

Choose your path forward

Giving you the tools to tackle any job

As the sun peeks over the horizon, the fresh morning light casts a serene glow over your vast jobsite. At this moment, there is a brief feeling of peace and tranquility. But in this business, you know those moments don't last.

Soon your crew will arrive, the engines will rev up, and the percussive clatter of frenetic work will form the soundtrack of your day. And you already know today is *one of those days*.

You're working on the site of a future residential development on the outskirts of town. But before the buildings can rise from the ground and the first roof can be placed over a resident's head, the proper infrastructure must be in place.

That's where you come in: Your crew is installing the underground water and sewer utilities. It's a big job, a demanding job, and a job that is difficult to do right. It must be done with precision. It must be done before deadline. And it has to be done under budget.

It's a tough challenge to meet — thankfully, you have the tools that can help you do it.

DELIVERING PEAK PERFORMANCE EVERY DAY

Enter the 644 X-Tier Mid-Size Wheel Loader, a machine that is built for the times you need peak performance and efficiency.

The 644 X-tier is purpose-built for occasions just like this — ready to take on the heavy lifting all day, every day. It possesses the strong pushing power and fast ramp-climbing ability to thrive in difficult conditions. And on this jobsite, you are putting it to the test.

The machine lifts excess material from dug-out trenches and loads it into trucks that take it offsite, keeping the line moving and the project on schedule. It also backfills trenches with crushed gravel, carrying out the task with speed and skill. With an abundance of material to move, and limited time to get it done, this is the precise moment when a cutting-edge machine is needed.

But it's not just about *what* the machine gets done, it's about *how* the 644 X-tier does it. It possesses the state-of-the-art technology and features that help get work done efficiently, like an innovative electric-drive system



The 644 X-Tier Mid-Size Wheel Loader is built for the times you need peak performance and efficiency.

(E-Drive) that delivers premium performance and efficiency. The system includes an electric generator plus an inverter to control the electric motor that drives a simplified PowerShift™ transmission.

It's a workhorse that makes the work feel easy.

It's something you can feel the moment you get in the seat. The operator can control multiple functions from a single, hydraulic joystick. And the spacious cab provides plenty of legroom and the space to make the operator experience as comfortable as possible — a necessity when you're logging long hours on busy, fast-paced days.

Part of the beauty of this machine: It accomplishes so much more while also using less. The 644 X-tier was built with next-level efficiency, burning less fuel than competing machines.

The 644 X-tier never seems to tire, delivering exceptional results from sunup to sundown without slowing down. It was designed to accomplish just about *anything* you ask it to do. But on your jobsite, within the framework of your operation, it doesn't have to do everything.

OFFERING THE SUPPORT YOU NEED

The 184 G-Tier Compact Wheel Loader plays an important supportive role. It's the type of machine that you can call on when needed.

Built for everyday work, the 184 G-tier is an economical machine that reliably gets the job done. Meanwhile, its ability to seamlessly utilize multiple attachments means the 184 G-tier can take on a variety of tasks.

This versatility is on display as the machine uses forks to move pipes around the site. Its compact stature is a competitive advantage, allowing the 184 G-tier to capably maneuver in tight spaces and navigate a range of working conditions. On top of that, it packs plenty of power and torque reserve.

The 184 G-tier is the perfect complementary piece on your jobsite. And with a large fuel tank, it can keep doing its thing for longer.

The 184 G-Tier Compact Wheel Loader is a machine built for the real world, where companies have to stay within budget and cannot spend at will. It's an economical machine that produces results and offers value at the same time.

Working together, the 644 X-tier and 184 G-tier represent the perfect pairing, operating in harmony to collectively carry out your multitude of tasks.

The two machines also underscore a philosophy central to the John Deere mindset: You don't have to cater your work to the machine. Instead, we have the right machine to get the work done for you.

On your jobsite, amid the flurry of expectations and challenges, you need options. When you're given the right choices, you can navigate any conditions and overcome any obstacles. You can take control of the chaos.

We give you the options to choose your own path forward.

As the sun sets and the day draws to a close, there's a brief moment of respite and an acknowledgement of a job well done. Your project is back on schedule and still under budget. You're closer to the finish line.

