directly to any mobile device, which can be used as a monitor. Audio and video can also be recorded to a mobile device. Files can be transferred via email or text or to the cloud. **800-833-1212; www.electriceel.com.**



## Viega MegaPress 316 FKM line of fittings

MegaPress 316 FKM fittings from Viega are suitable for use with hydronic applications, compressed air, industrial gases, marine applications and other harsh environments.

Available in sizes from 1/2 inch to 4 inches, they save labor costs and system downtime. The fittings are offered in configurations including elbows, couplings, no-stop couplings, reducers, tees, reducing tees, adapters, unions, caps and flanges. The line comes with Smart Connect technology, which makes it easier to help identify unpressed connections. **800-976-9819; www.viega.us.**

## Matco-Norca frostproof sillcock valves

Matco-Norca's lead-free, cold-expansion PEX frostproof sillcock valves for outdoor use come in lengths ranging from 4 inches up to 14 inches. The valves have an anti-siphon feature to prevent water siphoning and protect potable water systems, and they are frostproof to prevent freezing. They connect to 1/2-inch ASTM F1960 PEX systems. They are UPC approved and also conform to ASSE 1019, ASTM F1960, CSA and NSF61 standards. The valves have a pressure rating of 125 psi nons shock and a temperature rating of 180 degrees F. **800-431-2082; www.matco-norca.com.**



## Bradley commercial-use Verge dispensers and faucets

Bradley's line of matching Verge soap dispensers and faucets offer cohesive and striking designs that further enhance the look of Verge washbasins and work seamlessly with any other basin. With advanced sensing technology for reliability and durability, the Verge soap and faucet pairs come in a collection of four styles and six finishes. For high-traffic applications that use multiple hand-washing stations, a top-fill multifeed soap system supplies soap to up to six dispensers at once. The system includes a translucent ring that illuminates when the tank begins to run low on soap or power. **800-272-3539; www.bradleycorp.com.**



## A.O. Smith Water Heaters gas tankless units

A. O. Smith Water Heaters' new residential gas tankless product line with X3 scale prevention technology extends the life of the unit and maintains like-new performance without requiring regular scale-related maintenance. By eliminating scale-related maintenance, there is no need for isolation valves. The combustion system operates on a 1/2-inch gas line and vents with 2-inch PVC. The units are available in three sizes with maximum Btu/h inputs of 160K, 180K and 199K. All models come with an integrated recirculation pump, providing the benefit of instant hot water. **800-527-1953; www.hotwater.com.**



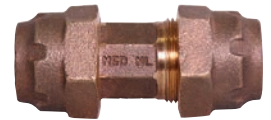
## Webstone, a brand of NIBCO, E-X-P tankless water heater service valves

The E-X-P ultracompact tankless water heater service valves from Webstone, a brand of NIBCO, have a design that allows the valves to be installed in tight locations. Hot and cold valves feature dezincification-resistant, lead-free brass with 3/4-inch FIP or SWT end connections. Optional accessories are also available to meet a variety of installation needs. **800-225-9529; www.webstonevalves.com.**



## A.Y. McDonald Ranger fitting

A.Y. McDonald's Ranger fitting has a unique design that allows it to assemble onto multiple ranges of nominal pipe diameters from CTS up to PVC. It is available in 3/4- or 1-inch sizes and is applicable for underground and above-ground potable water systems. It is constructed of no-lead brass and has internal components such as a 301 stainless steel grip ring, brass friction ring and an EPDM rubber gasket. The Ranger complies to all the necessary industry standards, such as AWWA C800-14. **800-292-2737; www.aymcdonald.com.**



