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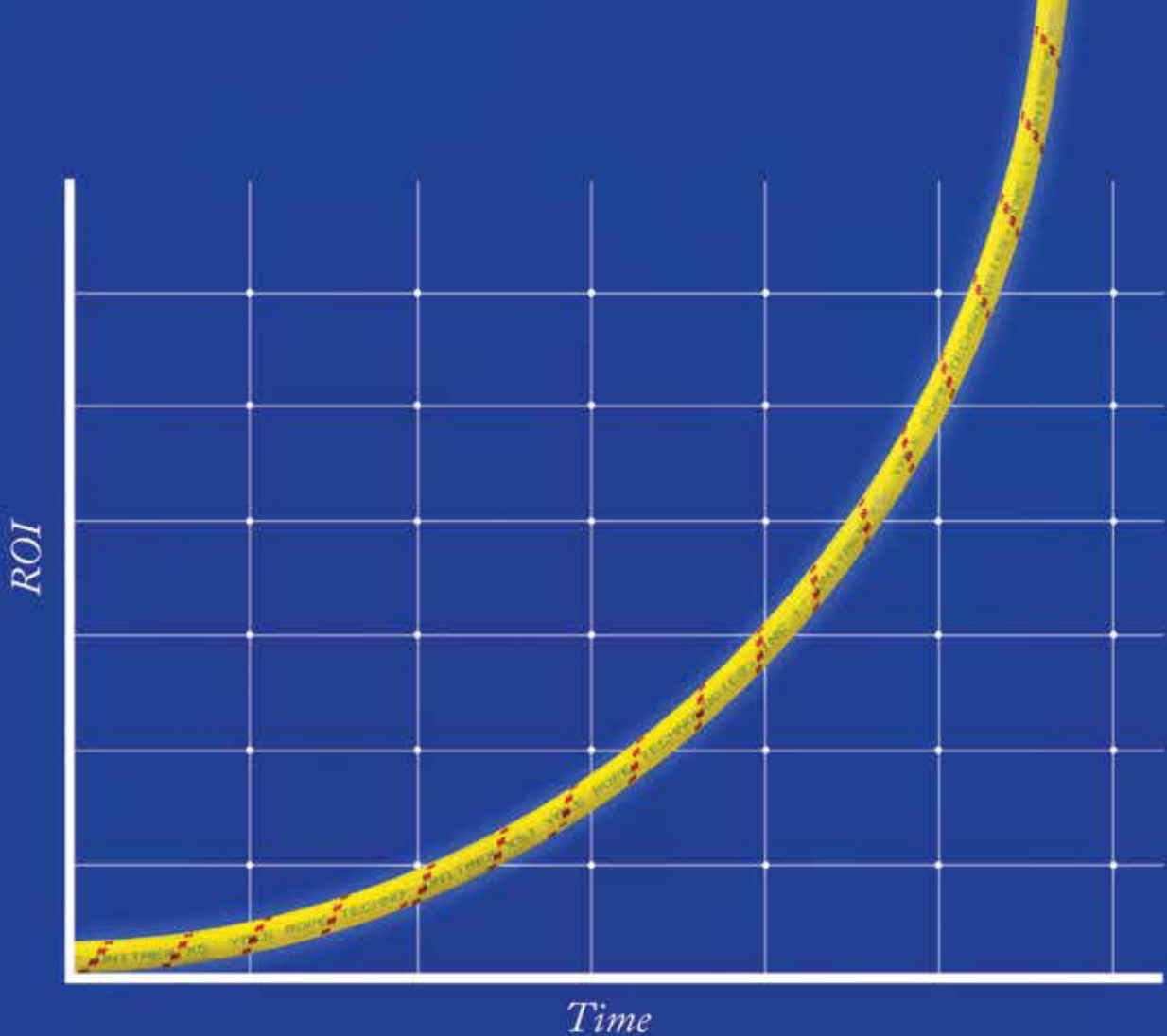
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Skyward Releases Advanced Airspace Intelligence for Enterprise Drone Operations



Skyward advanced airspace intelligence offers critical safety data to mitigate environment-related risk and improve drone flight safety for drone pilots, including 3D views of key structures, transmission lines and more.

