

# InfraStructures

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Volume 26 • Number 5 • May 2021 • *English Edition*







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## A Brief Word...

*Typically, June is a turning point in the calendar, when summer is imminent, actually and metaphorically. So far not much has been typical these past months, nor does it look as if that will change before the leaves.*

*It has been touted that the effects (political and economic) of the Covid situation will cause ripples for the next 3-5 years. As an example June is usually crunch time for the education system, as those systems have proven inflexible and recalcitrant what can employers expect for the future.*

*The "Elephant-in-the Room" which forms the backdrop to these Covid Ripples is housing prices which balance frighteningly on a knife edge. Real estate prices trend inversely to interest rates, and we are still in the anomaly of the lowest rates in centuries. This cannot be maintained with the level of debt the Canadian economy is coping with. To generate sufficient wealth to maintain solvency, the Bank of Canada will be forced to act.*

*In Canada, the equipment industry floats on housing and thrives on resources and, at least for this season, we are enjoying a cascade of both. Canadians were once renowned for planning for the worst and hoping for the best. A tradition worthy of resurrection.*

*InfraStructures reflects that tradition, in as much as it is a planning tool you have faith in, to inform you of the best innovations to invest in.*

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On the cover: the SANY SY215C LC crawled excavator, bought by Coffrage de la Côte, hard at work digging a foundation.

This machine is the Chateau-Richer-based company's second SANY excavator, bought 4 months after purchasing its first one at Mécanique J. Clair, in Beauré, Québec.



## EPIROC TO ACQUIRE CANADIAN MINING ELECTRIFICATION SOLUTIONS PROVIDER

Epiroc has agreed to acquire Meglab, a company with expertise in providing electrification infrastructure solutions to mines. The solutions support mining customers in their transition to battery-electric vehicles.

Based in Val-d'Or, Quebec, Meglab is a technology integrator that designs, manufactures, installs and supports practical and cost-effective electrification

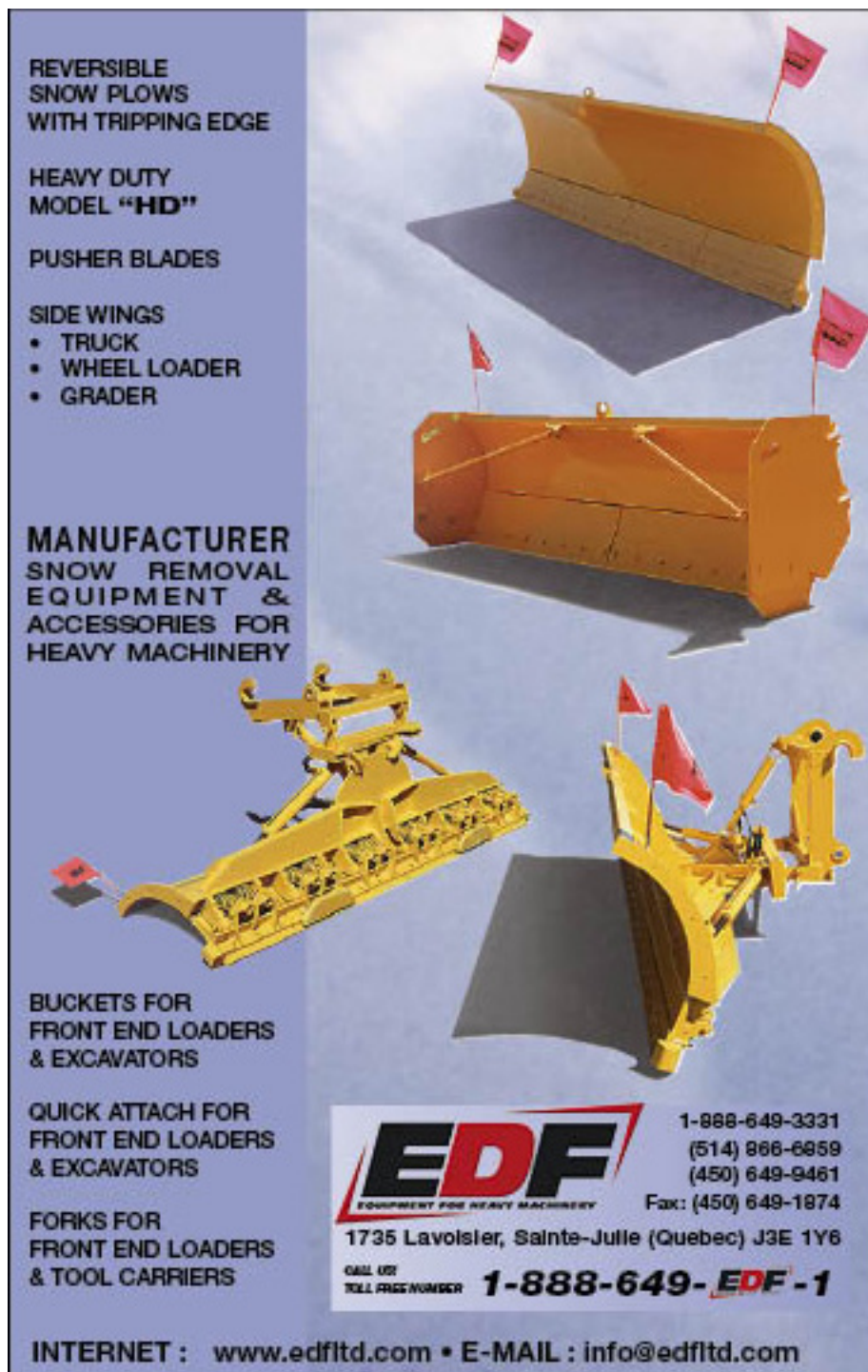
and telecommunications infrastructure solutions to customers in several countries. Its products and solutions include system design, substations, switchgears and automation system solutions, enabling the infrastructure needed for mine electrification and equipment charging solutions, as well as for digitalization and automation of operations.

"Epiroc is proud to be the leader in providing battery-electric vehicles for the

mining industry, improving customers' work environment and lowering their emissions while increasing their productivity," said Helena Hedblom, Epiroc's president and CEO. "The acquisition of Meglab will strengthen our capacity to provide the infrastructure required as mines transition to battery-electric vehicles."

The acquisition is expected to be completed in Q2 2021. The purchase price is not material relative to Epiroc's market capitalization and is not disclosed. The business will become part of Epiroc's Parts & Services division and will continue to be based in Canada.

Source: Epiroc



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## CLEAN PLANET ENERGY UNVEILS MARINE FUELS MADE FROM PLASTIC WASTE

Clean Planet Energy recently released details of 2 new ultraclean fuels manufactured to replace fossil fuels in the marine industry, for use in any ship or vessel. The products branded under the banner of "Clean Planet Oceans" can provide CO<sub>2</sub>e reductions of over 75%, and significantly reduce harmful air pollutants. Both fuels are produced using non-recyclable waste plastics as the feedstock, therefore removing waste which would otherwise go to incineration, landfill or into our oceans.

Following Clean Planet's recent announcement of ultraclean aviation fuel, Clean Planet Oceans includes an ultraclean Marine Residual Fuel (also known as bunker fuel or fuel oil) meeting international ISO 8712 2017 standards, and also a premium Marine Distillate Fuel which matches the highest EN15940 Diesel specification.

In addition to the CO<sub>2</sub>e reduction, a significant benefit of these new fuels is the notable decrease in NO<sub>x</sub> (Nitrogen Dioxide) and SO<sub>x</sub> (Sulphur Oxide) emissions. NO<sub>x</sub> and SO<sub>x</sub> are some of the most common air-pollutants from the burning of fossil fuels and are estimated to be globally responsible for 9,000 daily deaths (source: IHME).

The UK-based renewable energy company will produce these ultraclean circular fuels inside their ecoPlants. A Clean Planet ecoPlant® can accept and convert non-recyclable waste plastics. According to data sourced by parties including the U.S. EPA and the World Economic Forum, this year 203 million t of plastic will become non-recyclable waste, meaning that the Clean Planet process not only reduces



CO<sub>2</sub>e emissions and air pollutants, but also tackles the plastic crisis too.

Currently, Clean Planet has 2 ecoPlants able to process 20,000 t/y of waste plastics in construction phase, with another 4 in development. The company has a mission to build ecoPlants to process over 1 million t/y of waste plastics.

Source: Clean Planet Energy

#### TRELLEBORG ACQUIRES LEADING SUPPLIER OF COMPOSITE HOSES

Trelleborg has, through its Trelleborg Industrial Solutions business area, signed an agreement and finalized the acquisition of the Dutch company, Gutteling Group BV. The company develops and sells composite hoses to the chemical industry and is the market leader in hoses for Liquefied Natural Gas (LNG) ship-to-ship transfer. The acquisition complements Trelleborg's industrial hose, and specifically, composite hose, offering. Composite hoses are mainly used for aggressive chemicals, such as chlorine, sulfuric acid, biofuels and LNG.

Gutteling has its head office and production in Rotterdam, the Netherlands, with production in the Czech Republic, as well as a sales office in the U.S.

"I am delighted to welcome Gutteling to Trelleborg. We have a long-standing business relationship and recognize the company as an innovative supplier of high-quality hoses and fittings for demanding environments. The addition of Gutteling reinforces our position as a system provider in LNG transfer, while also strengthening us in the aftermarket. We can also see sales synergies between the company and our existing composite hose offering," says Jean-Paul Mindermann, president of the Trelleborg Industrial Solutions business area.

Source: Trelleborg

#### CAXXOR CONTINUES FORWARD MOMENTUM WITH NORTHERN CORRIDOR PROJECT

A US\$3.3 billion (\$4.2 billion) infrastructure project connecting Winnipeg's Centerport to Mexico's Pacific coast near Mazatlán took another step forward last

March after it selected Canadian firm Engage Construction Management & Consulting Inc. as its leader of Canadian operations.