## Milwaukee Tool PEX Crimp Jaws for F1807 and F2159 PEX

Milwaukee Tool's new PEX Crimp Jaws are engineered to provide an easy-to-use solution for PEX crimp installations, eliminating the repetitive strain of other hand tool solutions. The jaws are equipped with spring-loaded opening grips for precise alignment to the fitting and a green-light completion indicator on the press tools. With an easy-open, in-line design, the jaws are compatible with F1807 and F2159 connections and will be available in 1/2- to 1 1/2-inch sizes for the M12 FORCE LOGIC press tools and 1/2- to 2-inch sizes for the M18 FORCE LOGIC press tools. **800-729-3878; www.milwaukeetool.com.**



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Anja Smith

## A Winning Algorithm

Teaching staff why you do things the way you do will help them better learn the job and the business

By Anja Smith

**Y**our employees and customers come to you for solutions all day long. Wouldn't it be nice if someone could hand us similar answers to all of our complex business problems?

As much as we want that miracle solution, there is no single formula for success. Formulas follow strict rules, which is why  $A+B=C$  works every time. A formula is too simple and our businesses too diverse.

Instead of approaching your business like an algebra problem, consider a more modern approach. A handful of tech companies have changed society with their algorithms. It's fascinating — and a little scary.

I wanted to understand how algorithms worked. Turns out, an algorithm is a logic process. It is more fluid than

Consistent excellence is the bedrock of a successful plumbing business. It leads to a reputation that gets you hired. The best plumbing entrepreneurs can deliver, but many shops struggle to sustain excellence as they grow.

a formula. Where a formula commonly has one answer, an algorithm has an array of answers. It operates more like a decision tree than a set of rules.

You can love or hate what Google has done to the plumbing industry, but you can't deny its influence on us, and the world. All that power started with an algorithm.

I can say to my phone, "Hey Google, how do I live without you?" and my results will be as diverse as a LeAnn Rimes video, a codependency support group, and a relationship advice article titled "17 Signs He Can't Live Without You." Your results may differ.

Consistent excellence is the bedrock of a successful plumbing business. It leads to a reputation that gets you hired. The best plumbing entrepreneurs can deliver, but many shops struggle to sustain excellence as they grow.

But what if we could apply a logical process, rather than a formula, for training our employees? We could keep the nimbleness of a small shop without working ourselves to death as a decision bottleneck in our business.



▲ This example chart shows how algorithms are built. Employers can teach employees why they do something, which will lead to them better understanding the job. (Photo courtesy Canva)



Here's the cool part: This doesn't mean giving your staff a free-for-all. Algorithms control the set of results. Nothing shows up on Google that the alphabet company doesn't want you to see. They make the rules in their organization, and so should you.

Don't let the Silicon Valley references intimidate you. This may sound technical, but in reality, algorithms mimic your brain's thought patterns. Your business' logic trees won't be so complex that you need a kid in a hoodie to write the code.

All we are doing is laying out a path for decision-making. You are literally teaching your employees how to think like you. I promise that isn't an impossible task.

We do this mental computing every day. Consider how you get dressed in the morning. You narrow down your options within seconds, processing questions and answers without conscious thought. Is it a workday: Yes or no? Is it hot outside? Is it cold outside? Is it raining? Do you have any meetings scheduled?

Your brain shortcuts these thoughts in a few seconds because getting dressed is a task we've been doing nearly our entire lives. Yet at one point, our parents taught us how to reason our way through the decision. The process got ingrained and now comes easily.

They call this logic sequencing. Teach your staff the mental code you used to process your logic sequence. Over time, you'll be able to stop answering the same questions repeatedly. It's scary to allow employees to make independent judgments. This fear leads to micromanagement or oversimplified policies. Neither is good for business.

If you rely on owners or supervisors to make every judgment call, it creates a growth bottleneck, frustrated workers and burnt out leaders. Sweeping rules may be easy to implement but lead to customer dissatisfaction. Your company isn't a big-box store or a major corporation. So don't act like one.

Use the algorithm method to encourage critical thought at all levels of your organization. It frees managers' time to focus on the important work rather than putting out fires all day.

Here's how to get started:

1. When an employee comes to you for help, view it as a training opportunity.
2. Answer their questions, but share your decision-making process with them. Note: Don't expect it to stick

the first time! This is not a quick fix.