Tomorrow will bring another flurry of challenges. But you're ready to take them on.

LOADS OF OPTIONS. ZERO COMPROMISE.



NEVER IDLE

You can't always choose the deadline. But you can choose how you get the job done. That's why we offer distinct levels of innovation, comfort, and performance to help you get done faster, more efficiently, and on budget.



G P X

 JOHN DEERE

DEERE.COM/TAKEYOURPICK



STRAIGHTEN AND RE-ROUND COILED PIPE WITH MCELROY LINETAMER®

No matter the scope or application of a project, workplace safety, efficiency, and cost savings are constant factors that are critical to a successful job. And on jobs that utilize coiled pipe, operators can boost all three by using McElroy's LineTamer.

The LineTamer straightens and re-rounds coiled 2-inch to 6-inch (50mm to 160mm) pipe. This type of pipe is primarily in the natural gas industry, but is also found in applications for water, propane, conduit, and oil and natural gas collection. It works by removing the coil set of a pipe by forcing it through a system of rollers. And because it safely and quickly removes that coil set within the pipe, it can increase the installation speed of PE pipe, conduit, and duct as much as 400% when compared to installations utilizing sticks of pipe. Even better, operators can install as much as 1,000 feet (304.8m) of pipe with a minimum of two fusions.

For example, a 500-foot (150m) installation of 4-inch HDPE would require about 10 fusions if using 50-foot sticks of pipe. Each joint takes about 10 minutes, including both cooling time and the time to load the pipe into the fusion machine, for a total of about 100 minutes to complete the entire 500 feet.

Compare that to a 500-foot roll of coiled pipe, which would need only two of those 10-minute fusions. When combined with the amount of time it takes to straighten and re-round the pipe, the total time for that 500-foot installation is about 27 minutes – less than one-third the time of traditional stick pipe. Less time

spent on fusion joints means lower overall project cost in terms of equipment and manpower.

Those savings were apparent for the Arkansas Oklahoma Gas Corporation, a company based in Fort Smith, Arkansas. The LineTamer was instrumental in increasing productivity for AOG, which works with long runs of pipe. In the field, the LineTamer meant crews no longer had to make a fusion every 40 feet (12.2m).

Because coiled pipe is used primarily in the natural gas industry, it's critical to ensure sidewall fusion can be done in the pipe during or after its installation as services are added onto that branch. As a re-rounder, the LineTamer meets or exceeds ASTM D 2513 ovality requirements, which allows operators to work knowing they will be able to perform quality sidewall fusion on that re-rounded line.

From a safety aspect, The LineTamer greatly reduces the risk of injury while uncoiling the pipe in the field, particularly when combined with a trailer specifically designed to work alongside the LineTamer.

Two models of the LineTamer are available: one for 2" IPS coiled pipe and a larger model for 3"-6" IPS pipe. Both models offer controls that are easy to operate, including re-rounding controls and pressure gauges that are easy to read. With distributors available worldwide, McElroy continues to lead the way in providing rugged and efficient solutions no matter the location or the application.



The
FUTURE
OF FUSION



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THE WEEKEND.

Productive equipment helps you be more efficient on the job. McElroy's line of fusion machines and accessories has been trusted on the jobsite for over fifty years for that very reason. Finish your job in less time, with the confidence and data that it's done correctly.



The LineTamer® cost-effectively straightens and re-rounds coiled pipe to meet ovality requirements for a quicker installation.



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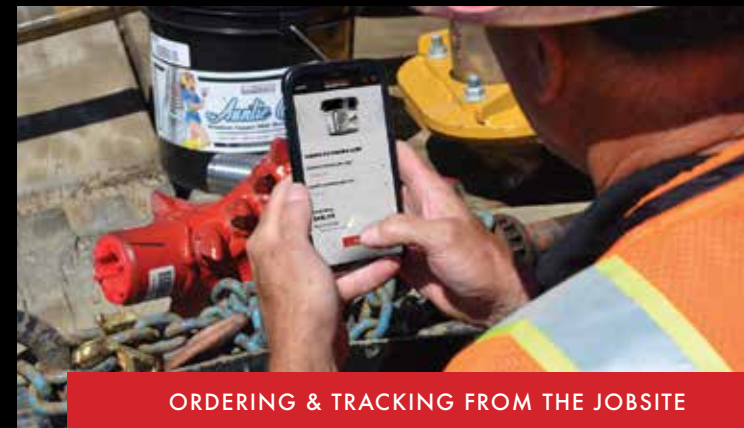
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Mud Dog® Vacuum Excavators: Dig Safer, Dig Smarter

