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PROFESSIONALS

SAFETY  
FIRST  
/ 48

## AT YOUR SERVICE

OVER THE PAST DECADE, EQUIX INTEGRITY HAS GROWN FROM A CROSS-BORE INSPECTION FIRM WITH ONE LOCATION INTO A DIVERSIFIED COMPANY PROVIDING WATER AND WASTEWATER SERVICES ACROSS THE COUNTRY / 38

### STRENGTH IN NUMBERS

WISCONSIN CONTRACTOR TAKES  
ADVANTAGE OF NETWORKING  
OPPORTUNITIES / 20



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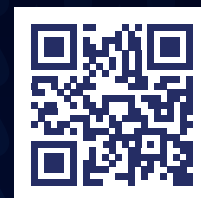


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# CONTENTS

JULY 2023

## 38 COVER STORY: AT YOUR SERVICE

Over the past decade, Equix Integrity has grown from a cross-bore inspection firm with one location into a diversified company providing water and wastewater services across the country. // By Ken Wysocky

## FEATURES

### 20 PROFILE: STRENGTH IN NUMBERS

Bontempo Plumbing & Drain Cleaning owner relies on word-of-mouth advertising and a solid network of colleagues to drive his company's success. // By Giles Lambertson

## DEPARTMENTS

### 12 FROM THE EDITOR: CROSS BORE HUNTING

Safety is at the core of cross-bore inspections, but it is also a lucrative business opportunity for contractors. // By Kyle Rogers

### 16 @CLEANER.COM

Be sure to check out our exclusive online content.

### 32 MONEY MACHINES: FULL-CIRCLE VIEW

Innovative telescoping pole camera improves Michigan contractor's manhole inspection capabilities. // By Ken Wysocky

### 48 SAFETY FIRST: AVOIDING SEWER CLEANING HAZARDS

An industry expert explains how to protect jet/vac equipment operators from some of the industry's most common mistakes. // By Dan Story

### 56 MONEY MANAGER: FUTURE FOCUS

It's never too early to look ahead and think about how the family business should work into a living trust or will. // By Joan Koehne

### 62 PRODUCT NEWS

Spotlight: Milling cutters power through the most severe blockages. // By Craig Mandli



**ON THE COVER** // Equix Integrity is one of six businesses that stand under the umbrella of Equix Inc., a nationwide construction services corporation focused on utility and infrastructure projects. Equix Integrity was established in 2012 in Minnesota to provide cross-bore inspection services, but it has since grown into a diversified operation with six more facilities in Ohio, Colorado, Florida, Texas, Maryland and Connecticut. It also now employs about 100 people and has invested millions of dollars in equipment, such as three AquaStar water recycling vac trucks from KAISER PREMIER. Andrew Undicelli, vice president; Mario Chavez, Houston area manager; and Israel Covarrubias, a project manager; pose in front of one of the company's AquaStars. (Photography by Jon Shapley)



48



20



32

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# ADVERTISER INDEX

 <b>NORTH AMERICA</b> When Quality Matters	
A.R. North America, Inc.....	34
All Jetting Technologies, Inc.....	67
 <b>ALLAN J. COLEMAN</b> SINCE 1905	
Allan J. Coleman Co.....	11, 50
American Jetter.....	66
 <b>Apex CIPP Solutions</b>	
Apex CIPP Solutions.....	53
 <b>ARIES</b>	
Aries Industries.....	49
Arthur Products Co.....	67
AZTRUX.....	61
<b>BLACKHAWK</b>	
Blackhawk Tech.....	69
Bucher Municipal North America..	36
 <b>CAM</b>	
Cam Spray.....	18
 <b>FAT</b>	
Cat Pumps.....	29
 <b>Winnelson</b> CENTRAL OKLAHOMA COMPANY	
Central Oklahoma Winnelson.....	65
 <b>COAST MANUFACTURING</b>	
Coast Manufacturing.....	61
COXREELS.....	61
Cua Claws for Resurfacing Camera Wheels.....	66
 <b>CUES</b>	
CUES, Inc.....	9
Delta Capital Group.....	10
 <b>DURACABLE</b>	
Duracable Manufacturing Co.....	7
Dynamic Repairs.....	67
 <b>EASY-KLEEN</b> PRESSURE SYSTEMS LTD. MANUFACTURER OF HIGH PRESSURE CLEANING EQUIPMENT	
Easy-Kleen Pressure Systems Ltd.....	66
 <b>EASYCAM</b>	
EasyCAM.....	12
 <b>ENVIROSIGHT</b>	
Envirosight LLC.....	5
 <b>FERRATEX SOLUTIONS</b>	
FerraTex Solutions, Inc.....	33
 <b>FORBEST</b>	
Forbest Products Co.....	69
 <b>GapVax</b>	
GapVax, Inc.....	71

 <b>General PIPE CLEANERS</b>	
General Pipe Cleaners, div. of General Wire Spring.....	2
 <b>GI INDUSTRIES</b>	
GI Industries Inc.....	51
 <b>GUZZLER</b>	
Guzzler Manufacturing.....	6
 <b>HammerHead Trenchless</b>	
HammerHead Trenchless.....	47
Hannay Reels.....	23
Hermann Sewerin GmbH.....	28
 <b>HotJet USA</b>	
HotJet USA.....	66
Hurco Technologies, Inc.....	54
 <b>IPP</b>	
IPP Solutions, LLC.....	59
JDC.....	54
K&W Products, Inc.....	66
 <b>KAISER PREMIER</b>	
KAISER PREMIER.....	37
 <b>Ken-Way Corporation</b>	
Ken-Way Corporation.....	64
 <b>LANSAS PRODUCTS</b>	
Lansas Mfg. by Vanderlans & Sons Inc.....	42 & 43
 <b>MAXLINER</b>	
MaxLiner.....	41
 <b>MRP</b>	
Milwaukee Rubber Products, Inc....	46
Milwaukee Tool.....	13
 <b>MONGOOSE JETTERS</b> BY GARDNER	
Mongoose Jetters by Sewer Equipment.....	25
 <b>NozzTeq</b>	
NozzTeq Inc.....	63
 <b>nuflow</b>	
NuFlow Technologies.....	3
OBIC, LLC.....	45
 <b>PEARPOINT</b>	
Pearpoint (USA).....	55
 <b>PICOTE</b>	
Picote Solutions.....	14
Pipeline Renewal Technologies.....	57
Piranha Hose Products.....	60

 <b>ROOTERMAN</b> TO THE RESCUE	
Premium Service Brands - RooterMan.....	19
Prime Resins.....	36
Pro-Built Tools, Inc.....	35
ProCom Headsets.....	10
 <b>Ratech</b>	
Ratech Electronics, Ltd.....	14
 <b>RODDIE</b>	
Roddie Inc.....	46
 <b>ROOT RAT</b> NOZZLES	
Root Rat.....	54
 <b>ROOTX</b>	
RootX.....	60
 <b>SECON</b>	
SECON.....	63
SewerProShop, LLC.....	65
 <b>SPARTAN TOOL</b>	
Spartan Tool LLC.....	72
SubSurface Locators, Inc.....	36
 <b>Superior SMOKE</b>	
Superior Signal Company LLC.....	66

 <b>T&amp;T TOOLS, INC.</b>	
T&T Tools, Inc.....	66, 67
 <b>THE CABLE CENTER</b>	
The Cable Center.....	17, 63
 <b>THE SEWER CAMERA CONNECTION</b>	
The Sewer Camera Connection.....	58
 <b>TROJAN WORLDWIDE INC.</b>	
TROJAN WORLDWIDE INC.....	52
TruGrit Traction Inc.....	67
UDOR U.S.A.....	30
USB-USA.....	18
 <b>VAC-CON</b> www.vaccon.com	
Vac-Con, Inc.....	27
 <b>VACALL</b>	
Vacall.....	15
Vactor Manufacturing.....	31
 <b>VIVAX METROTECH</b>	
Vivax-Metrotech Corp.....	30
Western Drain Supply.....	64
 <b>Westmoor Ltd.</b>	
Westmoor Ltd.....	65

## Cleaner

FOR DRAIN AND PIPE CLEANING, INSPECTION AND REHABILITATION PROFESSIONALS

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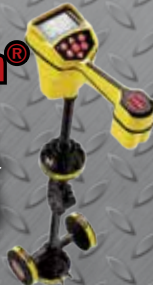
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## CROSS BORE HUNTING

Safety is at the core of cross-bore inspections, but it is also a lucrative business opportunity for contractors

**I**N FEBRUARY 2010, what was seemingly a routine sewer backup at a home in St. Paul, Minnesota, went horribly wrong. There was a flash fire and then an explosion after the contractor put a drain snake with a cutting bit down the clogged line. The contractor was badly burned and the homeowner barely escaped unharmed. The issue was an undetected cross bore. A natural gas line was running through the home's backed-up sewer line, so when that cutting bit sliced through the fragile PVC gas pipe, the seemingly routine job became anything but.