The Northern Corridor project, also known as the T MEC Corridor or USMCA Corridor, is an infrastructure project that will allow Mexico to efficiently integrate into the logistics systems of Canada and the U.S. The project consists of a new world-class port in Mazatlán, more than

300 km of railways within Mexico, 8 logistics and industrial centers in Mexico and at least 4 logistics centers between the U.S. and Canada. Recently, the development of cargo airports and highways within Mexico has also been added.

Partners in the project include National Standard Finance as an investor and Taylor-DeJongh as an investment bank. The leader and owner of the project is CAXXOR in North America with Engage

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having the role as leader of the project in Canada.

Source: Engage Construction Management & Consulting Inc.

#### OCIUS-X AND BONFIRE ENGINEERING & CONSTRUCTION ANNOUNCE PARTNERSHIP

OCIUS-X, an industry-leading provider of FTTx project management software headquartered in Stockholm, Sweden, and Bonfire Engineering and Construction,

a turnkey engineering, construction and technology service provider, have formed a partnership. Based in Denver, Colorado, Bonfire helps service providers, utilities and municipalities deploy broadband infrastructure.

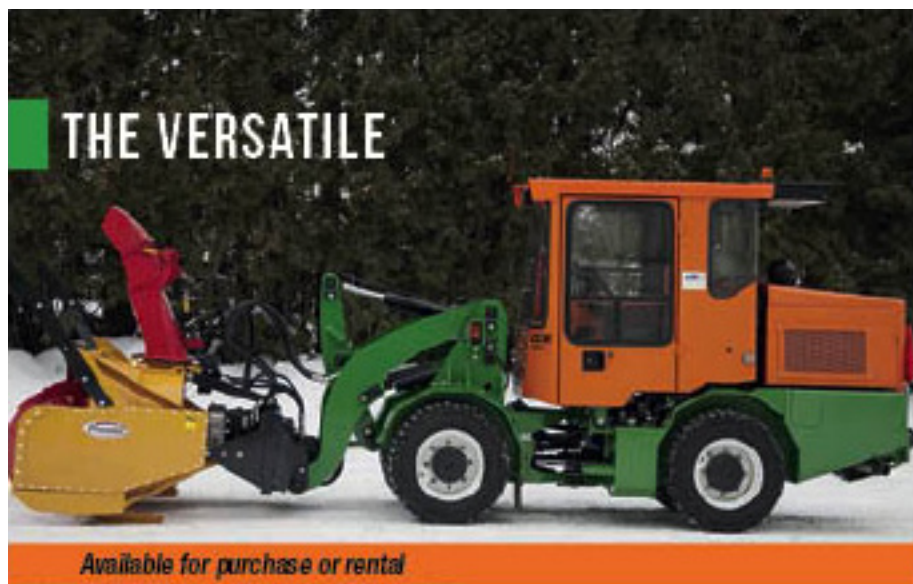
"We're proud to partner with OCIUS-X and implement their unique software platform across our broadband construction projects," says Brian Hollister, CEO and cofounder of Bonfire Engineering

and Construction. "As part of our Proven Process, collaboration is fundamental to our consultative approach to work. Our teams are focused on transparency and providing all stakeholders full visibility into project progress which OCIUS-X will help us deliver efficiently."

"We are excited to partner with the experienced and accomplished team at Bonfire to bring broadband to the traditionally underserved. OCIUS-X and Bonfire share the same vision to leverage experience, expertise, technology, and passion to deliver broadband networks faster to connect communities across the country," said Pär Cedergren, OCIUS-X.

The OCIUS-X software platform enables efficient management of FTTx projects with complete control of the construction process and real-time visibility for all stakeholders. With OCIUS-X project management software, fiber optic and wireless network deployment is accelerated with less administration, more accountability and a better outcome. OCIUS-X provides one single, shared source of truth for constructors, subcontractors and network owners. Here is a look at some video footage that shows the partnership program in action.

Source: Bonfire Engineering & Construction



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#### OSHKOSH PARTNERS WITH MICROVAST TO STRENGTHEN ELECTRIFICATION CAPABILITIES

Oshkosh Corporation recently announced a planned investment in Microvast, a global provider of next-generation battery technologies for commercial and specialty electric vehicles. This relationship bolsters Oshkosh's existing technology strategy to increase the development of advanced products that support the current and future needs of customers.

Oshkosh is a global innovator and has been pioneering electric products since the mid-1990s when the company launched its first electric boom lift. Oshkosh has continued to develop and introduce electric solutions in all its business segments for more than 2 decades.

"Our strategic investment in Microvast is an excellent addition to Oshkosh's electrification focus and established partnerships," said John C. Pfeifer, Oshkosh Corporation president and COO. "These partnerships, combined with Oshkosh's highly-capable



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product development team, support our expanding leadership with technology-enabled products for the markets we serve."

Oshkosh agreed to make a US\$25 million (\$31.6 million) private investment in public equity, or PIPE, in Microvast, who announced a merger with Tuscan Holdings Corp. on February 1, 2021. Oshkosh and Microvast also entered into a joint development agreement highlighting future battery collaboration and integration.

Source: Oshkosh Corporation

## PETERBILT LAUNCHES EV OPERATING COST CALCULATOR

Peterbilt Motors Company is proud to introduce an EV Operating Cost Calculator for prospective Peterbilt electric vehicle customers.

Hosted within the company's website, the operating cost calculator is a powerful tool for prospective customers to evaluate the Total Cost of Ownership of a Peterbilt Model 220EV, 520EV or 579EV on a per mile (on-highway applications) or per hour basis (vocational applications). The

user-friendly interface delivers an accurate side-by-side comparison to help customers understand the real-world savings and financial benefits of Peterbilt electric models.

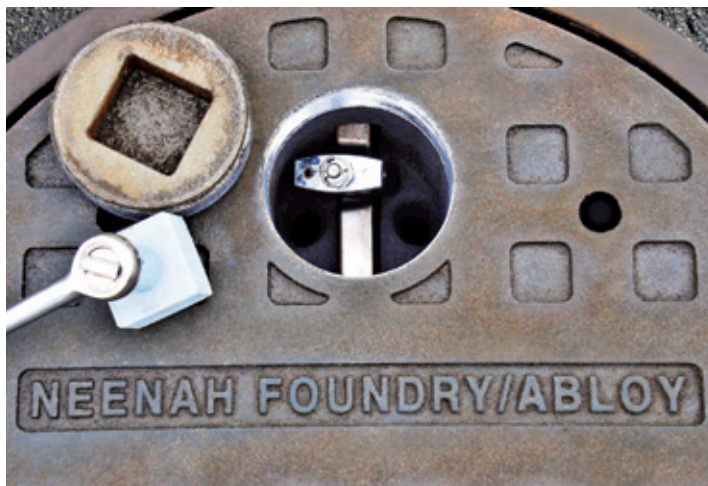
The calculator compares power consumption and fuel costs between electric and diesel vehicles for multiple configurations. Customers can choose between using the convenient slider functionality or directly input their data for key variables such as mileage per year, electricity cost, vehicle price, charging stations, rebates and other expenses such as annual maintenance and insurance. The calculator automatically populates the costs as users fill-out each section and provides a detailed summary once complete that outlines total electric costs and operating cost per vehicle.

"The number one question we get asked by customers interested in our class-leading electric vehicles always revolves around the operating cost. Our new EV Operating Cost Calculator answers this question, making it easier than ever to evaluate if adding electric vehicles to your fleet is right for your business," said Robert Woodall, Peterbilt assistant general manager Sales and Marketing.

Source: Peterbilt Motors Company

## ABLOY and Neenah Unveil Partnership to Secure Underground Infrastructure

Utility and industrial enterprises need secure operations around-the-clock, knowing that any threat to the public's safety can negatively impact revenues and tarnish their reputations. Now they have a new solution to help as ABLOY USA Critical Infra-



structure Global Solutions has created an exclusive partnership with Neenah Foundry to introduce InfraLOCK™, a high security locking system designed specifically to protect the nation's underground infrastructure.

ABLOY USA has an impressive 45-year track record of developing advanced engineering, design, and innovation in the field of electromechanical locking technology. In addition to providing critical asset security, they offer remote access management solutions to minimize security risks at critical infrastructure properties operated by governments and utilities around the world. Wisconsin-based Neenah Foundry has produced American-made municipal infrastructure and construction products for the water and sewer industries for nearly 150 years.

InfraLOCK is a heavy duty Neenah manhole cover that incorporates the strong ABLOY® PLM340 padlock. The cover is furnished with a cast iron plug that conceals the weather-resistant padlock housing. When unlocked, the hardened steel constructed padlock swings to the side – and by design – cannot be removed from the housing. Pullback on a cast iron bar releases the locking mechanism and allows the cover to be removed.

ABLOY's shackle-sealed, corrosion-resistant padlock provides a host of benefits. It starts with patented disc rotating technology, making the padlock almost impossible to pick. Cylinder options inside the padlock allow for integrating systems to control keys, manage access rights, and perform audit trails with ABLOY CLIQ™ technology.

InfraLOCK is easy to install and can be retrofit into existing frames without costly demolition, unnecessary hardware or installation expenditures. The housing can be fitted to virtually any standard manhole cover.

Source: ABLOY USA Critical Infrastructure

## FORTESCUE PARTNERS WITH WILLIAMS TO DEVELOP ZERO EMISSIONS HAUL TRUCK

Fortescue Metals Group recently announced an agreement with Williams Advanced Engineering to design, build, test and integrate a battery system to power an electric mining haul truck, as an important first step to decarbonizing its mining haul fleet.

The project includes the design and construction of a bespoke battery electric powertrain with the ability to regenerate power as the truck travels downhill. The battery will be built at William's facility in the UK, before being shipped to Perth for integration into a 240 t prototype haul truck for performance testing at Fortescue's mining operations in the Pilbara, Western Australia.