In the U.S., a utility line is hit every six minutes causing power and utility disruption, injuries or death. Digging safer and smarter means utilizing vacuum excavation. Mud Dog® Vacuum Excavators are designed to meet the challenges of compact, urban projects to large-scale excavation, potholing and trenching projects. Regardless of the task they are utilized for, vacuum excavators offer versatility, as well as safety and productivity on the jobsite.

VERSATILITY

Mud Dog Vacuum Excavators come in a variety of model configurations to tackle many applications in various settings. The 700 offers a compact footprint for excavation in urban environments while maximizing payload and maintaining the power and precision that larger units offer. The 1200 offers consistent performance and precision for excavation during mid to large-scale projects. The 1600 is the largest vacuum excavator in the industry. This unit offers maximum payload and performance for large-scale excavation in the harshest environments; no project is too big or too tough to tackle.

SAFETY

Large, traditional machinery and abrasive excavation methods can increase jobsite and operator risk. Due to the precision and non-destructive nature of using compressed air or pressurized water, vacuum excavation is the safe solution. With the Mud Dog, an operator can choose to dig with the best application, water or air, for the job at hand. Hydro excavation utilizes high pressure water to break up solid materials and is effective in any soil condition, while air excavation utilizes compressed air to break up materials and is ideal for sensitive debris removal applications where any sort of water introduction would be counterproductive or damaging. Utilizing water or air to dig, allows operators to remain safe and reduces the risk of puncturing a line.

PRODUCTIVITY

When cables, utility lines or water mains need to be repaired or excavation is required in hard-to-reach areas, vacuum excavation can be utilized. Mud Dogs come with an extendable,

8-inch diameter boom that rotates and pivots downward. This means that units do not need to be readjusted and can be located away from an excavation point. This minimizes the impact and restoration on a jobsite and eliminates traffic congestion near roads.

Mud Dogs also come with other features to ensure efficient workflow and increase productivity, including variable blower and water pump speed. This allows for increased digging effectiveness, water conservation and fuel efficiency.

PARTNER WITH SUPER PRODUCTS

Partner with Super Products for your next excavation project. Super Products has the support network and products to keep your team safe and productive on the jobsite.

Super Products has a broad nationwide network with representatives supporting contractors, dealers supporting municipalities and rental facilities supporting short- and long-term rentals, parts and service.



Mud Dog® VACUUM EXCAVATORS



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Super Products LLC is a leading manufacturer of vacuum trucks for a wide variety of applications for industrial customers and municipalities. 800.837.9711 | info@superproducts.com | www.superproducts.com



5000' HDD Crossing through Mayan archeological sites

By Michael NG (ATB HDD Consultant & steering engineer) and
Tyler Price (Marketing Director for Underground Magnetics)



Pemex (Petroleum of Mexico), IS-Machines HDD, Construcciones Sigma, Sareal, and Underground Magnetics are putting the HDD industry on the map in Mexico. Tasked with scaling the Mexican oil industry into a powerful economic machine, they have accomplished several high-level installations (including some record HDD crossings) that are key to the functionality of the pipelines connecting oil wells to refineries.

THE CHALLENGE

The most recent challenge was a 5000' crossing for the installation of a 24" steel oil pipe. Directly in the path of the pipeline were protected nature reserves, Mayan archeological sites, and other sensitive areas. Due to the strong rainfalls during the hurricane season, the companies faced extreme terrain and weather conditions. These conditions made navigating the project one of the toughest in its class.