3. After a while, ask them for their solution rather than answering the question. Probe them about how they got to that answer. Encourage and correct as needed.

If you want to take it a step further, track common questions. For these key processes, document your logic sequence in a flowchart. This will give employees access to your brain, even when you aren't around.

Adjusting to this approach takes some time and effort. If you can get the hang of it, your team will learn self-reliance and you might even take a vacation. **P**

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*Anja Smith is the managing partner at All Clear Plumbing and writer/speaker at Tradebiz Toolbox. Contact Anja at [www.tradebiztoolbox.com](http://www.tradebiztoolbox.com).*

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By Craig Mandli

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### Norweco Singlair TNT

The **Singlair TNT** (Total Nitrogen Treatment) system from **Norweco** is an advanced wastewater treatment system designed to reduce total nitrogen by more than 68%. Certified performance data from NSF Standard 245 verifies that average effluent contains 7 mg/L nitrate, 12 mg/L total nitrogen, 4 mg/L CBOD5 and 9 mg/L TSS. The system offers flow equalization, effluent filtration and low electrical usage. It is designed for easy installation, operation and maintenance to minimize effluent nitrogen concentrations, according to the maker. Nitrogen reduction is achieved without requiring effluent recirculation or the addition of chemicals. All treatment is accomplished in the tank. 800-667-9326; [www.norweco.com](http://www.norweco.com).



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## Pumps

### Ashland Pump effluent pumps

Heavy-duty effluent pumps from **Ashland Pump** are available in multiple horsepower sizes for various performance requirements, with efficient permanent split-capacitor motors. The oil-filled pumps have an upper and lower ball bearing design and handle up to 3/4-inch solids. They are made of cast iron, with cast iron impellers and equipped with a piggyback switch (20-foot standard cord) or in manual configurations. They are offered in 3/10, 2/5, 1/2, 3/4, 1 and 1 1/2 hp models. **855-281-6830; [www.ashlandpump.com](http://www.ashlandpump.com).**



### Pentair Myers MDC cast iron pumps

MDC cast iron pumps from **Pentair Myers** are known for their durability and are designed to operate in a variety of installations, providing homeowners peace of mind knowing that their home, belongings and family are protected. Multiple configuration options are available, including a variety of construction types, switches, volume and horsepower choices. Every aspect of the sump pump — from the pump mechanism to the seals, valves and controls — is built for heavy-duty operation. **888-416-9513; [www.pentair.com/myersresidisposal](http://www.pentair.com/myersresidisposal).**



## Lift Station/Component

### Hydra-Flex Marksman

The **Marksman** from **Hydra-Flex** is a 0-degree, static, linear flow nozzle designed to clean lift stations. Its accurate, controlled water flow at a long distance (over 20 feet) allows for maximum impingement on hard surfaces to remove debris. The precisely controlled flow allows the user to hit areas that need cleaning and not damage costly electrical components. **952-808-3640; [www.hydrflexinc.com](http://www.hydrflexinc.com).**



### Polylok PL-CPE4A

The **Polylok PL-CPE4A** is a submersible, 4/10 hp, 115-volt, single-phase effluent pump with a 2-inch NPT vertical discharge. It has a maximum head of 38 feet and a maximum flow of 56 gpm. The pump is designed with a 3,450 rpm oil-filled permanent split-capacitor motor and has an amp rating of 6.6 for 115 volts, a rugged cast iron housing and volute equipped with a cast iron vortex impeller capable of passing 3/4-inch-diameter solids. The stainless steel shaft is supported by two single-row, oil-lubricated ball bearings. The shaft seal is an inboard design with a secondary Exclusion V seal. It has a 20-foot UL/CSA-listed power cable suitable for submersible service and fitted with a three-prong plug. The unit is supplied with an integrated clip for the included piggyback mechanical float switch and used for automatic operation. **888-765-9565; www.polylok.com.**