That's just one example showcasing the importance of cross-bore awareness, which has improved in recent decades and needs to stay

top of mind considering that trenchless technologies like directional drilling are increasingly popular ways of performing underground utility installation.

For contractors, that means business opportunity. Communities need underground inspection services to identify any cross-bore hazards and to prevent any new ones. Equix Integrity, featured in this month's issue, was in fact founded in 2012 specifically to do cross-bore inspections.

One of several companies under the larger Equix Inc. brand, Equix Integrity today focuses on a variety of services, including sewer cleaning and rehab, but a core service remains cross-bore inspections, generating about 50% of the company's revenue. The company does preconstruction inspections, televising sewer lines to find existing cross bores and mapping out the locations of laterals for utility installation crews to avoid. Equix Integrity also does post-construction inspections to ensure no new cross bores were created during installation, as well as "legacy" inspections, which focus on larger areas containing decades-old sewer mains and laterals that were installed at a time when cross-bore prevention wasn't as much of a concern.

Many municipalities and utilities today have cross-bore inspection programs in place because of the severe risk that cross bores pose. It's not just scenarios like a gas line puncturing a sewer line, thus turning a routine cleaning into a potentially deadly situation. Cross bores can also compromise the structural integrity of a pipe or contribute to groundwater contamination. The bottom line is it's not great when you have one underground utility line running right through another.

Of course, more concern and awareness about cross bores means there is increased inspection work to do and a need for contractors to take on that work. After the gas explosion at the home in St. Paul, that I referenced to start this column, the utility company in charge, Xcel Energy Co., embarked on a three-year plan to thoroughly inspect sewer lines statewide and fix any cross-bore issues at a cost of millions of dollars. These contracts can be lucrative.

Maybe this isn't news to you. Perhaps your company already has cross-bore inspection among its service offerings. If not though, it's something worth looking into. Equix Integrity saw the opportunity a decade ago and is flourishing today, and making communities safer in the process.

Enjoy this month's issue. **c**

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## NEW TOOLS

### Contractors Learn Potential Value of A.I.

How many of you have heard of ChatGPT? That was a question framed earlier this year to the attendees of the PHCC Educational Foundation's popular Super Foremen Workshop. "Foremen in our industry are comfortable with the tools that they keep in the job site box," said Kirk Alter, professor emeritus at Purdue University, who led the workshop. "But as the first line of company management, please realize that your best tools now are going to be technology and software. Artificial intelligence, A.I., is one of those software tools that foremen should be using. You just haven't seen why yet."

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## QUICK FIX

### The Ins and Outs of Pipe Patching

Fiberglass pipe patches are an ideal solution when only a small section of pipe needs to be repaired, there are too many bends for full-length lining to navigate, or budget constraints make excavation or full-length lining too costly. In this online exclusive, Alex Meyer, a product manager for RIDGID, provides some things to keep in mind if you are considering adding pipe patching to your service offerings.

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We're always on the lookout for relevant and interesting plumbing and drain cleaning content across the internet and social media. In our e-newsletters, we regularly highlight that and share what else out there we're reading and watching. For example, the on-the-job videos of the New York contractor, A \$49.95 Any Sewer or Drain, which has been regularly showcasing its work on YouTube for the past three years. Be sure to sign up for *Cleaner* e-newsletters if you haven't already. >> [cleaner.com/featured](https://cleaner.com/featured)

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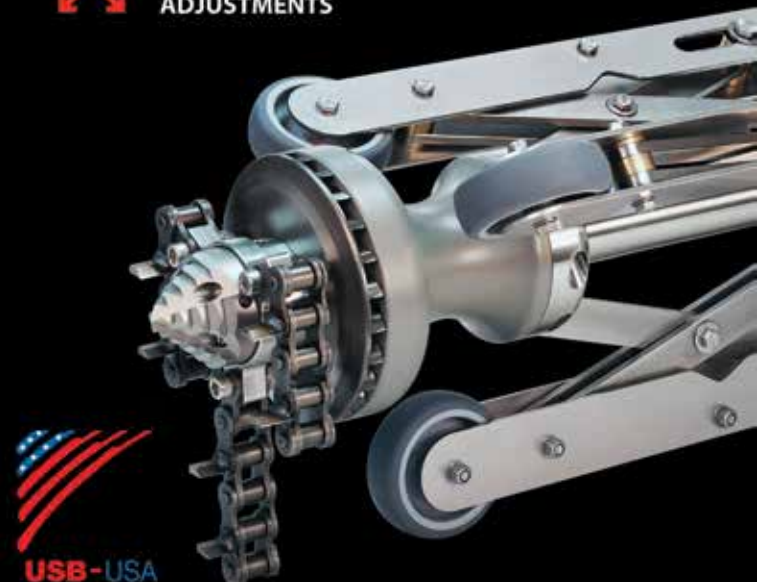
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# STRENGTH IN NUMBERS

BONTEMPO PLUMBING & DRAIN CLEANING OWNER RELIES ON WORD-OF-MOUTH ADVERTISING AND A SOLID NETWORK OF COLLEAGUES TO DRIVE HIS COMPANY'S SUCCESS

// By Giles Lambertson



« Chris Bontempo, owner of Bontempo Plumbing & Drain Cleaning, stands near one of his service trucks at a job site near West Allis, Wisconsin.

Thirteen years into running his own business, Chris Bontempo is so busy he doesn't bother to advertise. No website. No ads. A little social media.

"We can barely keep up with work," he says. "I'm a firm believer that word-of-mouth advertising is going to serve you best. It works."

It clearly is working for Wisconsin-based Bontempo Plumbing & Drain Cleaning. There may be several explanations for the success of the company, but it all begins with Bontempo being a hard-working entrepreneur. From the launch of his company in 2010, he says he was willing to burn candles at both ends to meet customers' needs and establish the business. He didn't burn out at that stage, fortunately, and now only has to work hard, instead of extra hard, to stay on course.

"I did everything in the beginning," Bontempo says.

That is, he continued to work as a master plumber for another company while he built up a drain cleaning business on the side. After his day job, he would clean drains at night.

"It was just me," he recalls. "My day began at 4 a.m. and I tried to get home by 6 o'clock and be there when the kids went to bed. Then I'd do paperwork and clean the truck and get ready for the next day."



» The company often uses a Jetters Northwest Eagle 300 jetting unit to clean the sewer lateral of residences.

In November 2021, Bontempo’s enterprise finally found a business home on South 56th Street in West Allis, a community of about 60,000 people on the outskirts of Milwaukee. The company office fronts a 2,600-square-foot warehouse where equipment and work trucks spend their nights.

“Before we moved there, I worked from my home, my garage and a storage unit,” Bontempo says. “It’s great not having everything parked at home.”

Now when he goes home in the evening, he can leave work behind.

### CUSTOMER SATISFACTION

Bontempo was a plumber before he began working on drains and his mix of business reflects that priority today. He estimates that 55% of his workload is purely traditional plumbing calls, with the other 45% consisting of drain work.



## Bontempo Plumbing & Drain Cleaning

WEST ALLIS, WISCONSIN

**OWNER** Chris Bontempo

**FOUNDED** 2010

**EMPLOYEES** 2

**SERVICES** Full-service plumbing and drain cleaning including water heater, shower, toilet and faucet repair and replacement, and jetting of drain and sewer lines, descaling of pipelines, locating and patching underground lines

**SERVICE AREA** 45-mile radius around the shop in West Allis

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



Chris Bontempo started his company in 2010 and worked out of his home, a garage and a storage unit for many years. He finally moved into an office and warehouse space in 2021.

Bontempo uses a RIDGID SeeSnake camera to look at the inside of a pipe as he cleans it out.

## BUILDING A NETWORK

Industry friends also help. Some of Bontempo's references come from other plumbers. When he went out on his own, he left word with plumbers he knew at a plumbing supply house to call if there was something he could do for them.

"That just gradually grew into a network of plumbers," Bontempo says. "We work together, do everything for each other, sharing customers. It works."

Six other plumbers are in the network. This plumbing trades network is one reason reliance on word-of-mouth is a winning formula for Bontempo.

In the network are specialists of one kind or another who are tapped as needed by the other plumbers. Bontempo, for example, cleans drains and repairs lines using the PipePatch product (Source One Environmental), which he began offering in 2017, so drain cleaning and pipe repair jobs are sent his way. On the other hand, if one of Bontempo's customers needs a line dug up, the

They are not mutually exclusive tasks, with some of his plumbing business coming to him from what originally were only drain cleaning calls.

Three quarters of his plumbing service calls are to residences, with one in five calls from restaurants and other commercial businesses and the remaining 5% industrial. Whatever the type of call, however, Bontempo's service runs take him all around West Allis and into Milwaukee and nearby Waukesha — basically anywhere within a 45-mile radius of his office.