NO ROOM FOR ERROR

Given the conditions of the project, IS-Machines knew there was no room for error and made it a priority to use the best wireless locating technology on the market. They reached out to Stefan Rodriguez with Underground Magnetics (UMAG) to find a solution to their issues of terrain, depth, distance, and interference. As a regional sales manager for the southern region of the US, Stefan was able to set the company up with the right equipment for the job. The Mag 9 receiver was paired with the Echo 60 transmitter to provide them with the tools necessary to execute a precise pilot hole under these difficult conditions.

The 5000' pilot hole was completed in an astonishing time, just 6 days. IS-Machines noted that the UMAG locating technology was the best in its class. The Mag 9 and Echo 60 enabled them to run at depths of 60' while maintaining an accurate location of the drill head at all times. With 160 hours of battery life in low power mode, the Echo 60 was chosen to sustain the power needed throughout the duration of the job. The locating system proved to be fast, reliable, and easy to use, providing precise tracking at unmatched depths and distances. IS-Machines HDD engineers emphasized the importance of using only the best tools available when taking on high level projects stating, "There is no room for errors in HDD crossings, if you want to play in the major leagues of HDD pipeline installations, you must work with nothing but the best equipment on the market."

These five companies continue their quest of reaching higher achievements in the pipeline installations. They have a full schedule filled with new challenges that will continue to test the available equipment needed to complete mega projects.



Underground Magnetics Mag 9 receiver being used to guide the drill head.



Initializing drilling activities for pilot hole



ECHO-50XF

2 IN 1 TRANSMITTER

The **Echo-50XF** eats **heavy rebar** and **wire mesh** for breakfast. When it comes to **passive interference**, this is the only transmitter you need. With **16 frequencies** (.325kHz - 41kHz) and **two power levels** this will be your go-to for almost any job. Call to schedule your demo with the Mag 9 or Mag 5s and Echo-50XF.

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simple. powerful. affordable

Vac-Con X-Cavator CXT Ideal, Efficient Vacuum Excavator for Contractors, Municipalities

The legacy Vac-Con vacuum excavator – the X-Cavator CXT – is a simple, user and maintenance-friendly unit ideal for contractor and municipal operations.

The overall design of the CXT is based off the hydrostatic drive system, allowing for the elimination of blower idle time. Unlike direct-drive traditional units, the CXT blower does not start turning until the water or vacuum systems are engaged. This decreases the amount of heat being generated from an idling blower and extends the life of the component.

Independent control of the water system is hydrostatically driven from the front PTO and rated for 20 GPM at 4,000 PSI.

The CXT is available with either a positive displacement blower or 3-stage centrifugal compressor fan to power the vacuum system. Dual cyclonic separators and a removable cartridge and final filter housing comprise the filtration system.

A simplified passenger side mounted control panel features throttle switch operations for all unit systems. The CXT is also available with a wireless remote that controls all system functions. This

device features integrated batteries inside of the remote control, which are charged magnetically on the cab dashboard. These are considered permanent batteries that don't need replacing and are safe from environmental corrosion and dirt. In addition, the elimination of a battery compartment reduces entry points for water, which can quickly decommission a remote control.

Components on the CXT are easily accessible and centrally located, ideal for maintenance needs. Water pump components are available behind a removable panel located just below the mainframe. The blower is located at mid-body with an eye-level fluid indicator, eliminating the need for operators to go under the truck to verify levels.

An optional catwalk component is available to be mounted onto the side of the debris tank. This feature is ideal for simplified hydraulic and boom maintenance access.

The CXT is available with up to 1,300-gallons of water capacity in cross-linked polyethylene water tanks that carry a standard 10-year warranty.

Upgrade the CXT with the telescoping PowerFlex boom option, designed to give the

operator a greater range of motion and control. The PowerFlex boom is an innovative component that boasts a total reach of 28-feet in length, 34-feet of upward lift, 110-degrees of articulation, and 315-degrees of rotation. Top-mounted on the debris tank, PowerFlex can be operated at the front, sides, and back of the machine. PowerFlex allows the operator to work difficult angles and covers more ground than a traditional boom. The ability to sweep and rake with the boom is great for long trenching. In addition, PowerFlex is easier to operate than boom hoses made of 'flexible material,' which require a lot of manual handling and management.