### Infiltrator Water Technologies IM-Series Tanks

Injection-molded **IM-Series Tanks** from **Infiltrator Water Tech-**

**nologies** are available in multiple sizes including the IM-540 pump tank, IM-1060 and large-capacity IM-1530 septic tank. Lightweight, strong and watertight, the tanks enable shallow, multiple and serial tank installation options in septic and pump applications. All have integral heavy-duty lids that interconnect with the watertight click-and-lock EZsnap riser. The tanks also have structurally reinforced access ports, reinforced structural ribbing and fiberglass support posts to provide additional strength. The two-piece tank design nests for efficient shipping, and inboard lifting lugs make delivery and handling easier. The tanks frequently house advanced wastewater treatment systems such as the ECOPOD fixed-film bioreactor system or the ECOFILTER pump vault tank filtration system. **800-221-4436; www.infiltratorwater.com.**



## Septic Tanks

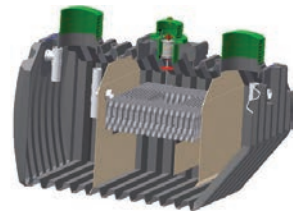
### Den Hartog Industries low-profile septic tanks

Low-profile septic tanks from **Den Hartog Industries** are designed to provide safe and durable storage. The tanks are furnished with multiple fitting locations for a variety of plumbing configurations and two openings for buried lids or access/inspection risers. They are available with one or two compartments with capacities of 1,000, 1,200 or 1,500 gallons. They may be backfilled empty and have sectional ribbing designed to sustain vertical soil pressures of up to 500 psf at a maximum soil depth of 36 inches. **712-752-8432; www.denhartogindustries.com.**



### Jet Inc. J-500-800PLT

The **J-500-800PLT** plastic tank from **Jet Inc.** offers a lightweight alternative to concrete J-1500 Series BAT Media Plants. Treatment capacity is variable from 500 to 800 gpd. They are rotational molded out of lightweight polyethylene for a seamless tank with maximum strength and durability. They are easy to transport and install in difficult site conditions. **800-321-6960; www.jetincorp.com.**



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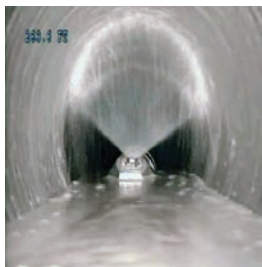
## Septic Tank Components



### Century Chemical Bio-Tab

Bio-Tab from Century Chemical sinks to the bottom of a septic tank where buildup problems begin. Its time-release technology is designed to

gradually dissolve and create a growing area of activity at the bottom of the tank. There, self-reproducing bacteria and enzymes quickly grow as they digest and liquefy the organic waste. The tablet establishes itself by working from the inside out. Regular use, combined with routine pumping, is designed to help maintain a septic system in good working condition while also helping maintain the proper level of bacterial action and reducing odors and gases. 800-348-3505; [www.bio-tab.com](http://www.bio-tab.com).



### RootX chemical root control

Chemical root control from RootX is a long-term solution to pipeline 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. Environmental Protection Agency 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](http://www.rootx.com).



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# Septic and Sewer Systems

By Craig Mandli

## GSF system a fit for site with compacted soil



**Problem:** A two-bedroom home in Lawrence County, Indiana, had a failing system with effluent surfacing around the tank. The site has areas with drainage issues, and previous structures on the property created compaction in the soil in the remaining usable area.

**Solution:** The compacted soils were removed and replaced with 20 inches of Indiana Department of Transportation Spec 23 sand. An Eljen GSF (Geotextile Sand Filter) bed system was able to be designed with an application rate of 0.25 gallon per square foot in the available area, and it has less overall height than a traditional mound. The drainfield consists of 24 A42 GSF units installed in three rows spaced 3.5 feet apart. The overall bed dimensions are 41 by 20 feet. The drainfield final elevation is above grade and is flood dosed.