3D vertical structures, obstacles, and digital airspace access to improve drone flight safety

Today, Skyward, A Verizon company introduced advanced airspace intelligence for drone pilots. Skyward's drone airspace map provides a clear design, airspace data, and LAANC access, now combined with essential ground intelligence including 3D views of key structures, transmission lines, and more than a million vertical obstacles. Drone pilots in the field need to know how the surrounding area, including infrastructure, could affect flight, and Skyward offers this critical safety data to all users.

"Showing airspace is important, but it's only part of the picture. The more intelligence that is available to understand how an area will affect the flight, the less risk a pilot has in the field," said Mariah Scott, president of Skyward. "Skyward Airspace Intelligence is the only solution that provides easy-to-understand data for things like transmission lines, runways, over a million vertical obstacles, and a 3D view of key structures. It's the next best thing to physically being in the field."

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Skyward, a Verizon Company, releases advanced airspace intelligence for drone pilots, combining airspace data and LAANC access with essential ground intelligence to improve drone flight safety.

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Skyward Airspace Intelligence is part of the complete workflow that enables pilots mitigate weather, environment, and business-specific risks. For more information about Skyward Airspace Intelligence, please visit: skyward.io/new-airspace-intelligence

About Skyward, A Verizon company
Skyward combines industry-leading expertise, digital airspace access, regulatory advocacy, and wireless connectivity to power today's drone flights and tomorrow's networked fleet deployments. Founded in 2012 by computer scientists, career pilots, and military veterans, Skyward provides a comprehensive drone management and airspace intelligence platform for companies that fly drones commercially. For more on Skyward visit **www.skyward.io** •

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Speedy Repair or Replacement of Curb Boxes Damaged by Acidic Soil

Polyurethane parts prolong service life, do not corrode like cast iron

For municipal waterworks supervisors, keeping curb boxes in good working order is critical. But this job can become even more complicated by the prevalence of acidic soils across the U.S., which accelerates corrosion along with costly repair and replacement.

Traditionally, a curb box is composed of a metal tube that connects the cast iron base to a cast iron lid/ cap. It is necessary for water line repairs (or shut off in case of non-payment) and is typically buried 6-8 feet below ground, beneath the frost line. Curb boxes are found on every residential water line that connects a home to a city water main.

The challenge is that many areas across the U.S. – including the East Coast, South, upper Midwest, and Pacific Northwest – have acidic soil that rapidly corrodes cast iron infrastructure, including curb boxes. Soil with a pH of 6 or less is considered acidic.

While soil can typically range in acidity from 2.5 to 10, pH levels of 5 or below can lead to extreme corrosion rates and premature pitting of cast iron infrastructure



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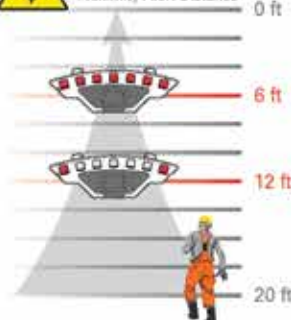


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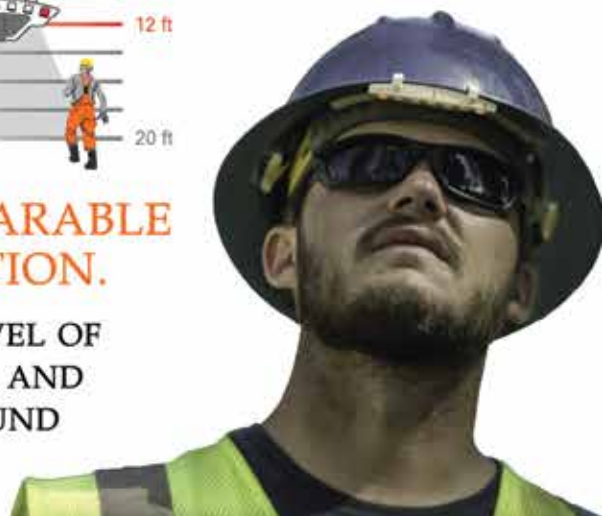
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and curb boxes buried in the soil. Even coatings intended to protect cast iron begin to dissolve when soil pH is around 4, which leaves curb boxes vulnerable to corrosion that makes them unusable.

