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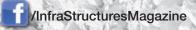
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A Brief Word...

Fitting that in such a somber month as this, when reflection, remembrance, and solemnity reign, we bring you an edition full of such things.

2020 will be recalled by all through the waning and waxing monocle of time. Experience is never accurately recreated, but events are faithfully recorded like navigational buoys.

Where equipment is concerned, these events are spectacles of creative dynamism when our industry was in its embryonic and evolutionary throws. Newcomen, may be said to be the "Father", which could make Bernoulli the "Mother" and the offspring, names from our childhood and careers. W.G. Armstrong, Diesel, Hornsby and Letourneau amongst the ranks with Ferguson, Brown and Bamford also answering this illustrious roll call.

In this issue you will read of current developments as well as milestone celebrations of homage to many familiar names.

A year, and certainly a month that shall live in our collective memory is perhaps a suitable opportunity to reflect upon our Salad days.





On the cover:

one of the 20th Century's most successful British companies, and one of the most recognized names in the construction equipment world today was founded 75 years ago in a small garage in a small town in the West Midlands of England.

This year, JCB built its 750,000th backhoe loader.

PROCORE ACQUIRES CONSTRUCTION ESTI-MATING AND TAKEOFF COMPANY, ESTICOM

Procore Technologies, Inc. recently announced it has acquired Esticom, a cloud-based estimating and takeoff solution and leader in preconstruction technology. This acquisition will add powerful estimating functionality to the Procore platform, complementing Procore's preconstruction offering by enabling greater accuracy in cost estimates, helping general contractors

and specialty contractors win more bids, increasing productivity, and reducing risk throughout the lifecycle of a project. Terms of the transaction are not being disclosed.

During preconstruction, project planning takes place to define the project details, identify potential issues, finalize designs and drawings, define project budget, scope and schedule. Esticom helps the construction industry streamline the traditionally cumbersome process of takeoff and

estimation. It enables contractors to quickly determine the quantities of materials needed on a job using project drawings and specifications, and then calculate labor and material cost estimates using a built in catalogue of materials and assemblies.

"We welcome the Esticom team to Procore," said Tooey Courtemanche, Procore founder and CEO. "Procore is investing in the future of preconstruction, an increasingly important and impactful part of the construction process. Together, Procore and Esticom will deliver a single, comprehensive preconstruction solution on the Procore platform, with data connectivity that helps customers track costs and accurately predict estimates."

With the acquisition of Esticom, Procore extends its product capability into earlier stages of the construction lifecycle connecting owners, general contractors and speciality contractors on a single platform.

"Contractors who use Esticom typically see a three-fold increase in the number of construction projects they can estimate, and a five-fold increase in takeoff speed. Esticom is modernizing preconstruction by replacing paper plans and spreadsheets, and delivering more accurate estimates. We look forward to further advancing preconstruction as part of the Procore platform," said Chris Lee, cofounder of Esticom.

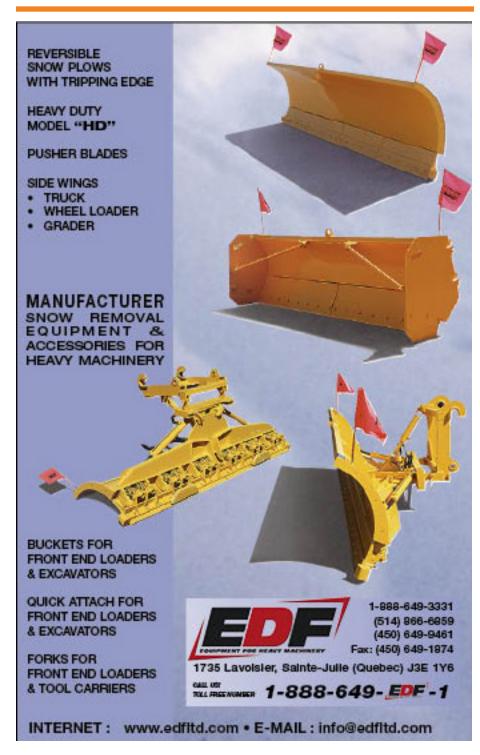
Procore plans to fully integrate Esticom into the Procore platform in 2021. In the interim, Esticom will remain a partner on the Procore App Marketplace, with an existing integration where estimates can be exported directly to generate a project budget within Procore. Current Esticom users will continue to be supported as usual, and the product is available for purchase through Esticom.