To support the full implementation of a battery-electric haulage fleet, the project will also involve the development of a fast charging unit which will harness renewable energy from Fortescue's Pilbara Energy Connect network.

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pressing issues facing the planet and Fortescue is committed to tackling this challenge head on through our industry leading target to achieve net zero operational emissions by 2040," said Elizabeth Gaines, Fortescue CEO. "This includes a 26% reduction in Scope 1 and 2 emissions from existing operations from 2020 levels by 2030. With around a quarter of these emissions attributed to our mobile haul fleet, this represents a significant opportunity to drive our pathway to being diesel free. Fortescue's history of developing and adopting innovation and technology has been key to the success of our business and in partnership with Williams Advanced

Engineering, we look forward to applying this technology-first strategy to our emissions reduction pathway."

"We are delighted to be working with Fortescue on this pioneering project that will help enable their future decarbonization strategy, contributing to a reduction of carbon emissions in the heavy-duty mining sector. Both companies have a shared culture for innovation and rapid response and are committed to creating a sustainable future," said Craig Wilson, Williams' managing director.

In 2020, Fortescue announced an ambitious target to achieve net zero operational emissions by 2040, underpinned by a

pathway to decarbonization through the implementation of a range of practical initiatives

Fortescue Metals Group is a global leader in the iron ore industry.

Williams Advanced Engineering Limited is a world-leading technology and engineering business, born out of Williams F1 in 2010.

Source: Fortescue Metals Group

## **PROCORE ADVANCES CONSTRUCTION COST MANAGEMENT WITH ITS FINANCIALS MANAGEMENT PORTFOLIO**

Procore Technologies, Inc. recently announced product enhancements to its Financial Management portfolio. These tools provide accurate data and real-time insights into the financial health of construction projects, while connecting entire project teams on a single, secure platform. The new tools include Advanced Forecasting to better forecast cash flow, improved financial reporting with robust and flexible Work Breakdown Structure, the ability to connect Time & Material Tickets to Change Orders, and an enhanced EPR Connector Platform.

"Construction projects' scope and schedules need to connect to cost management, so that teams can accurately predict and track project costs," said Tooley Courtemanche, Procore CEO. "That's why Procore is putting financials and cost management at the center of our platform. The benefit of integrated data through the Procore platform is that our financial management tools are seamlessly integrated with the rest of the platform, making tracking and predicting costs more efficient, mitigating risk easier, and making it faster for contractors to get paid."

Advanced Forecasting is now available to all Procore users globally. With the new Advanced Forecasting capabilities, users can manage financial risk, reduce manual data entry, and streamline reporting with actionable monthly cash flow forecasts. This enhancement allows users to more effectively protect their profits by automatically aggregating contract data, change orders, and the current state of project costs. Project stakeholders are able to stay on top of cash flow needs by streamlining and enhancing monthly reporting, and execute forward-looking financial planning.

The new flexible Work Breakdown Structure gives teams the ability to organize

## **Hydrema Appoints Annagola Iron as Authorized Dealer for Central Ontario**

Hydrema recently added Annagola Iron to its authorized dealer network expanding its reach into Canada. Annagola Iron will represent Hydrema's product line in central Ontario from its Orton location.

"Annagola's construction equipment experience and growth strategy align with Hydrema's strategic vision," said Kris Binder, executive vice president of Hydrema North America. "We are thrilled to have them join our family of dealers."

"I've known the Hydrema brand ever since I was a kid growing up in Europe," said Stephen Cargill, owner of Annagola Iron. "Hydrema is a premium product built with quality components and engineering. It is an honor to represent this brand and I'm excited to showcase what their equipment can do in the central Ontario marketplace."

Annagola Iron will now carry Hydrema's 707G and 912G articulated dump trucks, with the anticipation of adding Hydrema's larger 922 articulated dump truck model, backhoe loaders, and wheeled excavators in the near future. The 707G and 912G-series are powered by a Cummins diesel engine and offer a unique multi-tip version allowing for the dump body to swing 90° side to side. Both models can be customized with a flatbed option. The 912GS-series is also offered with a rail option providing the operator with the ability to perform work off-road and on-rail.

"We are impressed with Annagola's commitment to customer and equipment service," said Allen Patterson, Hydrema regional business manager. "I'm looking forward to working with them and their customers."

Annagola Iron has been fully-trained in the application, sales, parts, and service of Hydrema's full product line in addition to prompt and professional parts and service support.

Source: A/S Hydrema







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### **A newcomer in the Class 7 & 8 Cabover category**

The oldest North American truck brand, Autocar® enters the Class 7 & 8 cabover market with a range of trucks designed for heavy work such as road maintenance and heavy pick-up and delivery, the Autocar Xpert.



The Autocar Xpert is designed to ensure the best sight lines in any cabover or conventional truck. The spacious cab features a huge windshield, side, and rear windows.

The Autocar Xpert can be equipped with an OEM dual steering system. With all controls placed either in the middle, or duplicated and mirrored on both sides.

The high performance dual steering gear system is designed for an extra tight turning radius, and the electrical system is designed for dual steer from the ground up, with no third party splicing into a wire harness.



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and report on financial data in Procore to the level of detail or customization that a project or the business demands. Users can leverage the power of the Work Breakdown Structure to create custom segments, generate unique data tags on financial line items, and produce robust financial reports. Users have control over their financial data and a new tool for visibility into the overall performance of a project or portfolio.

Through the new integration between Time & Materials (T&M) Tickets and Change Orders, self-perform contractors can flag, manage, and recoup payment for out-of-scope work more efficiently with

a seamless workflow to change management. Field users can initiate out-of-scope work opportunities that command attention by looping in the necessary stakeholders to move forward with Field Work Authorization or Extra Work Authorization (FWA/EWA) before or while proceeding with work. Verified tickets outlining labor, equipment, and material units are pulled into a change event, cost codes and mark-ups are added, and a formal change order can be sent out within a matter of minutes.

Users can more easily connect Procore with their ERP systems through the new enhanced ERP Connector Platform. This will allow users to build more connectors

to leading ERP systems, bridging the gap between operations and accounting teams with access to real-time financial data. The ERP Connector platform makes building customer integrations faster and simpler as users can create integrations themselves, work with Procore's professional services team, or utilize one of the dozens of Procore certified consultants available globally.

Source: Procore

### **DCA LAUNCHES NEW MICROSITES HELPING TO CREATE JOBS, FIND WORKERS, EDUCATE UNDERGROUND INDUSTRY**

The Distribution Contractors Association (DCA) now has 3 auxiliary microsites granting access to a wealth of underground industry resources from a single, user-friendly location. The sites provide education, training and jobseeker/recruitment tools and opportunities aimed at getting people back to work in a richly rewarding industry.

DCA officially launched its *Let's Get to Work* website in October 2020 at the DCA Virtual Fall Meeting. The site's development and release are the result of a partnership between DCA and Mike Rowe. DCA and the American Petroleum Institute (API) were the sole sponsors of the discovery+ program *Six Degrees with Mike Rowe*, that launched January 4, 2020. The show incorporates energy workforce messaging along with advertising from DCA and 2 member companies, Michels and Artera Services.

Companies can use the site to promote jobs, and potential employees can connect with the companies. Workforce candidates range from students looking for their first jobs to trades people with advanced skillsets. Men, women, students, military vets, millennials, and Gen Z'ers, those who are displaced employees, due either directly or indirectly to the pandemic, and those currently in a position but looking for engaging work in an exciting industry – they will all find tools to help them here.

## **Konecranes Lift Trucks Now Support Renewable, Fossil-Free Diesel**

Konecranes has been testing the use of HVO100 fossil-free fuel in lift trucks at its Markaryd factory, in Sweden, part of ongoing efforts to reduce its climate impact and meet customer demand for equipment using renewable fuels. Results show the latest generation of Konecranes lift trucks can use HVO100, giving customers the possibility to reduce their carbon footprint.



Demand for fossil-free fuel is growing as lift truck owners seek to reduce emissions and, in certain markets, meet governmental regulations. HVO100 is a 100% renewable and fossil-free chemical copy of regular diesel made mostly of vegetable oils as well as suitable waste and residue fat which can reduce fossil-based carbon dioxide (CO<sub>2</sub>) emissions by up to 90%. With nearly the same characteristics as regular diesel, renewable HVO100 can be used in most, but not all, diesel engines without further modification.

Starting in Q4 2020, Konecranes has been testing HVO100 in selected lift trucks at Markaryd and found the fuel works as efficiently as regular diesel, with no engine modifications needed. The results mean HVO100 can be used in all of Konecranes' latest generation of lift trucks, Generation C, representing approximately 40% of the company's fleet operating globally. Full compatibility with all legacy Konecranes lift trucks cannot be guaranteed given the age and wide variety of engines in older models.

While broader HVO100 adoption in the market will depend on customer preference and fuel availability, the potential for significant emission reductions is clear.

A strong focus on customers and commitment to business growth and continuous improvement make Konecranes a lifting industry leader. This is underpinned by investments in digitalization and technology, and its drive to make lifting and material flows more productive and sustainable. Uncompromised safety, high ethics and inclusiveness drive us. Konecranes works for a decarbonized and circular world for its customers and society at large.

Source: Konecranes Lift Trucks





DCATrenchless was launched during the DCA Virtual Spring Meeting in early March 2021. The site's comprehensive, multimedia content gives users a concise, basic overview of the applications, techniques, equipment, and tooling used in horizontal directional drilling (HDD) and trenchless. Topics also include drilling fluid's purpose, environmentally friendly additives, and recycling process.

DCA members will find the DCATrenchless site to be an asset they can use both for their own education and as a resource to educate others. However, its value extends throughout the industry to all stakeholders. It is for anyone and everyone curious about trenchless and HDD works.

Released last year was the *OQIP microsite*, which focuses on the Operator Qualification Integrity Process. OQIP is a DCA-initiated training resource developed in partnership with natural gas associations such as the AGA and the regional gas associations, OQ training providers, local distribution companies (LDCs) as well as federal regulators. The site provides training resources for use by both natural gas providers and utility companies.