“We have an electrolysis problem in the acidic soil here, and it eats up the pipe. Even though we put a stainless steel rod on it [the curb box], that stainless steel rod doesn’t do any good when you have a pipe that’s rotting out where we can’t get to it,” said Bob Krueger, a systems operator at Waverly Sanitary District in Menasha, Wisconsin, which had hundreds of curb boxes in need of repair.

Fortunately for municipal waterworks departments, an easy repair that takes minutes can dramatically prolong curb box service life using polyurethane parts that do not corrode even in acidic soil.

Because corrosion due to acidic soil can also compromise the entire curb box/curb stop apparatus, a growing number of industry professionals are also turning to replacement kits that utilize polyurethane, which can make the whole system impervious to corrosion and premature replacement.

Stop Acidic Soil Corrosion, Prolong Service Life
The more acidic the soil, the sooner cast iron curb box caps will corrode, making it difficult or even impossible to access the water shut off valve. Typically, the curb box cap will “freeze up” due to corrosion. Then when a waterworks technician tries to remove the cap, he or she will either break the nut or the cap.

The common curb box cap repair procedure is to dig a wide, deep hole around the broken equipment, cut the cast iron tube below the affected area, and splice an extension (either by manually threading the broken pipe and using a threaded coupler or by using a coupler with two set screws then replacing the cast iron top). However, this



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takes hours and still exposes the curb box to the possibility of corroding again in a few years.

If acidic soil corrosion has affected the curb stop, the lower portion of the curb box that houses the water shut off valve, then a more extensive repair is required. Often, this can require a work crew using heavy equipment like a backhoe to dig out and replace the entire curb box/curb stop apparatus, adding hours of additional labor.

In response, Krueger and the Waverly Sanitary District first turned to a non-corroding, quick repair curb box product made of polyurethane called Speedy Sleeve from Argonics, a Michigan-based design and manufacturing firm specializing in high-performance materials.

The product enables repairs of the corroded or broken top portion of curb boxes in minutes to provide access to the water shut off valve, and

was specifically engineered for extended use, low maintenance, and easy installation. The polyurethane is superior to cast iron because it will not rust or corrode even in acidic soil. It will not shatter or crack like plastic, cannot be damaged from impact with lawnmowers or plows, and despite extreme cold it remains pliable.

The sleeves are six to eighteen inches in length with two small fins. The top opening is sealed with a cap that will never seize like rusty cast iron. To install, cut off the top of the old pipe and then slip on the sleeve. To get a snug fit at an appropriate level—above or below ground—dig out around the pipe and then tap down with a hammer. The fins stabilize the device in the soil so that it won't twist or move due to frost heaving. They are always easy to locate because the cap is designed with an embedded magnet.

After successful use of the sleeves for quick repairs, Krueger and the Waverly Sanitation District also utilized Speedy Sleeve poly curb box systems to replace a large number of systems that

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had corroded and were no longer viable. When used with off-the-shelf PVC piping, these replace the entire curb box/curb stop apparatus with a polyurethane alternative to cast iron that will not corrode in acidic soil.

The Waverly Sanitary District in Menasha, WI installed the poly curb box systems because the acidic soil was corroding their cast iron curb boxes, requiring them to be replaced every 5-10 years.

"We were looking for something [curb box] with a lot more lifespan than 10 years," says Krueger. "We like it [the curb box] because...it's a non-corrosive product...and because of the ease of installation. These boxes installed easily, they're easy to adjust, and they don't rely on metal threaded couplings."

The simplicity of the design enables adjusting the height of the Speedy Sleeve repair kit and complete curb box system to the desired final grade in seconds. Both are engineered to be installed with ease in concrete driveways and sidewalks.

Unlike proprietary cast iron repair tops and bottoms which often vary in thread pitch so they cannot be mixed and matched, the Speedy Sleeve units have a universal design that accommodates most industry variations and adjusts to height, which minimizes required inventory space.

With the lifespan of aging municipal waterworks infrastructure being shortened by acidic soil conditions in many parts of the country, proactive supervisors will increasingly extend service life, reduce maintenance, and ease installation by turning to polyurethane alternatives that will not corrode.