So how do people with leaking pipes in Waukesha know about a plumber in West Allis who doesn't market his business? Word-of-mouth referrals from satisfied customers, Bontempo says, and customers who call him again when another leak occurs. He estimates that 85% of his business comes from return customers.



“THAT JUST GRADUALLY GREW INTO A NETWORK OF PLUMBERS. WE WORK TOGETHER, DO EVERYTHING FOR EACH OTHER, SHARING CUSTOMERS. IT WORKS.”

CHRIS BONTEMPO



work is subbed to the plumber in the network who has a mini-excavator in his equipment yard.

Other sources of work for Bontempo Plumbing & Drain Cleaning are several contractors who remodel homes and call on Bontempo to run the pipes and install the fixtures. Occasionally, he also plumbs newly constructed custom homes.

In short, Bontempo stays busy. Part of his job security comes from the relatively old housing stock in Milwaukee County. He says the oldest house he’s ever worked on was built in 1870. Aging housing in the area was one reason he began working for himself as a drain cleaner.

“I saw the infrastructure was going to start failing and drain cleaning seemed like a logical starting point for me,” Bontempo says.

#### FORMING THE TEAM

“I wouldn’t be able to do what we’re doing without the team I have,” Bontempo says.

He is the master plumber the company’s expertise is founded on, but he also has an apprentice plumber, Zach Bajewski, who has worked with him for three years.



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▲ The staff at Bontempo Plumbing & Drain Cleaning includes, from left, Chris Bontempo, owner and master plumber; Allison Bontempo, Chris' daughter; Melissa Wittliff, office manager; and Zach Bajewski, apprentice.

In the office on South 56th Street is his office manager of four years, Melissa Wittliff, who does it all.

"She handles all the paperwork — accounts receivable and payable, billing, payroll, scheduling of service calls," Bontempo says. "She's a huge portion of this team."

In her spare time, Wittliff studied up for and last year was awarded a cross connection backflow testing license. The certificate lets her inspect the valves that prevent contaminated water from backing up into a water system when water pressure drops. She does all the backflow testing for the company.

Then there is Allison, an unofficial team member. She's one of three daughters in the Bontempo family. She knows how to

run the RIDGID locator and can operate the camera inspection system.

"She sometimes works right beside me and says, 'I got this, Dad,'" Bontempo says.

### GO-TO EQUIPMENT

Bontempo's toolbox has a mix of brands, mostly RIDGID and Milwaukee Tool. This includes RIDGID inspection cameras and a couple of SeeSnake units. A RIDGID SeekTech SR24 locating receiver is what the company uses to locate pipes. Bontempo occasionally does locating work for electricians because the unit's mapping feature gives them printouts for long-term information on a piece of property.

Bontempo pulls out Picote descaling equipment when a corroded pipe is the problem. For clearing drainlines and other clogged pipes, the company has a trailered Jettors Northwest Eagle 300 jetter with 4,000 psi and 18 gpm flush power. The jetter is cranked up and utilized at least once a week.

## JUST ANOTHER DAY

A day in the life of a plumber is different from shop to shop depending on clientele. At Bontempo Plumbing & Drain Cleaning, the days are both busy and varied.

Because the Bontempo shop is located in Wisconsin, during the winter, weather sometimes determines what the crew will be doing any given day. Every freeze brings calls to the shop about frozen pipes, a situation exacerbated by older housing stock in the community. Owner Chris Bontempo says probably half of those calls end up being thaw jobs using electric warmers or a propane torch and installation of some insulation. The other half have pipes too vulnerable to the elements for such fixes and new pipe is run in a less exposed area. The latter fix takes far longer than just a thaw and determines what other jobs might be accomplished that day.

At least once a week, the company's trailered jetter is hauled to a property for emergency cleaning of a badly clogged pipe.

"Sometimes we jet more than one pipe a day," Bontempo says.

Sometimes relatively simple plumbing calls to fix a leak turn into major repairs and scramble the schedule. One recent jetting job was turned down because of another service call to descale a pipe. The pipe was located under a floor and Bontempo determined it had been leaking for some time.

"We dug it out and replaced the pipe, then we poured some concrete that we'd broken up," Bontempo says.

Leaving the job to let the concrete set, the crew went to another home and repaired a leaking toilet and, at a third location, a leaking outside faucet. The next day, the crew returned to the house with the rotted lumber and put the floor back together before heading over to a property where a shower line was clogged. Once cleared, however, the line was found to be leaking. The day finished with Bontempo fixing a leaking trap under a bathroom sink.

A day in the life.

"I WOULDN'T BE ABLE TO DO WHAT WE'RE DOING WITHOUT THE TEAM I HAVE."

CHRIS BONTEMPO

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« Chris Bontempo uses a Clog Dog, a high-speed milling machine, and a Milwaukee Pipeline Inspection System to see what blockages remain in the sewer lateral of a home in St. Francis, Wisconsin.

» Zach Bajewski brings in the company's Clog Dog to clean the remaining roots out of a sewer lateral at a home. The Clog Dog product was purchased by RIDGID and is no longer manufactured in this form.



“THE BETTER EDUCATED CUSTOMERS ARE, THE BETTER DECISIONS THEY CAN MAKE. IF YOU DON'T TREAT CUSTOMERS WITH RESPECT, THEY AREN'T GOING TO CALL YOU BACK.”

**CHRIS BONTEMPO**

The trailer and tools are carted from place to place using one of two vehicles bearing the company's orange-and-black logo. One is a Dodge Ram 2500 with a service body, the other a Ford Transit with extended wheel-base and roof.

## TWO PUZZLES

Bontempo has run into a couple of attitudes in the course of operating his company. One of the attitudes benefits him, the other puzzles him.

First, the puzzler. A short while after he began plumbing on his own after years of working for someone else, Bontempo encountered resistance when he approached commercial customers about signing up for a preventive maintenance program. The idea of such a contract is to pay a set fee for routine evaluation and cleaning of pipes and systems instead of having a bigger expenditure when a pipe becomes thoroughly clogged or a water system fails.

“But most of the places around here don't want to get into preventive maintenance contracts,” Bontempo says. “They would rather wait until something happens and then pay to fix it.”

To date, Bontempo has exactly one maintenance contract customer.

The other attitude is not exhibited by customers but by some of his fellow contractors.

“Most plumbers around here don't want to do any drain cleaning,” Bontempo says.

He has had difficulty hiring plumbers to work for him because his workload includes cleaning and repairing drain and sewer pipe. “Not interested,” potential hires say. The upside to the situation, of course, is that the fewer plumbers in West Allis willing to work with drains, the more drain business that comes to Bontempo. Pretty good consolation prize.

## THE FUTURE

Bontempo has the equipment he needs for the diverse services he offers, but he says he's not done. He is toying with the idea of buying a pipe lining system. Already looking for another plumber, he says he might have to find two if he starts lining.

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« Apprentice Zach Bajewski cleans the old wax ring off before a new wax ring and toilet are installed in a home in Cudahy, Wisconsin.

“It goes back to the good old days of treating everyone with respect,” he says. “When I get a new customer, I like to educate the person on what is going on in the home. The better educated customers are, the better decisions they can make. If you don’t treat customers with respect, they aren’t going to call you back.” **c**

If things continue to develop as he foresees, he one day will be able to leave the field to his plumbers, sit at a desk in the company office and plan customer shower stalls with multifunction fittings and lots of body space. Such design work is a favorite task.

Growth and expansion all depend on Bontempo Plumbing & Drain Cleaning staying busy through its word-of-mouth marketing, which is dependent on fostering and maintaining good relationships with customers. Bontempo describes it as a proven system of growing a business.

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## FULL-CIRCLE VIEW

Innovative telescoping pole camera improves Michigan contractor's manhole inspection capabilities // By Ken Wysocky

**W**HEN JON KOROTKO FIRST heard about the Quickview 360 manhole inspection pole camera, he couldn't wait to buy one and reap the benefits he figured would ensue: increased safety for technicians and a significant productivity pop.

So far, the field superintendent for PowerVac, a Michigan-based sewer and industrial cleaning company, hasn't been disappointed.

For starters, the camera — made by EnviroSight, a brand owned by IDEX Corp. — has largely eliminated the need for confined-space entry to inspect grease trap interceptors, which is a large part of PowerVac's business.

"We inspect hundreds of interceptors a year, more and more often as part of a proactive scheduled maintenance program," Korotko says. "Michigan requires private businesses to get annual interceptor inspections. And I can assure you that confined-space entry is not desirable on any level, from the risks involved to the smell, which is one of the most horrific odors you'll ever encounter."

Moreover, the Quickview camera can video square-shaped interceptor vaults, unlike other cameras Korotko has used.