The capabilities and power of the X-Cavator CXT are designed to make the operator's job easier, while bringing the best in power and performance to the job. The CXT is available in a range of configurations and options ready to meet the demands of any operator, any application, any jobsite.

To learn more about the X-Cavator CXT as well as the full portfolio of Vac-Con vacuum excavators, visit www.vac-con.com or call us at (904) 284-4200.



X-Cavator CXT
Hydrovac Truck

DAMAGE PREVENTION STARTS WITH VAC-CON.

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Learn more at www.vac-con.com

Minimize Social & Economic Costs while Sliplining

With an estimated yearly market of over \$3.6 Billion USD, sewer and water districts are taking a closer look at sliplining to replace the vast amount of aging underground infrastructure. While sliplining is one of the oldest and simplest forms of trenchless rehabilitation, new installation technologies have allowed contractors to slip line large diameter pipes while minimizing surface disruptions, avoid bypass pumping, and improve flow capacity. After developing a successful prototype in the early 90's, pent-up demand triggered Akkerman engineers to reinvigorate existing designs to develop a new modular sliplining system required in congested urban areas.

The Akkerman SLS-100 sliplining system is designed to minimize the social, environmental, and economic impacts required in trenchless technology. Once a pipe has been inspected and deemed a candidate for sliplining, the host pipe is thoroughly cleaned and cleared to accept the new carrier. To minimize disruption a large laydown area can cause when using traditional pipe such as HDPE, FRP pipe is commonly used

with deep installations. A launch shaft that is approximately 10ft longer than the product pipe must be excavated and the top 1/2 of the host pipe removed allowing the SLS-100 to be set. Equipped with 130-ton of bi-directional thrust, the SLS-100 can simultaneously slip line in both directions while

the operator controls all pipe movements via a remote-controlled belt pack with digital display. Since the sliplining process can be carried out without costly issues of bypass pumping, friction forces are significantly reduced. This leads to longer and more successful trenchless installations.



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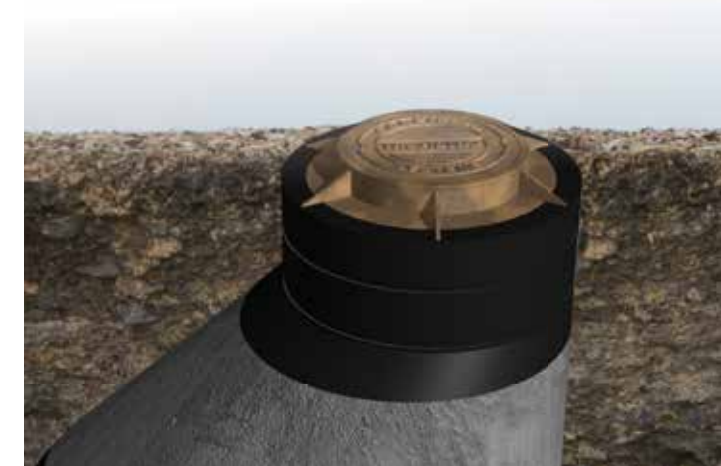
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MANHOLE ENCAPSULATION SYSTEM

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- Bulk Rolls, Field-Cut to Size
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- Improves Structural Integrity
- High Tensile & Elongation
- Cost Effective
- Fast & Easy Installation
- Complete Coverage Prevents I & I



WrapidSeal™ Manhole Encapsulation System consists of an engineered primer and a unique wraparound heat-shrinkable sleeve designed specifically to seal joints and prevent groundwater from entering a collection system. WrapidSeal™ is supplied in bulk rolls of varying widths and consists of a cross linked polyolefin backing, coated with an aggressive heat activated adhesive. A separate closure is used to create a complete sleeve with the adhesive effectively bonding to the substrate, providing corrosion protection and adhesion for the impermeable backing.

WrapidSeal™ can be utilized on both new construction and for rehabilitation of existing manholes. An engineering study involving manhole rehabilitation states that, "partial replacement also is effective where rehabilitation is limited to within the manhole's top 12 to 24 inches." This top portion of the manhole is where WrapidSeal™ performs particularly well, due to its unique ability to conform, seal, accommodate movement, and provide structural integrity.



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SERVICES**

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