Source: Procore Technologies, Inc.

AIR COMPRESSORS ARE THE MOST IMPORTANT EQUIPMENT FOR SERVICE TRUCKS

VMAC's 2020 State Of The Mobile Compressed Air Industry Report has revealed air compressors as the single most important piece of equipment on service trucks.

One question asked respondents to pick the 2 most important pieces of equipment on their service vehicles, out of air compressors, cranes, generators, welders, or other. Of the 205 people who answered, 87% chose air compressors as one of the



top 2 most important pieces of equipment.

The results for generators, cranes, and welders were split closely, with 32%, 31%, and 27% of respondents selecting these pieces of equipment as their top 2 most important.

"In 10 years of being a field service mechanic I've learned a couple things about the importance of having enough reliable air power on hand," said Stephen Cox, a YouTube personality for mechanics. "One is that not having enough air flow available when you need it is detrimental to any service job... Having a good, reliable air compressor on a service truck was more important to me than almost any other feature of the truck."

Air compressors ranked even higher in popularity when segmenting the 47 operators and mechanics who answered the survey. 94% of these respondents chose air compressor as one of their top 2 most important pieces of equipment. Operators and mechanics were also the only segment that considered welders to be the second most important piece of equipment on their service truck.

"The air compressor would be the most important piece of the service truck and the welder would be the second most important," said Brandon Boorman of Boorman Farms.

VMAC's State Of The Mobile Compressed Air Industry survey took place between October 2019 and January 2020, and compiles original research from business owners, service truck operators, mechanics, and fleet managers about the state of the mobile compressed air industry.

The survey results can be downloaded for free at www.vmacair.com/survey Source: VMAC Global Technology Inc.

TRATON AND NAVISTAR – AGREEMENT IN PRINCIPLE

TRATON SE and Navistar International Corporation, in which TRATON already holds a stake of 16.8%, have reached agreement in principle that TRATON will acquire by merger all shares in Navistar not already held by TRATON, at a price of US\$44.50 (\$58.55) per Navistar share.

"We are pleased to have reached agreement in principle for a transaction after intensive negotiations with Navistar. We are looking forward to completing our due diligence and obtaining the necessary approvals in respect of this exciting deal in

order to welcome the new TRATON family member," said Matthias Gründler, CEO of TRATON SE.

This agreement in principle remains subject to finalization of due diligence to the satisfaction of TRATON, agreeing on the conclusion of a merger agreement and related transaction documents and the approval of the transaction by the executive bodies and committees of TRATON and VOLKSWAGEN AKTIENGESELLSCHAFT

as well as the Board of Directors and the Shareholder Meeting of Navistar.

There is no assurance that the parties will reach agreement on definitive transaction documentation, or as to the terms thereof or that any transaction, if such agreement is reached, will ultimately be consummated.

Source: TRATON SE



CAMSO ACQUIRES METRO INDUSTRIAL TIRES

Camso, a Michelin® Group company, continues to grow its off-highway transportation (OHT) tire service and distribution presence with the acquisition of the material-handling solutions businesses from Metro Industrial Tires, based in the greater Chicago area in Illinois.

"Chicago is one of the largest materialhandling markets in the U.S.," said Bob Bulger, vice president and general manager, Camso North America. "Metro had been a valued customer for many years with an exceptional service model. Over that time, a strong, long-term relationship has been formed that will benefit our already strong sales and service team."

Founded in 1983, Metro has employees based in 2 locations, south of metro Chicago, in Alsip and north of metro Chicago, in Lombard. Each location has a fleet of

press trucks enabling them to provide bestin-class service levels to the market.