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**OWNERS** David Janks and private investment firms

**MACHINE** EnviroSight Quickview 360 manhole inspection pole camera

**FUNCTION** Fast inspections of manholes and other infrastructure

**FEATURES** Pan-and-tilt camera operated wirelessly via an app; computer tablet; 30-foot telescoping pole; dual-lens camera with 360-degree coverage; laser-guided rangefinder; bright LED lamps; rechargeable lithium-ion battery.

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« PowerVac's David Janks, general manager and co-owner, and Jon Korotko, field superintendent, perform a manhole inspection using the Quickview 360 pole camera from EnviroSight.



“With standard manhole inspection cameras, you get incomplete data for the corners in a square vault because they’re designed for round infrastructure,” he says. “But the Quickview 360 picks up all the information in the corners. There aren’t any data voids.”

### MORE EFFICIENT INSPECTIONS

Then there’s the efficiency boost. Korotko says the Quickview 360 provides about a 30% increase in productivity.

First of all, the Quickview doesn’t require a tripod as well as other ancillary equipment, so there’s no time wasted on setting up on a job site. All an operator has to do is screw the camera, which is about the size of a cellphone, onto the pole and lower it into a manhole or interceptor.

“There’s a large circle on the tablet screen (the app-operated camera comes with a computer tablet) and if you put the camera in too fast, it tells you to slow down,” Korotko says. “And when the laser rangefinder reaches the end measuring point, it tells you to stop. Then you pull it out and move on to the next job.”

Along with the rangefinder, beneficial features include a pan-and-tilt camera operated via an app on the tablet; a 30-foot telescoping pole; a dual-lens camera that provides 360-degree coverage; bright LED lamps; and a rechargeable lithium-ion battery that can operate for an entire work day on a full charge.

### ACCURATE MEASUREMENTS, DETAILED DATA

The camera also saves time because all the data it collects while videoing can be quickly uploaded to WinCan sewer inspection and asset management software.

Before, technicians would use a video camera or cellphone camera to perform an inspection and manually insert digital notes and measurements on the camera screen as they encountered defects.

“I WONDER HOW WE EVER GOT ALONG WITHOUT IT. THIS IS A CASE THAT REALLY ILLUSTRATES WHY CONTRACTORS HAVE TO INVEST IN NEW TECHNOLOGY.”

JON KOROTKO



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**RTD 1000 RPM N VERSION SOLID SHAFT 35MM**

MODEL	MAX GPM	MAX L/MIN	MAX PSI	MAX BAR	POWER EBHP	BORE DIA MM	STROKE MM	CRANKSHAFT ID STAMP	WEIGHT LBS.
RTD80-300	21.0	79.5	4350	300	65.0	32	42	4	128
RTD100-200	25.0	94.6	2900	200	49.8	32	42	3	128
RTD100-200SX	25.0	94.6	2900	200	49.8	32	42	3	128
RTD130-160	32.0	121.1	2300	160	50.5	36	42	3	128
RTD130-200H	34.5	115.0	2900	200	68.0	36	42	3	128
RTD160-130	40.0	151.4	1850	130	50.8	40	42	3	128

SX - 180° Rotated Shaft Configuration  
H - Nickel Plated

**AR** **RTX**



Industrial

140° F - Max Water Temp  
1 1/2" - Inlet Thread  
1 1/2" - Discharge Thread  
76 oz - Oil Capacity

**RTD 1450 RPM N VERSION 30 x 80MM SOLID SHAFT**

MODEL	MAX GPM	MAX L/MIN	MAX PSI	MAX BAR	POWER EBHP	BORE DIA MM	STROKE MM	CRANKSHAFT ID STAMP	WEIGHT LBS.
RTX30	8.0	30.3	4350	300	23.9	20	23	3	72
RTX50	12.0	45.4	4350	300	35.8	25	23	3	72
RTX60	14.0	53.0	4350	300	41.8	25	28	1	72
RTX70	17.0	64.4	3000	200	33.8	30	23	3	72
RTX85	21.0	85.0	2200	200	31.7	30	28	1	72
RTX-HW85.150N*	21.0	85.0	2200	200	31.7	36	23	1	72
RTX100	24.0	90.8	1800	124	29.8	36	23	3	72
RTX150	39.6	150	1450	100	36.2	40	28	1	72

\*HW - includes Hot Water Kit

“That usually took about an hour,” Korotko says. “Now videoing the interceptor takes about 10 to 15 minutes and it takes another 15 minutes or so to put the data together and upload it. Then you can sit in an office and scroll through the video and describe the physical condition of the interceptor — the frame cover and seals, the condition of the baffles, the location of and extent of defects and so forth. And you do it all in a controlled environment instead of doing it under adverse conditions.”

The Quickview’s software provides a “virtual” pan-and-tilt feature that allows for more detailed views of a video, plus a video editing feature. Contractors can also create a 3D model of the structure they inspected.

Furthermore, even the most qualified technician has a hard time getting accurate measurements during a confined-space entry inspection. But the Quickview’s laser rangefinder provides exact measurements that help create a much better and more detailed report for customers, Korotko says.

**SOLID ROI**

The camera aids customer service in other ways, too. Detailed inspections can save customers money if they indicate that infrastructure needs less frequent cleanings than anticipated. Regular inspections can also help customers avoid fines from municipalities, Korotko says.

“It also helps heighten customers’ awareness of this infrastructure that supports their businesses,” he adds. “They realize that inspections and proper maintenance keep their businesses running uninterrupted by things like emergency calls for sewer overflows when an interceptor gets clogged.”

At about \$24,000, the camera represents a fairly considerable capital investment. But the return on investment it provides more than compensates for the cost, Korotko says.

“We have 40 vacuum trucks, which we use to clean manholes and catch basins as well as sewer lines and interceptors,” he says. “And we can use the Quickview 360 to inspect catch basins and manholes, too, so it’ll more than pay for itself pretty quickly. It’s really an amazing tool, especially when compared to other cameras we’ve used that cost up to \$90,000. I wonder how we ever got along without it. This is a case that really illustrates why contractors have to invest in new technology.” c



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# AT YOUR SERVICE

OVER THE PAST DECADE, EQUIX INTEGRITY HAS GROWN FROM A CROSS-BORE INSPECTION FIRM WITH ONE LOCATION INTO A DIVERSIFIED COMPANY PROVIDING WATER AND WASTEWATER SERVICES ACROSS THE COUNTRY // *By Ken Wysocky*



**EQUIX INTEGRITY WAS ONCE A ONE-FACILITY OPERATION. IT NOW WORKS REGULARLY IN 15 DIFFERENT STATES.**

Equix Integrity is one of six businesses that stand under the umbrella of Equix Inc., headquartered in Fond du Lac, Wisconsin, a nationwide construction services corporation focused on utility and infrastructure projects. Equix Integrity was established in 2012 in Bloomington, Minnesota, to provide cross-bore inspection services primarily to horizontal directional drilling contractors and natural gas utilities, says Andrew Undicelli, vice president.

Since 2012, the company has established six more facilities in Ohio, Colorado, Florida, Texas, Maryland and Connecticut — the latter two via acquisitions. It also now employs about 100 people and has invested millions of dollars in equipment.

The company has also expanded its services into complementary offerings. On any given day, Equix Integrity crews fan out from their locations to do not only cross-bore inspections but also clean, inspect and rehab sewer lines for municipalities, construction firms, state transportation departments and pipe lining contractors. The company also rehabs manholes.

The growth is a result of capitalizing on an increasing need for a specialized service, coupled with a strategic expansion plan, an emphasis on diversified service and continual investments in advanced technology.

“The company is very committed to growth in all its business units,” Undicelli says. “So we recognized that adding additional services that lined up with existing service offerings would increase our opportunities and overall potential.

“Another advantage is our ability to take on larger projects as a turnkey contractor, something that many of our customers find beneficial. As we continue growing our business, we will continue to look to add new technology and service offerings to expand our reach and our appeal to potential new customers.”

**EMPHASIS ON CROSS BORES**

Equix Integrity’s initial foray into cross-bore inspections was spurred by an ever-growing need for the service amid growing awareness of the dangers they present. For the uninitiated, cross bores occur when contractors accidentally drill through natural gas or lateral lines during trenchless installations.

« Members of the Houston team for Equix Integrity pose in front of one of the company’s trucks, a 2023 KAISER AquaStar. Equix Integrity is one of several companies under the umbrella of its parent, Equix Inc., and has 100 employees working in 15 different states.

» Bryce Elliott, a jet/vac operator with Equix Integrity, uses a Milwaukee Tool grease gun to grease a KAISER AquaStar truck on a job in Houston.



**Equix Integrity**

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**OWNER** Equix Inc.

**FOUNDED** 2012

**EMPLOYEES** 100

**SERVICES** Cross-bore inspections and sewer cleaning, inspections and rehab

**SERVICE AREA** Nationwide

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





## A CONTINUOUS WATER SUPPLY

Imagine a combination vacuum truck that never has to leave a job site for water tank refills.