For more information about the Speedy Sleeve and other products, contact Argonics at 800-991-2746, information@argonics.com or visit **www.argonics.com** •

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OUTSTANDING IN THE FIELD

Three Ways to Increase Efficiency with Power the Loop Technology

“The ability to power a hard loop off of the AMS Trex unit is huge. We no longer need to have an additional power supply or loop simulator on hand, whether it’s out in the field or back in our shop. It’s a huge advantage for the technician.”

Joel Holmes, Monsanto

Organizations are relying more than ever on devices that monitor equipment in the field. As a result of the increasing demand for data, the number of devices that a plant needs to manage is constantly increasing. While increased access to diagnostics is a blessing, the increased pressure of maintaining these devices is not always a welcome change for the technicians who are responsible for their installation, configuration, and maintenance.

For technicians to deliver top-tier reliability on critical equipment, they must be given top-tier tools. The right equipment will give technicians more flexibility in both the field and the workshop, helping them to save time and feel more confident about the repairs and configurations performed on a day-to-day basis.

Emerson’s AMS Trex Device Communicator helps technicians achieve faster configuration and troubleshooting on the bench or in the field. With Power the Loop technology, technicians can perform critical diagnosis and configuration tasks without the need for an external power supply or loop simulator - allowing more flexibility and efficiency in daily operations.



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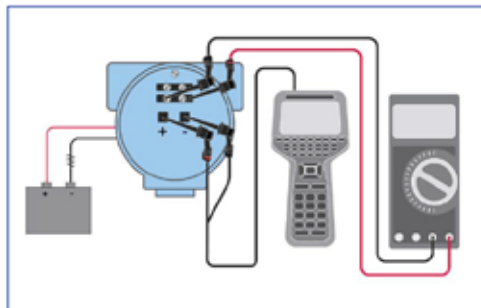
The Cluttered Workshop

A process plant can be a harsh environment; as a result, devices will occasionally need to be returned to the shop for evaluation, repair, or configuration. Unfortunately, connecting to a device in the shop to check configuration and functionality is a cumbersome process that eats up valuable man-hours.

To evaluate a device in the shop, the technician first needs to round up a power supply that is appropriate for the device. This means spending time searching through supply cabinets in order to find the appropriate power source. In addition, the technician needs to verify that the device has adequate loop resistance before hooking up the communicator. All of these steps take time that is frustrating when the plant is operating normally. And if the removal of the device has caused an outage, this time spent rounding up the right parts can be costly.

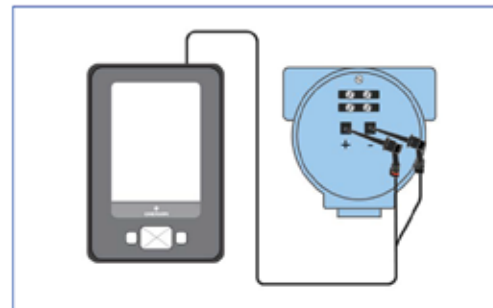
To speed repair and configuration on the bench, technicians need tools that will minimize the external complications of device setup. The Trex communicator's Power the Loop technology enables technicians to configure devices on the bench in a fraction of the time needed with other communicators.

Power the Loop functionality allows users to access a device simply by connecting to the terminals on the device. The Trex communicator functions without the need for an external power supply and provides loop resistance on both sets of connectors. When a user plugs an unpowered device into the Trex communicator, the communicator's intuitive interface anticipates the action and notifies the user to connect the device to the powered terminals. When the lead set is plugged into the powered terminals, the technician can select the option to provide power, immediately making the device available for configuration or diagnosis.



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Fixing in the Field

Repairing a device in the field, either because it can't be brought back to the shop or because a process is down and time is of the essence, presents its own set of complications. A device in the field has access to a power supply and to adequate loop resistance, but what if the problem is the power supply or wiring?

If a device isn't communicating or operating properly due to a problem in the surrounding infrastructure, but the technician can't remove it from that environment, a lot of time can be wasted trying to diagnose what might be a simple problem. Devices in the field are notoriously difficult to isolate from their surrounding environment, which results in many wasted hours if the environment itself is the problem.