DCA serves as a link between DCA members, government agencies, organized labor, and other industry organizations. Its programs, committees and organized events offer DCA members professional recognition and the opportunity to serve this specialized facet of the underground construction industry. The organization is celebrating its 60<sup>th</sup> anniversary this year.

Source: The Distribution Contractors Association (DCA)

#### CONEXPO-CON/AGG UNVEILS NEW LOGO, BRAND IDENTITY

CONEXPO-CON/AGG, the premier event that connects experts from every major construction sector, recently unveiled a new brand identity and tag line, *Taking Construction to the Next Level*.

The updated branding reflects the growth and momentum of the construction industry and the role the exhibition plays in connecting innovators, equipment manufacturers and construction professionals. Held every 3 years in Las Vegas, CONEXPO-CON/AGG is North America's largest construction trade show featuring the latest construction equipment and technology applications for the industry.

"The launch of a new identity for

CONEXPO-CON/AGG reflects how the show and our industry has evolved and what it aspires to be in the future," said Dana Wuesthoff, vice president exhibitions and event services at the Association of Equipment Manufacturers and CONEXPO-CON/AGG show director. "The forward motion of the logo matches the forward motion of the show, where construction professionals experience the latest equipment, participate in demonstrations and education, make new professional connections, and grow their own marketability within the industry."

The forward-pointing arrows indicate progress and momentum, while the deepening colors represent growth. The tread-like arrangement of the arrows conveys traction and making a mark on the construction industry. This is the first complete overhaul of the CONEXPO-CON/AGG identity since CONEXPO and CON-AGG combined in 1996.



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"It's been exciting to see the construction industry grow and evolve in so many ways since the shows combined and we launched our previous logo for CONEXPO-CON/AGG in 2005," continued Wuesthoff. "The show's brand identity is evolving to match what CONEXPO-CON/AGG is today and in the future. CONEXPO-CON/

AGG remains North America's number one event that construction pros consider to be the best place to connect with opportunities, equipment and products that advance their businesses, and this new brand image helps us translate that mission to the future of the industry."

The next CONEXPO-CON/AGG and co-located IFPE takes place at the Las Vegas Convention Center from March 14-18, 2023.

Source: Association of Equipment Manufacturers (AEM)



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# Hiab to Supply UK Company With 100 HIAB Cranes

Hiab, part of Cargotec, will supply MV Commercial with 100 light, medium and heavy range HIAB loader cranes equipped with HiConnect™. The deal is worth over €5.7 million (\$8.4 million) including installation for 60 cranes and has been booked in Q1 2021.

In the UK, MV Commercial provides sales and leasing for commercial vehicles, and has become one of the biggest suppliers of loader cranes.

"This deal is testament to the excellent working relationship we have with the team at Hiab. MV Commercial has one of the UK's best fleets of ready to go specialist crane units with annual specialist truck supply in the hundreds of units, so it is vital for our business model that we maintain a good level of high-quality equipment ready to meet our customers' needs," said Steven Cairns, managing director for MV Commercial. "This deal will grow our industry-leading position and expand our fleet with high-quality equipment ready to



Photos: © Knieper

meet our customers' needs."

Currently 60% of the cranes are contracted to be installed at Hiab's own installation sites in the UK. MV Commercial and its customers can receive after-sales service from Hiab's extensive service network in the UK and Ireland throughout the entire equipment lifecycle.

HiConnect™ enhances the productivity of Hiab customer's businesses through connected Hiab equipment. The technology

provides real-time insights into equipment utilization, operation and condition. This data can be used to actively optimize performance, safety and avoid unnecessary downtime. Web-based dashboards with clear and simple overviews provide status monitoring, service planning and help improve the operation of each unit and operator.

Source: Cargotec Corporation




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# Gas Liquefaction Plants for Russia

At the end of last year, KAHL Schwerlast & Pieper Schwertransporte was commissioned to move a total of 6 huge heat exchangers for 2 gas liquefaction plants destined for Russia from an engineering works near the port in Haren, on the River Ems in Germany, to the cargo vessel.

Over a period of several months, the individual components had been transported from various production facilities to the Barlage company in Haren. There the components were assembled and the final touches made to the heat exchangers.

The KAHL Group was then tasked with the heavy haulage operation of moving the heat exchangers from the assembly plant to the quay, where 2 heavy-duty cranes were waiting to lift the heat exchangers onboard the transport vessel.

Although the route was only about 800 m long, the challenges were enormous due to the need to negotiate the confined spaces on the journey all the way round the harbor.

For moving the 658 t cooler, the transport team relied on its trusted heavy-duty modules from Goldhofer in a trailing unit configuration with 2 x 12 PST/SL-E axle lines, picking up the giant cargo

hydraulically without the use of a crane. The equipment used for the operation was a P 1+1/2 split combination, with one module divided lengthwise and coupled parallel to a second full module. The

width P 1+1 combination. Each 12-axle unit was powered by a 490 hp powerpack. With the load lashed onto the self-propelled transporter combinations, it was quite a feat to negotiate the 90° bends with a total train length of more than 50 m and a load width of 6.43 m.

Careful maneuvering was necessary to avoid a number of obstacles. With electronic steering on all axles and travel speed at a snail's pace, the experts successfully guided the train through all the narrow sections of the route.

Handling such transport operations without a turntable (which has the advantage of much greater tilt stability) calls for meticulous preparatory work and lots of experience, something that the tried and tested team at KAHL & Pieper demonstrate on a daily basis. And so, in spite of all the difficulties, the huge cargo reached its destination in good time, and the transport vessel was able to sail on schedule.

Source: Goldhofer AG



advantages of this combination are that it offers appreciably better stability than a single-width transporter and requires less space for maneuvering than a double-

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The ECKO LOGISTICS logo features a stylized yellow sunburst icon next to the word "ECKO" in bold, with "LOGISTICS" in smaller text below it. Below the logo is a blue semi-truck with a white trailer, driving on a road under a blue sky with clouds.



## ALL Crane Adds 5 Manitowoc Crawlers

The ALL Family of Companies is adding a new package from Manitowoc that includes 5 new crawler cranes and an assortment of jibs, boom attachments, and other attachments to bolster service among targeted customer markets.

Crawlers in the package include 2 Manitowoc 14000 series 3 and 3 MLC300 VPC series 3. The attachments consist of 2 MLC650 VPC wide boom attachments and one each of 14000 luffing jib, 999 luffing jib, MLC300 VPC wide boom attachment, MLC300 VPC-MAX attachment, and MLC650 VPC-MAX attachment.

Rick Mikut, ALL Crane's crawler crane division manager, worked with Manitowoc on upgrades to the 200 t capacity 14000 series 3, recommending adjustments that improved the cab and added counterweights to increase its load chart when the boom is extended.

"Among other things, the new 14000 fills a capacity niche that will be highly useful



for setting girders in bridge work," said Mr. Mikut.

The various attachments included in the purchase provide additional options to customers, adding the flexibility to further customize equipment depending on the application.

The wide boom attachments are desirable for a number of reasons, including their safe performance in higher winds.

"In wind energy construction and repair,

for example, the ability to operate safely even in an extra 8 km/h gives you an edge when you're working up that high," added Rick Mikut.

The new crawlers and attachments should be in demand in markets like infrastructure, industrial, and plant maintenance. Delivery will occur throughout 2021, with distribution across ALL's 33-branch footprint.

Source: The ALL Family of Companies

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# John Deere Expands Its Solutions for Grade Control With the Launch of SmartGrade™ for Excavators

John Deere increases the range of its grade control solutions with the launch of SmartGrade™ on the 210G LC and 350G LC Excavators. The factory-installed and -calibrated 3D SmartGrade system delivers increased productivity and accuracy on the job and provides benefits to contractors at all levels.

"By incorporating precision technology, such as SmartGrade, on our excavator lineup, we are boosting jobsite productivity and efficiency while enhancing the capabilities of our operators," said Justin Steger, solutions marketing manager, John Deere. "However, there isn't a one-size-fits-all solution, and contractors need options to pair the right technology with their

provides a 2D system with semiautomated functions, improving the ease of use without the need for GNSS technology or 3D design plans. Additionally, the SmartGrade-Ready machines arrive from the factory prewired for the SmartGrade system, enabling the

owner to upgrade in the future, if desired.

The 3D or 2D Grade Guidance options provide reference information to the operator in the cab to improve productivity.

The 2D Grade Guidance option shares bucket tooth and cutting-edge elevation

information relative to a benchmark with the operator through the in-cab monitor. The 3D Grade Guidance option accurately



provides the horizontal and vertical bucket position using GNSS technology and can make use of a 3D design plan. All guidance and control options are available with an optional laser receiver, which leverages an ultraprecise local external elevation reference.

To boost uptime, John Deere SmartGrade Remote Support enables the dealer to remotely monitor and support the machine from miles away. Wireless data transfer provides the ability to remotely send updated design files to the machine, saving trips to the jobsite. Additionally, the SmartGrade excavators are compatible with JDLink™ telematics, increasing visibility to machine utilization and reducing costly downtime.

Source: Deere & Company



business needs. This is where customers really benefit from the flexibility of our grade management path."

John Deere offers 4 grade management options for contractors: SmartGrade, SmartGrade-Ready with 2D, 3D Grade Guidance and 2D Grade Guidance. Additionally, John Deere offers upgrade kits for each grade management option so customers can adopt technology at their own pace. A SmartGrade excavator automates the boom and bucket functions for the operator to easily achieve a smooth and accurate finish grade. Using GNSS positioning technology for accurate horizontal and vertical positioning, the machine controls boom and bucket movements to a precise design target. This enables the operator to focus on controlling the arm function while the system raises and lowers the boom to maintain grade.