That might sound like a pipe dream for some sewer-cleaning contractors, but it's a reality every day for Equix Integrity thanks to three AquaStar water recycling vac trucks from KAISER PREMIER. The company bought its first AquaStar truck in 2019.

Why invest in water recycling trucks? Two primary reasons: increasingly limited access to water from fire hydrants and large productivity gains, says Andrew Undicelli, vice president.

"It's getting harder and harder to obtain access to fire hydrants to fill our trucks' water tanks," he explains. "With so many older waterlines, municipalities are getting more and more protective about letting contractors hook up to hydrants. But with the AquaStars, we fill up in the morning and don't stop working for the rest of the day. That results in a considerable productivity increase compared to the downtime caused by breaking down a job site, driving away to get a water refill, then coming back and setting up the job site again."

While water recycling technology for vac trucks is relatively new in the United States,

Undicelli says the company had no problem with investing in the KAISER trucks because the technology was developed decades ago and they have "worked out the kinks."

Another benefit: The AquaStars are equipped with only one vacuum tube that works in conjunction with nearly 56 feet of suction hose that's conveniently stored by wrapping around the top of the tank. That's more efficient than hauling six to eight vacuum tubes, plus the tubes have pinch-points that can cause injuries, Undicelli notes.

"Also, vac-tube extensions tend to get stolen because they're made of aluminum," he adds.

The AquaStars feature KAISER KDU water pumps (up to 2,900 psi at up to 132 gpm); a telescoping combined jetting and suction boom with 180-degree swivel drive; 985 feet of 1-inch-diameter jetting hose; a 1,850 cfm KAISER liquid-ring vacuum pump; a 12.8-cubic-yard, stainless steel debris tank; and a highly automated operating system, including a touchscreen control panel and remote-control capability.

Undicelli estimates that each AquaStar truck recycles between 500,000 and 600,000 gallons of water annually, a "green" benefit that the company uses to market its vac truck services.

This can lead to clogs and decrease the integrity of punctured lines, not to mention create an extremely dangerous condition for contractors who unknowingly rupture gas lines with drain cleaning equipment. Because of poorly done or outdated sewer line mapping, cross bores are more common than one might think. The Cross Bore Safety Association reports that the average rate of cross bores is 0.4 for every mile of sewer line.

Equix Integrity performs several different kinds of cross-bore inspections. Preconstruction inspections center on televising sewer lines to find existing cross bores and mapping the locations of laterals so that HDD crews can avoid puncturing pipelines. These inspections determine the depths and locations of laterals so that HDD contractors can plan accordingly, Undicelli says.



« Ryan Albanese, an Equix Integrity crew leader, and Bryce Elliott, jet/vac operator, prepare to clear and inspect a sewer line using a 2023 KAISER AquaStar.

Post-construction inspections focus on inspecting mains and laterals to be sure that no cross bores occurred during gas-line installations, Undicelli explains.

There's also what's known in the industry as "legacy" inspections, which are similar to post-construction inspections but focus on larger areas where mains and laterals sometimes were installed decades ago, before cross-bore prevention was a concern. Utilities typically run a risk model to prioritize areas they deem the most likely to have existing cross bores, Undicelli notes.

The company relies on a large fleet of camera trucks, outfitted by CUES and Aries Industries, as well as RIDGID SeekTech SR-20 pipeline locators, to perform inspections. Many of the trucks are dedicated to cross-bore inspections and the rest focus on other water and wastewater work, Undicelli says.

Cross-bore inspections remain the backbone of the company's business, generating about 50% of its revenue.

"There are thousands of miles of (gas) lines being installed every year and the awareness of the dangers of cross bores has increased dramatically in the last 10 years or so," Undicelli says.

### SUCCESS BEGETS SUCCESS

In 2016, Equix Integrity opened locations in Ohio and Colorado and then entered the sewer cleaning industry by acquiring two companies — one in Connecticut and one in Maryland — that inspected, cleaned and rehabbed sewer lines.

In 2021, the company opened another location in Texas because of the promising business opportunities there. The work in Texas includes cross-bore inspections for a natural gas utility and televising and cleaning lines for various cities across the state and for smaller "mud" districts, Undicelli explains.

### KEYS TO GROWTH

One critical factor in the company's growth has been constant investments in advanced technology. For example, Equix Integrity has

"WE RECOGNIZED THAT ADDING ADDITIONAL SERVICES THAT LINED UP WITH EXISTING SERVICE OFFERINGS WOULD INCREASE OUR OPPORTUNITIES AND OVERALL POTENTIAL."

ANDREW UNDICELLI

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# EQUIX



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◀ Bryce Elliott, jet/vac operator, operates the control panel on a 2023 KAISER AquaStar truck.

invested millions of dollars in AquaStar water recycling combination vacuum trucks from KAISER PREMIER, as well as Camel Max Series 1200 wastewater recycling vac trucks from Super Products.

Most of the trucks feature 12-cubic-yard debris tanks and water pumps that generate 80 to 120 gpm at 2,500 psi.

The company also owns jetting trucks from US Jetting with water pumps that generate flow and pressure of 65 gpm at 2,000 psi and 500- or 1,000-gallon water tanks.

To rehab manholes the company invested in grout trucks built out by CUES with test-and-seal packers from Logiball.

Equix Integrity also owns three manhole rehab systems, one from AP/M Permaform that includes a grout pump from ChemGrout, another one from Imer and a Quadex Lining System from Vortex that also includes a ChemGrout pump.

Rounding out the fleet of equipment are several easement camera systems from CUES, mounted on either Kawasaki (Hitachi Construction Machinery Group) or Kubota all-terrain vehicles.

How does the company afford such capital-heavy investments? The answer underscores another factor in the company's growth:

strong financial backing from the ownership growth, Undicelli says.

"Other companies may have business opportunities, but they don't always have the financial resources to capitalize on them," he says, noting that a camera truck and a recycling vac truck, combined with a fully trained crew, requires about a million-dollar investment.

### MORE SUCCESS FACTORS

To attract and retain employees, Equix Integrity offers competitive pay and benefits such as paid time off, paid holidays and 401(k) retirement plans. The company also offers additional incentive plans. Undicelli says the company understands the competitive job market and does everything it can to show existing and potential employees how valuable they are to the company's success.

On-the-job safety has also played a big role in the company's success, Undicelli notes.

"It's one of our stronger selling points when we talk to potential customers," he says. "I take a lot of pride in the fact that safety and operations work hand-in-hand with each other at this company. Health, safety and environment and operations are in lock-step with everything we do. Safety is our first and most important core value. From the very top of our organization to a new hire, we hold safety above everything else — no exceptions."

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◀ Bryce Elliott, jet/vac operator, retracts the hose on a 2023 KAISER AquaStar during a job in Houston.

✓ Equix Integrity crew leader Ryan Albanese plans out the tasks to complete on a work order during a job in Houston.

“A LOT OF OUR SUCCESS COMES FROM RESPONSIBLE GROWTH AND THAT’S A BIG CONSIDERATION NO MATTER HOW BIG YOU ARE. IT’S IMPORTANT TO NOT GET IN OVER YOUR HEAD FROM THE BEGINNING.”

ANDREW UNDICELLI



## LOOKING AHEAD

Are there any takeaways from the company’s success story that can benefit smaller contractors that don’t have a multi-million-dollar corporation backing them up? Undicelli says that in many respects, Equix is similar to many other contractors because it started out small, too.

“A lot of our success comes from responsible growth and that’s a big consideration no matter how big you are,” he notes. “It’s important to not get in over your head from the beginning — don’t bite off more than you can chew.”

Undicelli expects more growth for the company in the coming years. Some of it could come through expanding the company’s geographic footprint, especially by leveraging relationships with existing customers that have operations in other areas around the country. More acquisitions are also possible, too, he says.

“Everything is on the table at this point,” Undicelli says. “Our foot is always on the gas pedal. This industry definitely is poised for further growth. We’re very optimistic about the future.” **c**

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# AVOIDING SEWER CLEANING HAZARDS

An industry expert explains how to protect jet/vac equipment operators from some of the industry's most common mistakes /// By Dan Story

**T**HE USE OF HIGH-PRESSURE jet/vac equipment for cleaning sewers can be dangerous unless operators are well trained and fully understand the potential hazards.

Here are 10 safety tips that address the most common errors I've observed during my time in the industry.

## **NO. 1: PROPERLY SET UP THE AREA AROUND THE VACUUM TRUCK TO ENSURE OPERATOR SAFETY IN STREET TRAFFIC.**

When you park the vacuum truck in the middle of the road, you need to block off traffic so that it can pass in a safe manner. Set safety cones in front and behind the work zone and make sure the hazard flasher lights are functioning correctly.