Because technicians are frequently in the field, they need to carry a device that simplifies mobile troubleshooting, rather than complicates it. Eliminating unnecessary tools means removing inefficiencies.

In some cases, discovering what is wrong starts with determining what is not wrong. Problems with power supplies and wiring can be difficult to diagnose, as technicians cannot accurately test devices without power. But dragging a power supply and loop simulator out to the field for every repair just to rule out power issues is cumbersome and frustrating.

With the AMS Trex Device Communicator's ability to power a device in the field, technicians can isolate devices from a problem in the environment. Having the ability to isolate a device in the field means being able to rule out common problems such as power issues, wiring faults, or issues with control system I/O or control loop configuration.



Connecting to loop power on the AMS Trex unit is simple and intuitive for both HART and FOUNDATION Fieldbus devices.

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The Configuration Waiting Game

In a new project, power is commonly brought to devices through the control host system. Most of the engineering work must be completed first: plumbing, piping, and wiring are typically installed before technicians can begin configuring devices.

In many cases, instrumentation arrives long before preparatory work is complete. This instrumentation then sits, waiting for the rest of the project to be completed because devices cannot be configured without power. When the time to configure the transmitters finally comes, they have become a critical path item because the project schedule is nearing its end. With deadlines looming, either device commissioning is rushed or project start-up is delayed.

An “all-hands-on-deck” scramble to commission devices in the late stages of a project means risking project delivery delays. The Trex communicator delivers on Emerson’s Project Certainty initiative, with a design focused on adding flexibility in project scheduling and helping project teams achieve faster startup times.

With Power the Loop, if the instruments are installed, organizations don’t have to wait for the host system installation, or for hardware, I/O, and cabling to be run. Instead of waiting on transmitter configuration at the end of a project, technicians can install and configure devices as soon as they arrive, helping organizations gain flexibility in schedule and workforce.

With the flexibility to configure devices in the field regardless of the infrastructure supporting them, project planners can plan configuration of devices more effectively, spreading it out across the project and allowing late-stage manhours to be used for more pressing concerns, speeding installation and keeping projects on schedule.

Do More with Your Handhelds

Power the Loop technology in the AMS Trex Device Communicator enables technicians to simplify work in the shop and in the field. By reducing the number of tools they need to carry and helping take configuration off the critical path, organizations can use Power the Loop technology to make more efficient use of available man hours and shorten or eliminate process outages resulting in less downtime, lower costs, and increased profitability.

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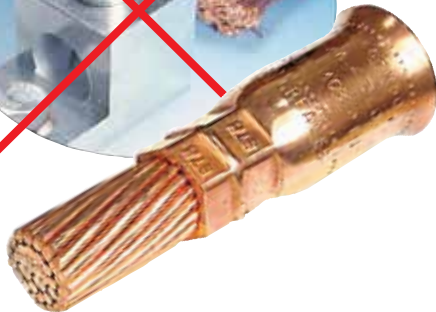
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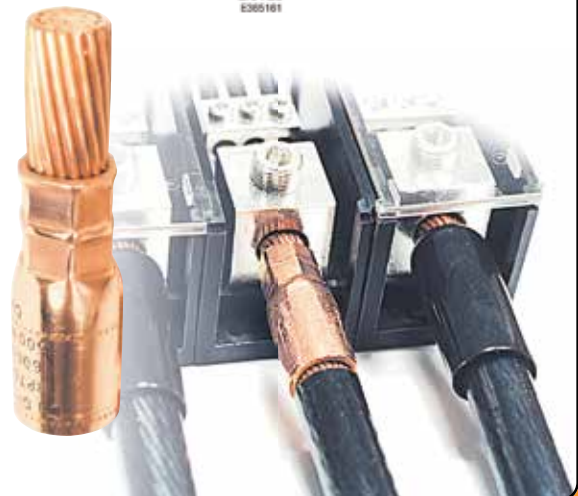
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- Insulating covers are provided

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- All-copper compression adapters
- Use where cable is oversized to reduce voltage drop on long runs
- Use fit existing C/B, transformer, or other gear lugs
- For Class B 'building wire' cable stranding only
- Fits into mechanical set-screw type connectors in panels, transformers and machinery
- Fabricated of wrought copper barrel with pin of Class B copper conductor
- Insulating covers provided