The SmartGrade-Ready with 2D option

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# Hydro-Powered Hydrodemolition Solution

The Keeyask Generation Project is being constructed on the lower Nelson River, about 725 km northeast of Winnipeg, Manitoba. The 695 MW hydroelectric generating station, scheduled for completion in 2021, will be a source of renewable energy, producing an average of 4,400 GWh of electricity each year. The energy produced will be integrated into Manitoba Hydro's electric system for use in Manitoba and for export. Throughout its construction, now in its 7<sup>th</sup> year, the project has managed a number of location-specific challenges.

One such challenge occurred in 2017 when water in a 60 cm pipe in the intake froze, damaging an 2.4 m-thick concrete pier. To minimize impact to the overall project, Keeyask managers opted to use hydrodemolition to remove the damaged section. The job required a specialized contractor, one able to leverage all of their experience and equipment to overcome environmental and logistical challenges, while delivering quality results.

Water Blasting & Vacuum Services Inc., an industrial cleaning specialist from Edmundston, New Brunswick, secured the contract based on a plan that provided not only the efficiency to complete the 140 m<sup>3</sup> removal work on time, but recycled nearly 80% of the water. With Aquajet's industry-leading technology, combined with years of experience, Water Blasting & Vacuum Services pushed the boundaries of hydrodemolition to work deeper and cleaner than any Canadian project to date.

While its first hydrodemolition machines were bought used and converted in-house to meet the cleaning challenges of mills and other industrial facilities, the company quickly realized the benefits of working with an original equipment manufacturer to increase precision, safety and efficiency.

With one of their pieces of Aquajet equipment – an Aqua Cutter 410A – they saw an 80% increase in efficiency.

That reputation put Water Blasting & Vacuum Services on the shortlist for the



hydroelectric company in need of a specialized solution for an unexpected concrete removal job that threatened to delay the project.

Location was another key challenge. The construction site was approximately 4,000 km from the contractor's headquarters, and limited access to the remote site needed to be carefully factored into any proposed solution. While project managers could provide access to water, power or other general construction supplies, getting specialty equipment or replacement parts presented a time-consuming challenge. The contractor needed dependable equipment and a fully stocked toolbox

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to limit any unnecessary downtime.

Strict environmental controls also limited contractors' application choices. The project partners, known as the Keeyask Hydropower Limited Partnership – which includes 4 Manitoba First Nations and Manitoba Hydro – had made environmental protection a cornerstone of the overall project. So, while the original brief specified hydrodemolition as an acceptable process, the contractors would need to ensure all wastewater was properly collected and treated.

The EcoClear water filtration system, in combination with Water Blasting & Vacuum Services' extensive experience and expert logistics, allowed the contractor to present a revolutionary solution to project managers – one that promised maximum productivity while minimizing resource consumption and protecting the environment. Rather than treating and releasing the water, Water Blasting & Vacuum Services proposed using the

EcoClear as part of a closed loop system that would recycle the water back to its Aqua Cutter 710V.

Water Blasting & Vacuum Services arrived at the jobsite in March 2018. With temperatures averaging -29°C and dipping as low as -40°C at times, heaters had to be set up around the demolition site to provide shelter and keep the pumps operating. In addition to the EcoClear system and 710V, the contractor used a spreader bar and additional tower sections to maximize the hydrodemolition robot's reach to 12 m. An extension kit allowed the contractor to make a 4 m-wide cut, as well. These enhancements greatly reduced the downtime frequent repositioning would



have required.

Water Blasting & Vacuum Services completed the demolition in May 2018. Thanks to a revolutionary and expertly executed plan, as well as innovative equipment, the removal did not disrupt the timeline of the overall project.

Source: Aquajet Systems AB



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# Bauer Constructs Excavation Pit for a New Indoor Skydiving Facility

In 2021, one of the most modern indoor skydiving facilities in the world is being constructed in the German town of Viernheim, situated in the Rhine-Neckar region. Building on their experience with the construction of indoor skydiving facilities in Bottrop in the region of North Rhine Westphalia, as well as in France, Spain, Norway, and Poland, Indoor Skydiving International GmbH is now constructing another indoor skydiving facility with a 220 km/h airstream that will simulate the feeling of a real skydive.

BAUER Spezialtiefbau GmbH was tasked with the execution of foundation works for this project. The relatively small, rectangular excavation pit over an area of a mere 200 m<sup>2</sup> was secured with double-anchored, impermeable Mixed-in-Place walls (MIP) with a diameter of 0.55 m. The MIP walls were created using a RTG RG 25 up to a drilling depth of 16 m, and the structural king piles were vibrated into the fresh MIP wall with a RTG RG 19 T. The grouted anchors, with 4 to 6 strands and a length of approximately 17 m, were created with a KLEMM KR 806 using the rotary percussive drilling method. In order to seal the excavation base from the quaternary sand aquifer, a low lying BAUER LWS silicate gel base with a thickness of 1 m was realized. A RG 19 T was used for installation of the injection pipes, and a vibrator lance was sunk into the construction soil using a RTG MR 150 hydraulic vibrator.

"From the very beginning, a cooperative partnership with the owner was the ultimate key to the project success. Joint development of the technical concept for the creation of the excavation pit started back at the sales stage," explained Martin Ellebracht, head of the Rhein-Ruhr office of Bauer Spezialtiefbau. "The tender phase and customer support were provided by the colleagues of the Rhine-Ruhr location in Essen due to their close proximity to the customer. The construction project was operated by the site management of the

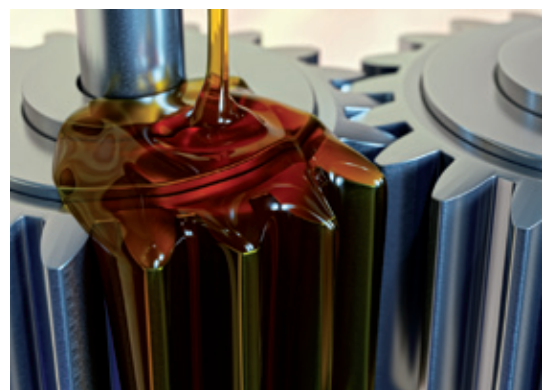


Rhine-Main location in Kelsterbach. The construction time agreed with the cus-

tommer was adhered to as requested."  
Source: BAUER Spezialtiefbau Group

## Ester Base Oils Help Shape the Future

On Wednesday March 24, OQ held a webinar on the added value of esters as base oils and their use in "environmentally acceptable lubricants" and thermal management fluids that transform how electric vehicles perform. The webinar, entitled *Ester base oils – meeting the needs of tomorrow*, was hosted by Dr Jens Kubitschke, Business Development Europe at OQ. In addition to discussing how ester base oils can help formulators develop readily biodegradable lubricants, he also explained how esters' specific properties enable a new technology for more efficient cooling of electric vehicles' batteries: immersion cooling.



"Esters as base oils can provide low viscosity and high flash points as well as excellent thermal and dielectric properties – those properties are needed for future electric vehicles using immersion cooling," said Dr Jens Kubitschke.

Being nonconductive is a prerequisite as batteries are directly submerged into the fluid using this new technology. This offers a much more efficient heat removal, which is key to increasing charging rates.

Thermal management of the battery in an electric vehicle is of very high importance. Batteries work best in a temperature range from 15-35°C. If the temperature gets too high (or too low), this leads to decreased capacity and lifetime. To achieve ultrafast charging rates, a more efficient technology of heat removal is necessary. Immersion cooling using ester base oils could be a game changer in this regard.

OQ, a global, integrated energy company with roots in Oman and operating in 17 countries worldwide, covers the entire value chain from exploration and production to marketing and distribution of end user products. Its Lubricants & Functional Fluids industry segment produces carboxylic acids, polyols and esters. The latter are used as base oils for biodegradable lubricants. Due to low viscosity and excellent dielectric properties, they are also ideal for immersion in cooling fluids for electric vehicles.

Source: OQ

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# Continental Expands General Tire Portfolio

Continental is expanding its General Tire portfolio for the earthmoving industry with the General TE95 tire. The tire impresses with high traction, especially for soil compaction work in road and construction applications, and, like the entire product line, is equipped with V.ply technology. With this expansion, the General Tire tire portfolio grows to a total of 18 tire specifications for the earthmoving industry. The first General Tire earthmoving tires were launched in early 2020 – the portfolio now includes a total of 14 sizes, which are used on wheel loaders and dozers as well as on dump trucks and scrapers.

The optimized tire contour of the General TE95 ensures even pressure distribution on construction vehicles such as single-drum compactors. This keeps construction site soils smooth during compaction. However, sandy, muddy or stony soils can be a challenge for construction vehicles. That is why the General TE95's geometric, robust



tread blocks provide continuous traction performance in a variety of soil conditions. As with all General Tire EM tires, V.ply construction technology ensures strong sidewalls on the TE95, providing optimal protection against punctures and cuts.

The General TE95 complements the existing General Tire V.ply Earthmoving range. As of now, the General Tire portfolio for the earthmoving industry consists of the following tires:

- General TE65: Low aspect ratio and wide

base for wheel loaders and dozers used in heavy-duty digging and loading operations;

- General TE191: Heavy-duty wheel loader tires for digging and loading operations;
- General TE6: Bidirectional L3 tire ideal for skid steer loaders;
- General TE188: Multi-purpose earthmover tire for ADT, RDT, loader and scraper applications;
- General TE132: Wide base tire designed specifically for dump trucks in rough off-road conditions and shorter distance;
- General TE11: Rugged tire design, mainly for grading work;
- General TE95: Uniform pressure distribution thanks to wide base, ideal for compaction work with compactors.

V.ply technology combines the advantages of cross-ply tires and radial tires, by integrating a weave pattern of different strands laid out at special angles. Since steel cord does not provide an optimal bond between the carcass and the rubber casing, V.ply technology uses a high-strength polymer. The carcass of a General Tire V.ply tire consists of up to 22 layers of diagonal fibers embedded in 3 wire cores and precisely aligned in a V-pattern. Unlike conventional cross-ply tires, the intersecting textile layers of a V.ply tire are arranged at an angle of approximately 30°. Together with the sidewall layers, this provides increased tire stiffness and enables a higher level of stability and durability during sudden movements and cornering.