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## **NO. 2: KEEP EQUIPMENT NOISE LEVELS LOW ENOUGH TO HEAR TRAFFIC.**

Revvng the truck engine and running its vacuum pump can be noisy. Keep RPMs low enough so that operators can hear and avoid approaching vehicles and converse with co-workers as needed.

One way to lower vacuum truck RPMs during engine operation is by only using the vacuum when needed. You can put the nozzle in the bottom of the sewer pipe and let the water run around it. The remaining solids can be vacuumed as needed. You do not need to continuously run high RPMs.





Another method is using more efficient nozzles. That enables sewer cleaning with lower-pressure water, reducing engine RPMs.

**NO. 3: UNDERSTAND HOW YOUR SPECIFIC TRUCK BOOM OPERATES.**

There are differences in how every truck manufacturer configures, deploys, and extends the booms that control the vacuum hose. Some deploy rapidly, some articulate, some telescope. Operators must understand these differences before operating a boom in the field around their co-workers.

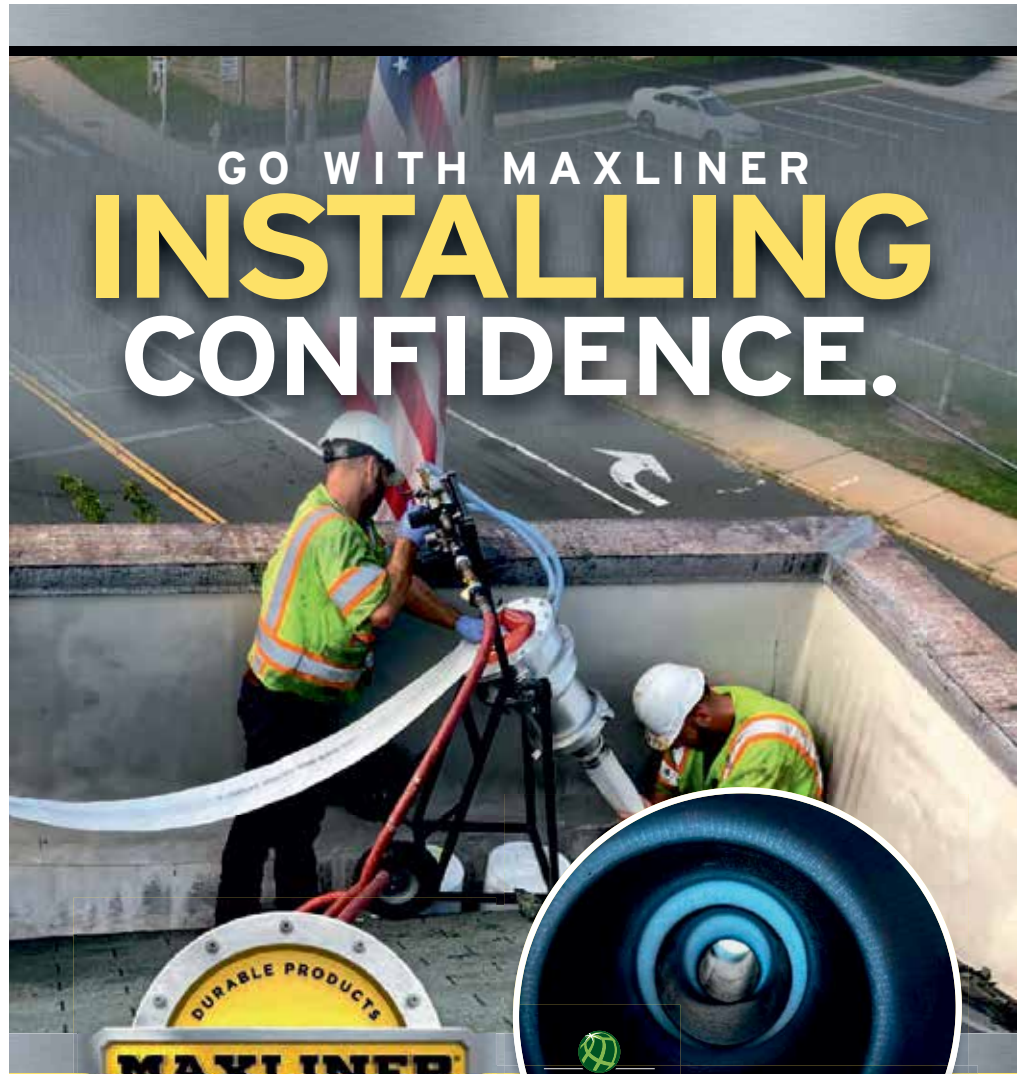
You may go out in different vehicles from day to day with different crew members, so it is important that you understand your boom equipment. Do not rush the job because the boom can cause injuries if it is not used with full understanding and control.

✔ Sewer cleaning nozzles at extremely high pressures should only be used in a pipe or the nozzle could whip around like a fire hose.



**NO. 4: USE PPE AND PRACTICE GOOD HYGIENE.**

Protect your hands and feet with waterproof gloves and work boots. Protect your eyes with goggles or a face shield. Of course, protect your head with a hard hat to avoid injury from a swinging boom or a falling object.



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# SAFETY FIRST

» For safety in the sewer pipe, open the upstream sewer manhole first, and this will allow the system to draw in fresh air.



Being exposed to sewage or human waste may increase the risk of becoming ill from waterborne diseases. To reduce this risk and protect against illness, operators should wash hands with soap and water immediately after cleaning sewers before eating or drinking. Avoid touching the face, mouth, eyes, and nose while handling sewage, and cover any open cuts, sores, or wounds with clean, dry bandages.

The CDC advises vaccination against Hepatitis A and B and other contagious diseases that could put operators at risk when exposed to sewage or human waste. The CDC, in fact, also recommends vaccinations for tetanus, polio, and typhoid fever in these environments.

## NO. 5: OPEN THE UPSTREAM SEWER MANHOLE FIRST.

High concentrations of methane in enclosed areas can lead to hazards as large amounts of methane decrease the amount of oxygen in the air. Oxygen deficiency can cause headache, nausea, dizziness and even unconsciousness.

With that in mind, one of the first things that operators must do is open the upstream manhole. That will allow the system to draw in fresh air. On the other hand, if the air were to be drawn directly from the homes, it could fill them with sewer gas, which is unsafe and unpleasant for homeowners.

## NO. 6: DO NOT START JETTING OUTSIDE A PIPE.

With jetting, sewer cleaning nozzles are designed to direct water at exceedingly high rates of pressure. For typical cleaning, 1,000 to

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1,500 psi is normal. To remove a blockage, pressures as high as 5,000 psi may be reached.

Cleaning nozzles at extremely high pressures should only be used in a pipe. If a nozzle is used outside of a pipe, it can whip around like a fire hose. I have seen sewer nozzles and hose go up and wrap around telephone wires. I have seen nozzles over 60 feet in the air.

**NO. 7: USE A HOSE WITH A ROBUST SAFETY FACTOR TO PREVENT BURSTING.**

Since hose and nozzle pressures can be so high, it is important to utilize only robust hose of sufficient strength to ensure safe use over time.

Many operators overlook the possibility of burst hoses. However, hose is gradually cut going in and out of sewer pipe. The braided nylon weave remains, but every layer that is cut reduces hose strength and the corresponding psi that can be run.

**NO. 8: PROPERLY SIZE THE NOZZLE-TO-HOSE CONNECTION TO PREVENT NOZZLE "RICOCHET."**

If the nozzle-to-hose connection is not sized properly, it can lead to a dangerous, high-pressure "ricochet," where the nozzle and hose can suddenly turn around and come back at the operator.

One way to prevent nozzle ricochet is to size the nozzle-to-hose connection properly. As a rule of thumb, the distance from the tip of the nozzle to where the hose connects needs to be approximately one-and-a-half times the size of the pipe diameter you are cleaning. Sizing it in this way can help to prevent the nozzle from turning around and coming back at you.

Also, don't "free spool" a nozzle up the sewer line. Any time you do this, you lose control of the nozzle and it can ricochet back at you. To prevent this, use a nozzle skid and hold the nozzle back.

**NO. 9: CHOOSE THE RIGHT NOZZLE FOR THE JOB TO REDUCE TURBULENCE AND WEAR.**

As is known throughout the industry, there

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aerodynamics of race cars or fighter jets. In the case of our Tier 3 nozzles at KEG Technologies, the high-performance fluid mechanics design leaves little room for power losses and excessive turbulence.

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## NO. 10: SLOW AND STEADY WINS THE RACE — AND IS SAFER FOR OPERATORS.

The top mistake by operators that puts them at risk is rushing through the process.