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Felling Adds Triple Axle FT-30-3 I Drill Series to Pair with New Drill on the Market



Felling Trailers, Inc. has focused on manufacturing trailers for the underground drill and trencher industry for a long time. A dealer/customer informed a Felling Trailers' salesperson that a new model drill was going to be released that was heavier and wider than current models. The dealer/customer asked that Felling design a trailer to transport the new drill and its required mud mix system. The current Felling models were limited by the tire capacities available for a two-axle configuration. Felling's Engineering and Sales teams went to work to design a three-axle model with the deck between the fenders to obtain the lowest deck height possible, yet be available in either electric brakes or air brakes depending on the end user's needs. In this design, they also incorporated some of the options that many utility customers require as standard, items such as an extended hitch configuration that includes about 30 inches of minimal tongue width back as far as the jack to allow a tighter turning radius. This hitch configuration allows a heavy-duty spring foot jack to be mounted on the outside of the hitch for easy jack operation without reaching inside of the hitch to operate. The elevated water tank stands were designed with increased strength and narrower to allow the tank to mount a little farther over the fender, accommodating the wider drill yet keep the tank as low as possible.

For more information, visit www.felling.com or call 1.800.245.2809.

Pictured is an FT-30-3 I-S Drill Series.

About Felling Trailers, Inc.

Felling Trailers is a family-owned and operated Full Line Trailer Manufacturer located in Central Minnesota. Started in 1974, Felling Trailers, Inc. has grown from a small shop to a factory and office complex that today covers over 325,000 square feet. Felling's pride and differentiation is its customized trailer division. Its engineers utilize the latest Industry-leading design techniques, and its experienced metal craftsmen use cutting-edge technology to turn its customers' conceptual trailer needs into a tangible product. Felling has been providing innovative trailer solutions to the transportation industry for over 45 years. Felling Trailers' current capabilities allow them to provide a high-quality product that is distributed across North America and internationally. Felling Trailers, Inc. is an ISO 9001:2015 Certified Quality Management System Company, WBENC-Certified WBE, and an Equal Opportunity Employer.

For more information, contact 1.800.245.2809, sales@felling.com or visit them on the web at www.felling.com. You can also follow them on Twitter (@FellingTrailers), Facebook (Felling Trailers, Inc.), and Pinterest.

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Valuable Tool for Any Fleet, Felling Trailers' Self-Loading Turret Reel Trailer

Felling Trailers, Inc.'s Self Loading Turret Reel trailer is a valuable tool for any fleet. With a 360 degree hydraulically operated rotating turret assembly, the FT-14-2 R Turret can lock into any position when the directional control valve is released. Keeping mindful of equipment, time, and operator safety the turret's self-loading feature eliminates the need to have extra equipment and operators on-site to lift and load the reel as on a fixed reel trailer.

The hydraulic payout/take-up assembly is a sealed gear driven unit. Keeping repair work to a minimum, there are no chains or sprockets to break or wear out. The drive unit is exceptionally smooth and quiet to operate, easily engages, and disengages from the reel bar. Not only does it payout and retrieve, but it also has optional hydraulic braking capabilities. Hydraulic brake tensioning eliminates the heat generated by traditional caliper and rotor. This reduces line gallop and allows for a longer tensioning duration. The generated heat is absorbed in the hydraulic oil and dissipated by the oil cooler.

The hydraulic tensioning feature can be used in overhead conductor installation and replacement. For those in the Oil & Gas industries, this feature can be used for servicing existing wells, new deployment of ESP cable, retrieval and redeployment of ESP cable for the replacement or repair of the submersible pumps as well as deployment and retrieval for capillary tube operations.

This unit comes standard with an onboard hydraulic power supply. Felling uses a Honda GX 390 gas engine with electric start and recoil backup. The power pack is equipped with a 25-gallon hydraulic reservoir with a hydraulic oil return filter and a lockable theft-resistant enclosure. The FT-14-2 R Turret is rated for 2,250-psi continuous and 2,900-psi max and provides 8 GPM.



For more information, visit www.felling.com or call 1.800.245.2809.

Pictured is an FT-14-2 R Turret

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