General Tire has more than 100 years of experience and know-how in the development and manufacture of tires specifically made for off-road applications. The world-renowned brand stands as a trusted partner while offering excellent value for money for its tires.

Source: Continental Tires

## The Magna M-Terminal now officially available on Terberg Terminal Tractors

The Magna M-Terminal tires are now available on Terberg terminal tractors. Magna Tyres Group is now an official supplier to one of the leading manufacturers of terminal tractors in the global port handling industry.

Both tire sizes 280/75R22.5 and 310/80R22.5 are now approved and homologated on Terberg equipment. From now on, customers have the possibility to select Magna M-Terminal tires on their new Terminal Tractors.

"This tire demonstrates our longstanding commitment to quality and innovation throughout our product development and we believe that this approval will be a "solid foundation" for accelerating the further internationalization of the Magna brand," said Nick van Loon, marketing manager at Magna Tyres Group.

The Magna M-Terminal is a robust industrial tire for challenging port and terminal conditions where the risk of damage and puncture is very high. The 32 mm deep tread profile and industrial carcass construction results in a better performance, more running hours and less downtime. Its closed shoulder design and strong and wide rib offers outstanding stability and the required traction. The M-Terminal is the perfect solution on all-axles of terminal tractor and trailers.

Source: Magna Tyres Group



# The A20 Series PTO Features a New Rotatable Flange

In the world of power take-offs (PTOs), sometimes the smallest change can have a significant impact. The space to install a PTO is crowded and uncomfortable. Oftentimes, the space is too small to easily fit the PTO and hydraulic pump due to frame rail or other components that may cause interference.

Continual mindfulness of the installation process is important to be able to find ways to make it easier on installers as well as add flexibility to what can be mounted to a PTO.

Jim Abbott, product manager, and Kirk Williams, design engineer, wanted to provide customers more flexibility with the pump mounting flange on the PTO. They learned customers often need to rotate the flange to allow mounting of the hydraulic pump and, in the past, this has been a cumbersome task. With this in mind, they developed the concept of allowing customers to order PTOs with the flange set with a specific position, or even ship it

loose, so they can easily position it as needed.

This new idea was integrated into the new, robust A20 Series PTO which is designed specifically for applications with an Allison 3000 or 4000 Series transmission. The A20 Series PTO is rated for a single intermittent and continuous torque rating of up to 415 lb ft, and is the ideal PTO solution for Class 7–8 trucks with automatic transmissions.

While the first priority is developing a robust PTO unit that can withstand the rigors of everyday use and effectively handle applications with higher torque ratings, there is an additional emphasis on the installation process.

"The main benefits are 30 unique mounting positions (every 6°), no disruption of seals or shims during adjustment, and ability to order custom flange positions, or loose," said Mr. Abbott.



The A20 is compatible with the Muncie Start – an electronically-controlled, modulated clutch engagement system that eliminates torque spikes and allows for a smooth engagement of the PTO.

Source: Muncie Power Products

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## Successful Test With Electric Waste Collection Vehicle from Quantron AG

For a whole 2 weeks, the waste disposal company Entsorgungs-Betriebe der Stadt Ulm (EBU), in the state of Baden-Württemberg, in Germany, was in continuous operation with the Q-Econic, a fully electric waste collection vehicle from the e-mobility specialist Quantron AG.

The test was designed to test the suitability of alternative drives for municipal use. In the city of around 130,000 inhabitants, the waste collectors used their environmentally-friendly waste vehicle from Quantron to empty around 900 waste bins every day over a distance of 80 km on average. During the test phase, the Q-Econic not only impressed with its emission-free and quiet operation, but also with sufficient battery capacity. As a result, the regular working day of the waste collectors could be completed more pleasantly and successfully. In addition, the vehicle mastered the road gradients of Ulm without any problems.



The EBU expressed their satisfaction with the test deployment of Quantron's Q-Econic.

"The biggest advantage of the vehicle is its environmental friendliness: thanks to the all-electric drive and body, the vehicle runs emission-free – and quietly. A great benefit not only for local residents, but also for the workers who were on the road with the vehicle and are most affected by engine noise and exhaust fumes."

Quantron AG is a system provider of clean battery and hydrogen-powered e-mobility for commercial vehicles. Its services include the electrification of used and existing vehicles. Quantron also sells batteries and integrated customized electrification concepts to manufacturers.

Source: Quantron AG

*...more to come in the October issue of  
**InfraStructures** - deadline: September 25*

## Hilltip Introduces the IceStriker™ 500 Spreader

Hilltip announces its new IceStriker™ 500 salt and sand spreader designed for use on UTVs and half-ton pickups, as well as other small machines such as tool carriers and mini loaders. The new spreader is intended to allow smaller vehicles to take advantage of Hilltip's innovative IceStriker technology when spreading in parking lots, courtyards, walkways, pedestrian paths and more.

The IceStriker 500 features a high-quality stainless steel hopper body that is corrosion-resistant and easy to clean, while facilitating smooth material flow. Material delivery is further optimized by an inverted V with a vibrator to help prevent bridging. A 63 mm stainless steel auger is also included to provide a consistent material flow to the spinner.

An advanced color screen controller comes standard with the IceStriker 500, providing users the unmatched ability to either manually set a fixed auger speed or have the material spreading rate automatically adjusted according to vehicle speed. The user-friendly interface provides easy control of the various spreader functions,



such as the vibrator and work light, from the comfort of the cab. Additionally, the controller collects and saves essential data to a USB memory device, which can be used for generating reports.

All IceStriker spreaders are compatible with Hilltip's exclusive HTrack™ tracking software option. This allows for complete remote tracking and management of all software-installed spreaders from a computer, tablet or smartphone. Also,

the 2-way GPRS communication channel allows application rates to be remotely set and adjusted for each customer's site depending on weather conditions.

Other optional equipment includes a pre-wet salt kit for operators looking to take advantage of the benefits of pre-wetting.

Source: Hilltip Corp.

*...more to come in the August issue of  
**InfraStructures** - deadline: July 15*

# Westport Completes Initial Startup and Testing on Hydrogen-Fueled Internal Combustion Engine

Westport Fuel Systems Inc., a global leader in alternative fuel, low-emissions transportation technologies based in Vancouver, British Columbia, recently announced successful startup and initial trials of a heavy-duty internal combustion engine running on hydrogen (H<sub>2</sub>) fuel, using its patented and proprietary High Pressure Direct Injection (HPDI) 2.0™ System.

"We believe H<sub>2</sub>-HPDI could be extremely compelling, with near-zero greenhouse gas emissions and much lower cost than fuel cell vehicles or battery electric vehicles, particularly for heavy-duty trucking and other high-load applications like mining, marine and rail that have come to rely

on the efficiency, power, durability and reliability of diesel engines," said David Johnson, CEO of Westport Fuel Systems. "While there is more work to be done, our initial test results are encouraging and a testament to our team's ongoing commitment to innovation. This demonstrates the inherent versatility of our HPDI system to utilize a range of gaseous fuels and provide a long-term carbonreduction strategy. We are confident there is a larger opportunity to leverage our extensive expertise with gaseous fuel combustion and engine management systems."

"We were able to commence running at full torque and at rated power within

hours of successfully starting the first ever HPDI engine operating on hydrogen," said Scott Baker, Westport Fuel Systems' vice president of Engineering. "Preliminary test results validate our combustion simulations, demonstrating the potential for hydrogen combustion and efficiency comparable to fuel cells in heavy-duty applications. The potential for OEMs and others to avoid new and significant investments that would be required to develop and manufacture fuel cells, electric motors and batteries that are associated with heavy-duty long haul fuel cell electric vehicle product proposals, while leveraging established supply chains, manufacturing investment and infrastructure and economies of scale, is incredibly exciting."

Development is ongoing, with technical results having been reviewed at the Vienna Motor Symposium, which took place April 29-30, 2021.

Source: Westport Fuel Systems Inc.



Using hydrogen as a fuel is not new. Mobility generating practically no CO<sub>2</sub> emissions is very much a reality – and while fuel-cell vehicles are the most common, internal combustion engines able to run on both petrol and hydrogen have been produced and used 15 years ago.

The BMW Hydrogen 7 is one of them. It was a hydrogen internal combustion engine vehicle built in limited production from 2005-2007. Based on the contemporary BMW 7 Series, more specifically the 760Li, it used the same V-12 engine as did the 760i and 760Li. However, it had been modified to run on hydrogen as well as gasoline, making it a bi-fuel engine, similar to vehicles modified to run on propane or natural gas.

The car could switch seamlessly between hydrogen and gasoline at the touch of a button on the steering wheel, or automatically when one of the fuels was depleted.

The hydrogen fuel, in liquid form, was stored in a large and highly insulated tank. The V12 engine, rated at 260 hp (similar to the V8-powered 7 Series), was enough to accelerate the 2.3 t limousine from 0 to 100 km/h in 9.5 seconds. The 8 kg hydrogen tank gave an autonomy of about 200 km added to the 480 km provided by the 74 l gasoline fuel tank.

A short run of 100 total vehicles were produced to put their technology to the test. Some of them were used as taxis around Munich airport, where a filling station was constructed. A fleet of 21 BMW Hydrogen 7 were used as official shuttle vehicles at the COP 14 climate change conference in Poznan, Poland back in December 2008.



The Media Kit  
is available for download on  
[www.infrastructures.com](http://www.infrastructures.com)



# Hendrickson Launches HAULMAAX® EX Heavy-Duty Rubber Suspension on International HX Series

Hendrickson Truck Commercial Vehicle Systems recently announced that it has partnered with Navistar to offer HAULMAAX® EX as a part of the chassis enhancements of the International® HX.