Many operators run their nozzles way too fast. Rushing to clean more footage of sewer pipe is dangerous. To clean safely, keep the nozzle slow and steady and let it do its job. Never outrun your water or you risk losing control of the process and will eventually run into

a blockage. A blockage of roots, grease, mineral deposits, or cave-ins will plug up the front jets. Then you no longer have a penetrating tool but a battering ram — a nozzle with no forward jets trying to feed its way through the blockage.

The reason we put forward jets on the nozzles is to safely open the blockage before the nozzle arrives. Slow down and the water will open the blockage before the nozzle ever gets there. **c**

## ABOUT THE AUTHOR

Dan Story is operations manager at KEG Technologies, a Spartanburg, South Carolina-based manufacturer of sewer and storm line products including Tier 1 to Tier 3 nozzles, chain cutters, floor cleaners and camera nozzle systems. As a national trainer of best-practice techniques, the company is a member of NASSCO and its Tier 3 high-efficiency nozzles, such as the Torpedo, Royal and OMG, provide up to 98% efficiency. For more information, call 866-595-0515 or visit [www.kegtechnologies.net](http://www.kegtechnologies.net).



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Joan Koehne

# FUTURE FOCUS

It's never too early to look ahead and think about how the family business should work into a living trust or will // By Joan Koehne

**EVEN ON DAY 1** of a new business, it's important to start planning for the future. "You need some sort of backup plan for 'just in case,' because 'just in case' doesn't wait for a convenient day to happen," says Devin Shanley, attorney for Peterson, Berk & Cross in Green Bay, Wisconsin.

Shanley encourages business owners to create clear-cut plans describing what happens if they die or become incapacitated. These estate and succession plans should be in place years before the owner exits the business. By adequately planning before their death, owners ensure that their family business will be preserved in the manner they want. Additionally, careful planning protects them and their company from unexpected, potentially large tax liabilities. Lastly, advanced planning ensures that a company can continue operations, even after an unexpected death.

Successful entrepreneurs need to remember that, like their homes and retirement accounts, their business is an asset.

"YOU NEED SOME SORT OF BACKUP PLAN FOR 'JUST IN CASE,' BECAUSE 'JUST IN CASE' DOESN'T WAIT FOR A CONVENIENT DAY TO HAPPEN."

DEVIN SHANLEY

"They might think of it as a job or an extension of themselves," Shanley says. "They should consider how they want to pass along this asset — or break it apart after their death."

## REVOCABLE LIVING TRUSTS AND WILLS

A good place to start is understanding your organization's size and structure.

"Be aware of what sort of business you have," Shanley says.

How big is the company? How much is the owner involved? What is the ownership structure? Is the owner a sole proprietor,

partner, member of an LLC, or stock owner in a corporation?

Once owners understand the key elements of their business, they can take the next steps. One of these steps is to ensure that someone can act on their behalf and continue business operations if they die or become incapacitated unexpectedly. Most likely, business owners grant this authority as part of a revocable living trust, an estate planning tool that determines how assets are handled after death. Compared to a will, a trust has several advantages. Trusts provide more depth than wills and are more fluid as circumstances change. Additionally, trusts are more private.

"Wills are public documents. If you want to announce to everyone in the world how your business is being broken down, then write a will," Shanley says.

Many trusts are effective immediately when signed and funded. These are often referred to as living trusts because they are in effect while the person who created the trust is alive, and the same trust continues to be effective after that person dies.

"A will, on the other hand, is a document of the dead," Shanley says. "It is a document that only has power and relevance when the drafter of the document has died and a court of law verifies that it is, in fact, the last will and testament of the drafter."

This doesn't mean that all trusts will be in effect immediately or that trusts that would wait until death would go into effect quicker than a will. Both wills and trusts wait until death to become active, and therefore someone will need to prove that the death has occurred.

"Generally speaking, using some form of trust mechanism is going to allow for more responsive authority transfer if you have a business that relies on a sole owner," Shanley says.

Additionally, there may be benefits to workflow in having the business in a trust versus a will. A trust can often transition administration to a trustee quickly after the death of the previous trustee, usually the business owner. A will, on the other hand, will need to be verified by a court, which may take longer to complete.

Shanley offers two items to consider for business owners with a will.



“Make sure your personal representative knows where your will is in order to move as quickly as possible, and be mindful of who the personal representative is because that individual will have the authority to run your business,” he says.

With a trust, business owners can select individuals as standby trustees, granting them the authority to finalize the company’s sale or transfer. Using a trust to manage property helps to ensure that the business hand-off goes smoothly.

“If the buyer is someone in the family, that’s wonderful. If it’s a key employee, then you have to start thinking about how to keep that key employee, especially in today’s labor market,” Shanley says.

If the business will be sold to an employee, Shanley suggests drafting legal documents to lock in the employee and start transferring the business to him or her.

#### FAMILY TIES

Oftentimes, business owners work their whole lives to build their companies, and they want the organization to stay in the family. If this is the case, they should craft a succession plan for a smooth transition to the next owner in the family.

But what about heirs outside of the family business? Sibling squabbles over the family inheritance happen everywhere. These squabbles can multiply when a family business is part of the estate.

Business owners can preserve sibling harmony — or at the very least, minimize bad feelings — with fully developed estate and business succession plans. These plans outline two important outcomes. The first is how to pass business assets and leadership to the next family member in line, in order to maintain continuous operations. The second is how to fairly distribute assets among the heirs who won’t be part of the business moving forward.

The fair distribution of assets among the heirs can be accomplished in a number of different ways. One relative might buy out

another, or relatives not associated with the family business can be named beneficiaries of a life insurance policy.

“It depends on the goals of the business owner — what’s

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important to them,” Shanley says.

Owners might want as little family friction as possible, so their estate and succession plans need to be crafted for a harmonious outcome. Perhaps no one in the family wants to take over the business. Then the best strategy might be selling the whole business and dividing the proceeds equally among the heirs.

“That can be a very viable succession plan,” Shanley says.

## EXPERT ADVICE

However, a small mom-and-pop business, where the owner does most of the work, probably isn’t salable because the key employee is the owner. Still, the business owner’s estate plan will reflect his or her wishes regarding the sale or distribution of equipment, facilities and other assets.

“Because you have so many options and so many goals, every estate and succession plan is its unique thing,” Shanley says.

He recommends talking with an attorney, instead of relying on legal advice from the internet, to develop highly personalized strategies.

“You’re going to want a knowledgeable adviser to help you through that process,” he says.

People tend to think that they need a certain amount of money to benefit from talking to a lawyer about an estate plan, but Shanley disagrees.

“Everyone should do that. But the more money you have, the more the need increases,” he says.

A multi-million-dollar business has complex issues involving spouses, heirs and estate taxes.

“You’re going to need a sophisticated plan to reflect these sophisticated needs,” Shanley says.

Estate tax and gift tax laws are complicated and subject to change, so expert advice is critical. The Tax Cuts and Jobs Act is a good example. Business owners who have close to \$5 million or more in assets should be aware of the potential for the Tax Cuts and Jobs Act to sunset in 2025. Enacted in 2017, the legislation allows a person to avoid paying federal estate tax on up to \$10 million in assets, adjusted for inflation and doubled to \$20 million if the person is married. If Congress doesn’t act on this legislation before it expires at the end of 2025, the federal estate tax exemption reverts to \$5 million in total assets per person, adjusted for inflation.

Business owners who are at the \$5 million value for a taxable estate may want to take advantage of current tax laws to transition out of the business — or at the very least, be aware of the estate tax exemption as 2025 approaches.

“The most sound advice is to start planning now. No matter what takes place in politics, take advantage of the laws in effect right now,” Shanley says. “Be sure to schedule time with an estate planner or succession planner in order to start working through these issues.”

Shanley tells business owners to thoughtfully determine what they envision for the future of their business.

“Take a moment to form that initial plan, and find an adviser that you trust. Inform them of your values and general desires, so that the adviser can ask questions and provide depth and sophistication,” he says. “What are your values, and how do you want people to benefit? You need to have the big picture drive the little picture.”

## PLANS CAN CHANGE

Business owners also need to change the plan as circumstances evolve from the company’s Day 1 to, say, its Year 25.