**Result:** A code-compliant system was installed on the difficult site. The GSF system manages biomat buildup, helping to protect the soils below, and is also able to disperse effluent over the slow soils. **800-444-1359; www.eljen.com.**

## Combined treatment and dispersal system solves multiple challenges



**Problem:** A replacement drainfield was needed for a three-bedroom Wisconsin residence on a lot with a seasonally high water table of 36 inches at grade, limited usable space due to compacted soils, and an old, leaking tank that had infiltration issues adding to the drainfield outflow.

**Solution:** A 450-gpd combined treatment and dispersal **Advanced Enviro-Septic** treatment system from **Presby Environmental** was designed by Warren Hohn and installed by Eric's Septic Service. Sizing was based on 150 gpd per bedroom. Specification of the system enabled a drainfield size reduction and produced better-quality effluent to accommodate the high-water table. The system removes up to 99% of wastewater contaminants without using any electricity or replacement media. The system footprint is a 17-by-32-foot basal area with a 12-by-32-foot treatment area. The installer removed 12 inches of native soil and replaced it with 12 inches of CSS mound sand. The native soil has a loading rate of 0.5, and the AES system allowed loading of the system at 1.0, reducing the footprint.

**Result:** The engineer found the AES component manual helpful and was pleased with the system footprint reduction achieved. Regulators were happy with the overall system installation process and the quality of the effluent returned to the soils. **800-473-5298; www.presbyeco.com.** 



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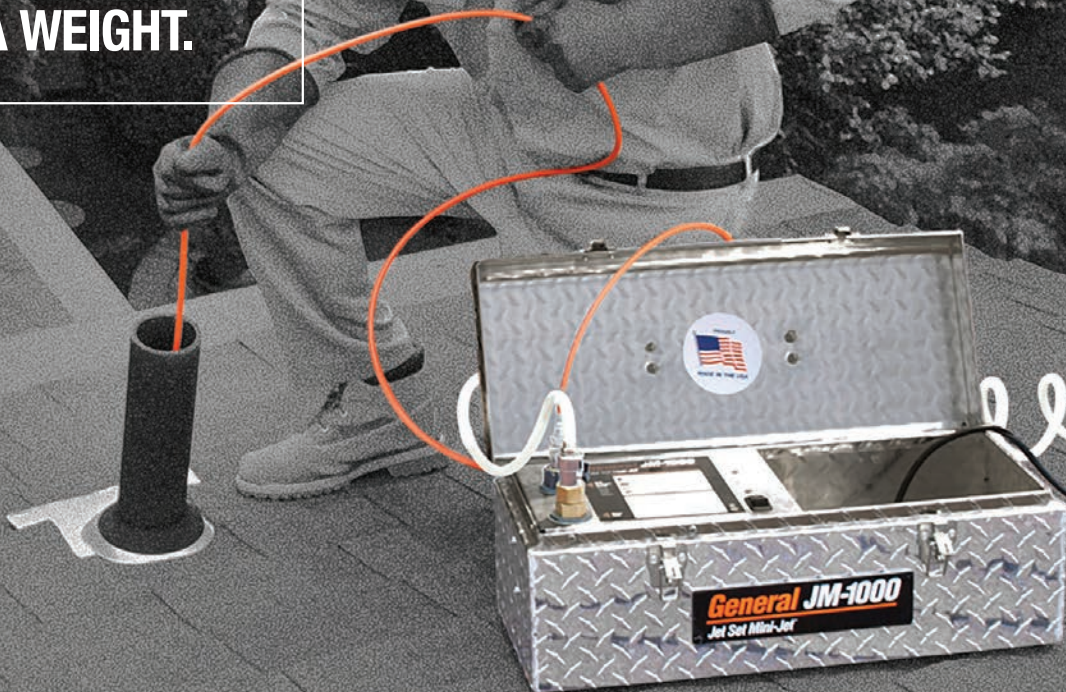
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