"Just like the newly redesigned International HX Series, Hendrickson took a great suspension and made it better," said Mark Stasell, vice president Vocational Truck Business, Navistar. "The HAULMAAX EX delivers improved performance and durability, which helped our team design the new HX Series for productivity, durability, and comfort."

With the updated vehicle's release, Hendrickson will be launching its next-generation, heavy-duty rubber suspension HAULMAAX EX as the standard rubber suspension offering, addressing the growing demand for rubber suspensions across all vocational applications. The

HAULMAAX EX suspension is optimized to provide increased site rating, expanded capacity ranges, and improved durability.

HAULMAAX EX is designed for vocational applications where durability and performance are essential. This innovative suspension offers an ideal balance of unloaded ride quality and loaded stability. HAULMAAX EX is the lightest weight suspension in its class, allowing the ability to increase the payload of the vehicle.

These suspensions provide the versatil-



ity needed for trucks and tractors that operate both on-and off-highway. The suspension's equalizing beam distributes the load equally between both axles in off-road and uneven terrain conditions. The innovative design eliminates fixed center bushing pivot points to reduce wheel hop.

These suspensions provide the versatility needed for trucks and tractors that operate both on-and off-highway. The suspension's equalizing beam distributes the load equally between both axles in off-road and uneven terrain conditions. The innovative design eliminates fixed center bushing pivot points to reduce wheel hop. When paired with Hendrickson TRAAX RODs, stability is enhanced, and articulation increased for improved on/off-highway operation.

"Customers today expect more out of their vocational suspensions. HAULMAAX EX exceeds expectations by expanding on the capabilities of the current HAULMAAX design. With up to a 31,750 kg site rating for the 20,865 kg capacity suspension. HAULMAAX EX is extremely rugged, supporting the most demanding vocational applications and offering capacities of 18,145 kg, 20,865 kg, and now 23,585 kg," said Ashley Dudding, director of Engineering for Hendrickson. "Hendrickson utilized our industry-leading analysis and validation techniques to ensure HAULMAAX EX would meet these rigorous demands, minimize maintenance requirements, and deliver the lightest weight vocational suspension on the market."

Source: Hendrickson USA, L.L.C.

## ZF Launches First Pilot Project for Electrified Mobile Excavator Drivetrain

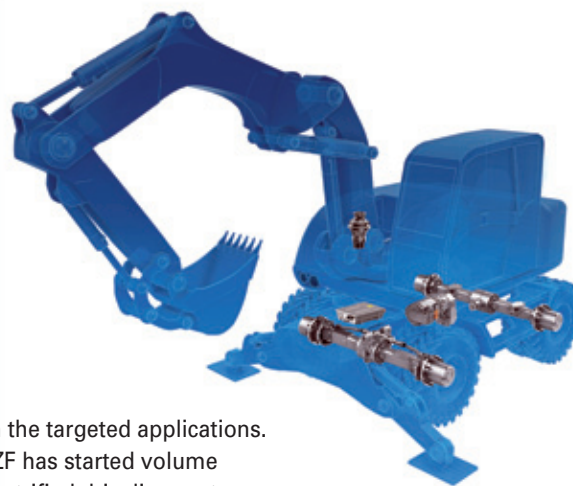
ZF recently announced the launch of its first pilot project involving electrification of a wheeled excavator drivetrain. The system consists of a 2-speed powershift transmission, electric motor and inverter. It can be scaled up to peak torque 850 Nm and continuous power of 80 kW. Three systems of the electric central drive system eCD50, eCD70 and eCD90 are available to cover different vehicle sizes in the targeted applications.

The pilot comes shortly after ZF has started volume production of its eTrac eCD20 electrified driveline system for compact equipment like compact loaders.

With this future-oriented solution, technology leader ZF is setting new standards for electrical drives, especially when it comes to integrated system solutions. The product portfolio for mobile excavators is rounded off by a newly developed electrified swing drive and the well-established MULTISTEER and MULTITRAC front and rear axles.

The electric drive system satisfies all the expectations for performance and productivity found in traditional drivelines and combines them with the extensive benefits and opportunities that electric systems have to offer. Thanks to its modular design this new range of electric central drives can easily be adapted for various vehicle applications like backhoe loaders, telehandler, and forestry equipment as well.

Source: ZF Friedrichshafen AG



# ARB 4x4 Accessories for the New Ford Bronco

Australia's largest manufacturer and distributor of 4x4 accessories, ARB, recently announced a strategic collaboration with Ford Motor Company to develop a full suite of premium, aftermarket products for the all new Ford Bronco. For the last few years, ARB has been working hand-in-hand with Ford designers and engineers to ensure each ARB accessory not only complements the Bronco's heritage and performance, but is fully integrated into the original vehicle design.

This strategic collaboration consists of ARB engineers and designers working together with their counterparts at Ford Motor Company. Chassis structural design, roof load-carrying capacity, suspension travel, snorkel air intake, air systems routing, fridge/freezer wiring, and other salient details necessitated not only CAD and vehicles, but more critically, access to the subject-matter experts who made the new Bronco a reality. The working relationship between Dearborn and Melbourne has

driven a portfolio of innovative accessory solutions for Bronco customers ready for vehicle launch.

Early in the rebirth of the Bronco, Ford Motor Company called in a panel of industry experts, including ARB USA president, Doug Pettis.

"Ford took a completely new approach to customer-centric design with the Bronco," said Mr. Pettis. "Personalization and customization is in the DNA of this project. Ford went the extra mile to ensure the Bronco was built to be accessorized, modified, and personalized to suit the demands of the consumer; especially the overland traveler."

"ARB's manufacturing expertise, powered by innovative engineering and



design, has been the driving force behind our growth for over 4 decades," he added. "The unique combination of ARB's aftermarket presence and our 35-year history working with OE's as a tier-one manufacturer around the globe was the primary driver of Ford's decision to onboard ARB."

The full suite of Bronco accessories from ARB will be available to new Bronco customers this summer through over 1,000 Ford dealerships and authorized ARB retailers throughout North America.

Source: ARB USA

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**SMI 7200, rebuilt 1997, GM V-12 engine** ..... **\$48,500**



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**1996 SMI 8400, GM / GM 700 hp, 4,000 t/h capacity, very clean** ..... **\$105,000**



**1999 VOHL DV-4000, JD 275 hp engine, telescopic chute, ice screw, good condition** ..... **\$67,500**



**1988 JETAIR II, Cummins engine, very clean** ..... **\$55,000**



**1997 RPM TECH for snow depot, Cummins 475 hp engine, 3,600 h** ..... **P.O.A.**





## Ultra-Capable Concept Vehicles at the Easter Jeep Safari

Enthusiasts from all over the world gathered in Moab for an extended holiday week of trail rides and technical off-roading on some of the most challenging and picturesque terrain.

The 2021 Easter Jeep Safari brought together 4 new concepts, and 3 from 2020.

The Jeep Magneto, a fully capable zero-emission vehicle that is stealthy, quiet, quick and an unmistakable rock-climbing force.

Based on a 2-door 2020 Jeep Wrangler Rubicon, it uses a custom-built axial flux electric motor that operates up to 6,000 rpm. The 285 hp e-motor is connected to a 6-speed manual transmission, creating a unique manual-electric powertrain with a clutch that operates as it would with an internal combustion engine.

Intentional calibrations developed during testing help the Magneto's powertrain emulate the driving experience of the 3.6 l Pentastar V-6.

This year's "Resto-Mod" is a throwback to the 2<sup>nd</sup>-generation Jeepster. Originally designed around the growing interest in leisure time use of 4x4 vehicles, the Jeepster Commando was the first compact 4-wheel-drive vehicle with an automatic transmission and, unlike the Jeep CJs of its day, it boasted modern amenities, such as doors, roll-up side glass, a heater and roof, as standard equipment.

The Jeepster Beach concept started as a 1968 Jeepster Commando (C-101) and was seamlessly blended with a 2020 Jeep Wrangler Rubicon. The body was modified, but the Jeepster Beach maintains the outward appearance of a vintage Jeepster.

Under the hood, it uses a 2.0 l turbocharged I4 engine with a custom calibration that increases the engine output to 340 hp. An 8-speed automatic transmission mated to a 4:1 transfer case delivers power to 35" tires.

The Jeep Red Bare Gladiator Rubicon concept builds upon a long-standing heritage of hardworking trucks, paired with legendary Jeep 4x4 capability to deliver ultimate performance, fuel efficiency and driving range.



Powering the Red Bare concept is the turbocharged 3.0 l EcoDiesel V-6 engine, rated at 260 hp mated to a TorqueFlite 8-speed automatic transmission, calibrated for low RPM shifts and to easily maneuver rigorous ground. Dana 44 front and rear heavy-duty axles have been upgraded

with 4.88 axle ratios for optimum performance. The Red Bare Gladiator delivers an impressive 91:1 crawl ratio to tackle the toughest trails that Moab has.

The Jeep Orange Peelz concept pays tribute to the long-standing, open-air, fun-and-freedom lifestyle that makes the Jeep Wrangler a global icon. Mopar designers have enhanced the Wrangler's open-air heritage by removing side and rear windows, installing prototype JPP half doors and a custom removable one-piece Freedom Top glass sunroof.

Off-road performance comes from the proven JPP 2" lift kit, FOX shocks, 17" JPP beadlock-capable aluminum wheels with 37" BF Goodrich KM3 mud-terrain tires that increases ground clearance.

The Jeep Orange Peelz is equipped with a windshield made with Corning Gorilla Glass and custom rock rails provide superior protection and durability for serious off-roading.

Three Jeep and Mopar concepts introduced in 2020 also headed to Moab for the first time, including the go-anywhere overlanding Jeep Gladiator Farout concept, the powerful, high-performance Jeep Wrangler Rubicon 392 concept and the Jeep Gladiator Top Dog concept aimed at hard-core mountain bike enthusiasts.