“The more your business demands attention and has more business assets, your plan needs to match that sophistication. As the business grows, the estate plan should grow with it,” Shanley says. **c**

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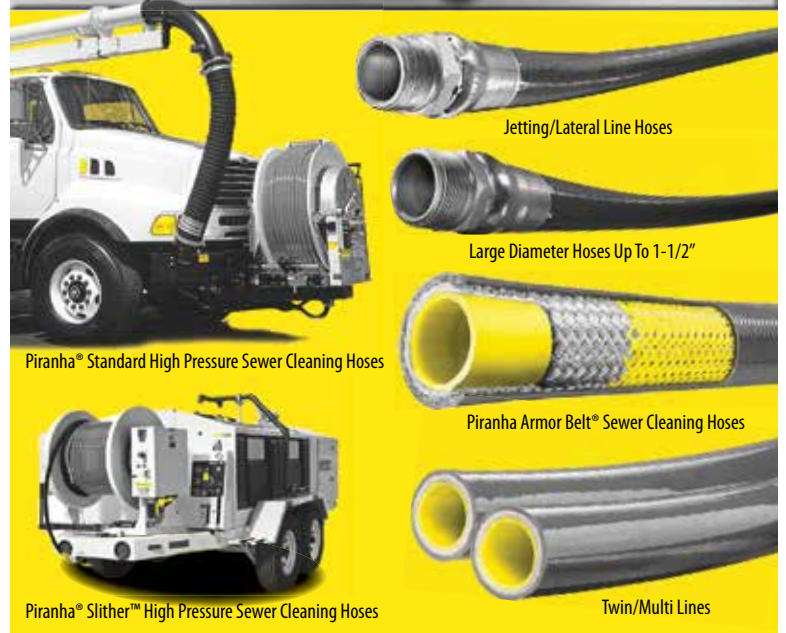
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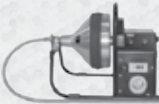
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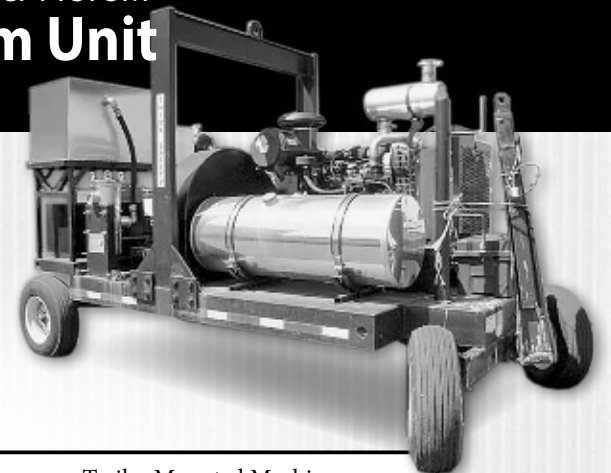
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### MILLING CUTTERS POWER THROUGH THE MOST SEVERE BLOCKAGES

By Craig Mandli

It doesn't happen often, but municipalities and contractors sometimes confront severe obstructions that even the highest pressure nozzles can't cut through. That's where SewerProShop's milling cutter options come into play.

Generally, milling cutters are capable of removing the toughest obstructions where other sewer cleaning equipment fails, such as tuberculation from cast iron pipes, mineral deposits, concrete, calcified grease and collapsed liners.

SewerProShop's milling cutters, which have been precision-engineered and manufactured by Buehler for over 40 years and upgraded by Intersewer in Germany since 2015, are distributed and maintained by SewerProShop to municipal and industrial markets in the U.S. According to Reinhart Laimer, president of SewerProShop, the cutters have effectively gotten hundreds of clients out of clogged pipe pickles for years.

"I've performed countless successful demos since 1997, removing tuberculation, pumice, concrete, mineral deposits, calcified grease and failed liners from sewer lines without damaging even clay or plastic pipes," Laimer says. "The stainless steel drives of the Intersewer milling cutters aren't operated by percussion but uniform forward propulsion."

According to Laimer, to avoid pipe damage, it is important that the right-sized milling cutter is chosen before starting a job. Cutters are available for 4-, 6-, 8-, 10-, 12-, 15-, 18- and 20-inch sizes.

"Experience is always helpful when working with such a sophisticated tool," Laimer says. "To successfully operate milling



cutters, you need to have 60 to 80 gpm at 2,000 psi available. They also have to be completely inserted into the sewer pipe before you start the job. Never slam the high-performance tool against the obstruction. Instead, let the milling cutter do the work. It's also very important to remember that milling cutters can only be operated in straight pipes, not elbows."

The stainless steel milling cutter drives with double-sealed, high-speed bearings that don't need lubrication, ensuring years of low maintenance. They can be operated with recycled water as well. The tough carbide bits are bonded onto stainless steel bodies, with the center bit water cooled. The 6- and 8-inch milling cutters can easily be converted to barrel cutters to cut protruding laterals.

"Cleaning sewer pipes with milling cutters is about evaluating each situation," Laimer says. "It is definitely more cost-effective to remove severe obstructions using milling cutters compared to replacing entire pipes." 877-864-9394; [www.sewerproshop.com](http://www.sewerproshop.com)

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# PRODUCT NEWS



2

## 2 // PATTERSON MANUFACTURING DAVIT CRANES GIVE OPERATIONS A LIFT

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3

## 3 // RIDGID SEESNAKE MINI PRO INSPECTION CAMERA

RIDGID, a part of Emerson's professional tools portfolio, introduces the SeeSnake Mini Pro inspection camera with TruSense technology. The small, yet rugged Mini Pro is designed to inspect up to 200 feet of 1 1/2- to 8-inch pipe with its mid-flex push cable that can navigate hard 90-degree bends. Its innovative 25 mm digital self-leveling camera always keeps the in-pipe image upright and is shorter than the traditional 25 mm camera head. **800-474-3443; [www.ridgid.com](http://www.ridgid.com)**

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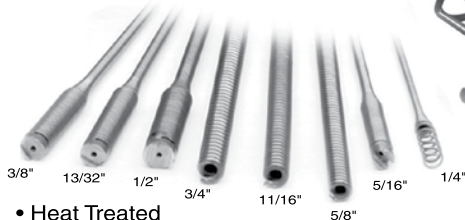
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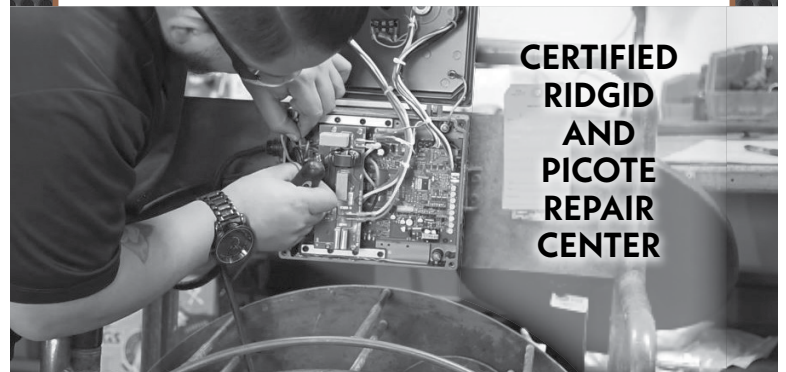
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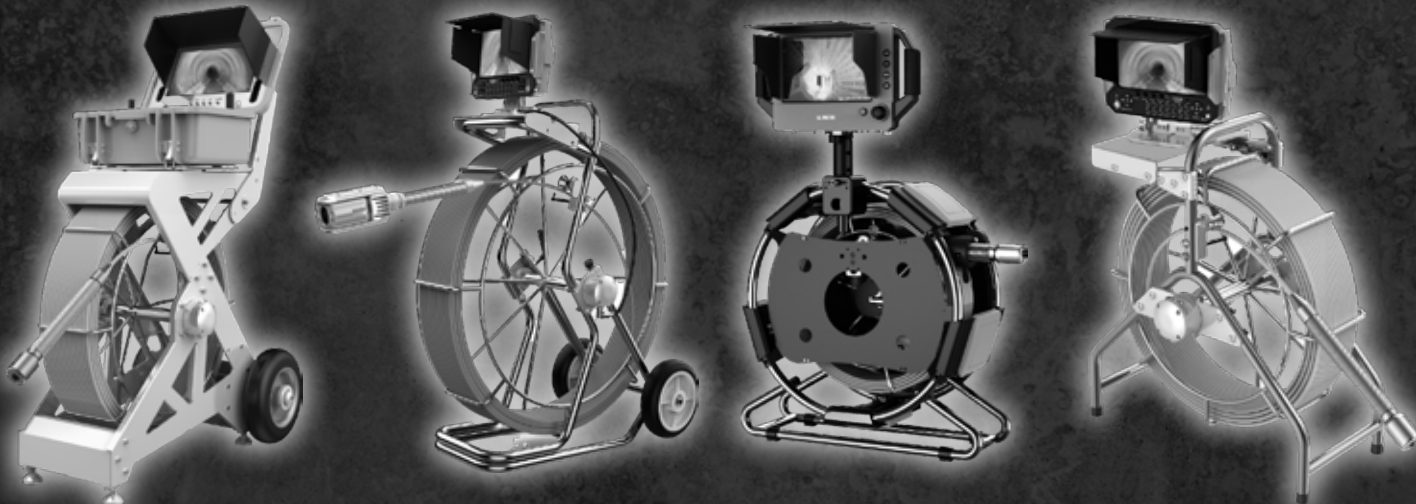
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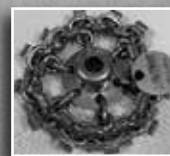
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