Created in 2012 and offered by Mopar for the Jeep brand, Jeep Performance Parts (JPP) provide off-road enthusiasts with high-end, hard-core quality aftermarket accessories and performance parts. The portfolio of factory-backed, quality-tested parts includes axles, lift kits, bumpers, winches, skid plates, suspension components, and more. The products are created in close conjunction with the Jeep brand, engineering and product design-office teams for development, testing and validation.

Source: Stellantis

# Appointments

**WSP Canada** recently announced that **Marie-Claude Dumas** has been named the company's new president and CEO.

"After witnessing first-hand, the undeniable talent and level of expertise of WSP in Canada over the past year, I am proud to continue to work alongside the Canadian leadership team as we pursue the organization's strategic ambitions to further our client centric approach and people development initiatives," said Ms. Dumas.



A member of the Ordre des ingénieurs du Québec, Marie-Claude Dumas brings a proven track record as a global engineering and senior construction executive with over 20 years of consulting and multi-disciplinary management experience. In her previous role, she was responsible for the performance and positioning of WSP's major projects, project managers and programs on a global scale. In addition to her role as president and CEO of WSP Canada, she will serve as the Global Leader for Inclusion and Diversity for WSP.

This appointment is significant in the Canadian engineering landscape. Ms. Dumas' background both in the Canadian and global market, as well as the caliber of her work in her time at WSP, make her the ideal industry leader to navigate WSP Canada through this time of transition, as the company welcomes the team from Golder to its thriving operation.

Source: WSP Canada

**CZM Foundation Equipment** recently announced the appointment of **Josh Jenkins** as rental fleet coordinator for the company. Mr. Jenkins will oversee all aspects of trucking, logistics, repairs, and service for the rental fleet and brings over 10 years of experience in logistics management from his time in the Coast Guard and with Gulfstream.



CZM Foundation Equipment offers a comprehensive line of machines engineered for a variety of foundation applications, including portable and truck-mounted equipment. CZM Foundation Equipment is the American division of CZM Corp., the leading foundation equipment manufacturer in South America, founded in Brazil in 1976. CZM Corp. manufacturers distributes a wide range of models worldwide. The U.S. home office and manufacturing facility is in Ellabell, Georgia, just outside of Savannah.

Source: CZM Foundation Equipment

A change in the management of the Off-Highway and Test Systems Business Unit of ZF has recently come into effect: **Daniel Härter** is the new head of the largest business unit within the **Industrial Technology Division of ZF**.

Mr. Härter has held various management positions for ZF since 2003. He was manager in the product line construction machinery axles and then head of Materials Management for the Industrial Technology Division, and head of the Marine product line. In 2017, he started his current function as head of the Marine and Special Driveline Technology Business Unit. He will continue this task in addition to his new function until at least the end of the year.

Daniel Härter succeeds Udo Kneitz, who elected to leave the company at the end of 2020. Until the appointment of Daniel Härter, Alexander Seeliger has headed the Business Unit on an interim basis in addition to his function as business director for Off-Highway Systems.

The Off-Highway and Test Systems Business Unit, headquarter-

...continued on page 30

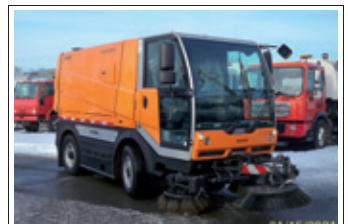


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Year: 2018-19-20



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IMG-928 36 hours

Year: 2017

Price: 56,500\$



**Wirtgen W150 CF**  
Wirtgen W200i

Year: 2017

Price: 479,000\$



**Hamm H7iP**  
Year: 2018  
Hours: 10  
Padfoot



**Crack Sealant  
Marathon Kera 180BRE**

Year: 2021

Price: 61,500\$



**Mauldin 1550-D Paver**  
Mauldin 1560 Paver

Starting at: 125,000\$



**Hamm HD90VV Roller**  
IMR-1365 66"

Year: 2016

Price: 58,500\$



**Gilcrest Pavemaster 5140 Paver**  
IMP-1070

Year: 2020

Price: 150,000\$



**Asphalt Trailers**  
IMG-859

Year: 2018

Price: 20,000\$



**Hamm HD90VV Roller**  
IMR-1137

Year: 2018

Price: 135,000\$



**Mauldin M415XT Grader**  
With joystick control

Year: 2021

Price: 220,000\$



**John Deere 85G Excavator**  
IML-1005 1920 hours

Year: 2015

Price: 90,000\$



**Bomag BW161AD-5 Roller**  
66"

Year: 2020

Price upon request



**Hamm HD13VV Roller**  
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continued from page 28...

tered in Passau, Germany, comprises the development and production of transmissions and axles for agricultural and construction machinery as well as driveline technology for material handling systems. Test systems for all kinds of applications in driveline and chassis technology are also included in the division's portfolio.

Source: ZF Friedrichshafen AG

**JLG Industries, Inc.** recently announced that **Joe Kleiner** has been named regional vice president for the Eastern United States and Eastern Canada. He replaces Brent Miller who has recently been named vice president of channel management for JLG. In his new role, Mr. Kleiner's primary focus will be leading JLG's sales and service growth within the region.

In Canada, Joe Kleiner oversees the following provinces: New Brunswick, Newfoundland and Labrador, Nova Scotia, Ontario, Prince Edward Island and Quebec.

"The heavy equipment market is constantly evolving which presents many growth opportunities," said Mr. Kleiner. "To position JLG for continued success, our team is focused on understanding our customers changing needs to elevate the access industry in 3 key areas: productivity, safety and technology, while delivering the industry's broadest range of lifecycle solutions, including parts, service and training."

Joe Kleiner has been with JLG for 8 years, starting off his career in the company's sales trainee program. Prior to taking on this new role, he was a district sales manager in the Western Region, serving customers in Northern California and Nevada, and in the Midwest Region, servicing customers in Indiana and Illinois.

Source: JLG Industries, Inc.



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# Agenda

*Because of measures taken in many countries to counteract the coronavirus pandemic, it is essential to check whether an event you are interested in will take place and... on what date.*

## World of Concrete

Exhibits June 8-10, 2021 • Education June 7-10, 2021  
Las Vegas, NV USA

## MATEXPO 2021

September 8-12, 2021  
Courtray (Kortrijk), Belgium

**MATEXPO 2021**

## Nordbau

September 8-12, 2021  
Neumünster, Germany

**NORDBAU**

## inter airport south east asia

Rescheduled to September 22-24, 2021  
Singapore

**inter airport**  
south east asia

## The Utility Expo

September 28-30, 2021  
Louisville, KY USA

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## The ARA Show

Rescheduled to October 17-20, 2021  
Las Vegas, NV USA

## Intermat INDIA

Rescheduled to October 18-20, 2021  
Mumbai, India

## inter airport europe

November 9-12, 2021  
Munich, Germany

**inter airport**  
europe

## SMOPYC 2021

November 17-20, 2021  
Zaragoza, Spain

**SMOPYC**  
2021

## bauma CONEXPO INDIA

Rescheduled to 2022  
Greater Noida/Delhi, India

## Work Truck Show

Rescheduled to March 8-11, 2022  
Indianapolis, IN USA

## World of Asphalt

Rescheduled to March 29-31, 2022  
Nashville, TN USA

## Atlantic Heavy Equipment Show

Rescheduled to April 13-14, 2022  
Moncton, NB Canada

## IFAT

May 30 - June 3, 2022  
Munich, Germany

## AORS Municipal Public Works Trade Show

Rescheduled to June 1-2, 2022  
Barrie, ON Canada

## Svenska Maskinmässan

Rescheduled to June 2-4, 2022  
Stockholm, Sweden

## Hillhead

Rescheduled to June 21-23, 2022  
Buxton, Derbyshire, UK

## InnoTrans

Rescheduled to September 20-23, 2022  
Berlin, Germany

## bauma

Rescheduled to October 24-30, 2022  
Munich, Germany

**bauma**

## International Rental Exhibition (IRE) / APEX access show

Rescheduled to 2023  
Maastricht, the Netherlands

## steinexpo

Rescheduled to Summer 2023  
Homburg/Nieder-Offleiden, Germany

**steinexpo**

## INTERMAT Paris

Rescheduled to April 2024  
Paris, France

**INTERMAT**



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MSRP: \$22,000  
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MSRP: \$11,000  
FVP59



Wintec Broadcast Spreader 51"  
MSRP: \$23,500  
BD551



METEC Folding V-Plow: 71"  
MSRP: \$9,500  
FVP71



METEC 72" Double Auger Box  
Blower with Truckload chute  
MSRP: \$11,000  
SB72



Dücker Flail mower  
MSRP: \$15,200  
USM13

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### Hatz, Le seul motoriste à offrir un moteur monocylindre électronique!

Le nouveau moteur électronique monocylindre E1 de Hatz permet de faciliter la surveillance et la maintenance du moteur. De ce fait, cette capacité de mieux gérer le moteur permet d'augmenter son temps d'opération de façon proactive. Le moteur E1 est équipé d'un système d'injection électronique, permettant de minimiser la consommation d'essence par l'entremise d'une analyse constante du régime, de la charge ainsi que de la pression d'huile du moteur. Aussi, le moteur E1 de Hatz permet de gouverner électroniquement le régime du moteur, ce qui permet une vitesse entièrement variable. Grâce au régime variable, les fabricants peuvent désormais utiliser un seul modèle de moteur monocylindre, dans une vaste gamme d'applications. De plus, les moteurs Hatz refroidis au glycol de la série H50 (50Hp-75Hp) sont les plus compacts et les plus légers sur le marché, garantissant un rapport puissance/poids des plus compétitifs, pour vos applications où l'espace est restreint. Si vous recherchez une gamme complète de petits moteurs diesel qui a tout pour plaire, tournez-vous vers Hatz; le seul motoriste qui offre une gamme entièrement numérique.



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