"The acquisition of the material-handling solutions business from Metro will expand and strengthen the chain between tire manufacturing, distribution and service for Camso," continued Mr. Bulger. "It will allow us to find new and innovative ways to meet our customers ever-changing needs for skid steer tires, rubber tracks, foam-filled tires, filled assemblies and ancillary products as well as service. This will benefit our fleet, national account, original equipment and equipment dealer customers."

Camso is a world leader in the design, manufacturing, and distribution of off-road tires, wheels, rubber tracks and undercarriage systems to serve the material handling, construction, agricultural and powersports industries. It has more than 7,500 dedicated employees and operates advanced R&D centers and manufacturing plants in North and South America, Europe and Asia. Camso is a supplier to leading original equipment manufacturers (OEM) and distributes its products in the replacement market through its global distribution network.

Source: Camso North America

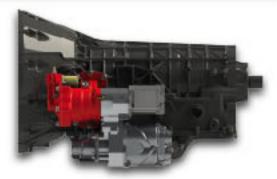
EDMONTON-BASED SYNERGY GROUP OF COMPANIES EXPANDS ACROSS CANADA

Edmonton owned and operated Synergy Group of Companies (SGC) has formalized a partnership that will see their firm expand across central Canada. Effective October 1, 2020, Ottawa-based Morley Hoppner has joined together with the Synergy Group of Companies, which is comprised of Synergy Projects, SynVest and Innerspaces. This is a major alliance that reflects the company's long-term strategy for growth.

"The success of Synergy over the last 25 years couldn't have been possible without the incredible support of the Edmonton business community," shared SGC president, Tim Varughese. "Partnering with an established Ottawa firm will empower the Synergy Group of Companies to combine resources and diversify across Canada. As the company grows, we are excited to pass on further efficiencies to clients, and bring value back to Alberta."

For more than 30 years, Ottawa-based Morley Hoppner has been successful in being a leader in providing value-add con-

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struction services in Ottawa, enriching and enhancing city neighborhoods in which they operate. The company has uniquely adapted to changing markets, neighborhoods, cultures, and economics, pioneering projects such as the award-winning Westboro Station, and setting benchmarks for the industry.

"We are proud of the organization that we have built over 3 decades," shared Brian Morley, president of Morley Hoppner. "The partnership with Synergy is a natural fit, where 2 family-based companies with strong values are coming together to service the construction market across Canada."

Synergy Group of Companies is a fullservice construction firm that represents forward thinking people, process, and partnerships. Morley Hoppner is similar in size, background story, and family-oriented culture. All staff, clients, and stakeholders remain paramount to the growth of the company and to the success of this new partnership. Synergy's head office will remain in Edmonton.

"Edmonton has always been our home

and will continue to be," explained Dennis Mozak, founder and CEO. "When I founded this company nearly 25 years ago, I never could have imagined how this community would have supported us on our journey to where we are today. We look forward to continuing to be a pivotal piece of Alberta's economy while growing into new markets."

Source: Synergy Group of Companies

SERIOUS LABS ANNOUNCES FIRST INTER-NATIONALLY ACCREDITED HEAVY EQUIP-MENT OPERATOR TRAINING BY SIMULATOR

Serious Labs, the leader in virtual reality (VR) solutions for training and operations of heavy equipment, recently announced that for the first time, an internationally accredited course in commercial heavy equipment training can be completed via simulator. Operators may now receive their PAL+ operator training, an extension of the International Powered Access Federation (IPAF) Powered Access License (PAL), through Serious Labs' VR Mobile Elevating Work Platform (MEWP) simulator.

"This is a huge milestone; not only from

a MEWP industry perspective, but from a virtual technology perspective as well," said Jim Colvin, CEO, Serious Labs. "We are the first and only company in the world to offer this level of accepted, approved training in which a virtual simulation can replace a physical piece of equipment. In this case, it's a boom lift and scissor lift."

IPAF's PAL+ operator training was developed in response to increasing demand from contractors in the UK for a recognized qualification demonstrating advanced operator proficiency and signifying a certain level of experience in using different types of MEWPs in a variety of challenging environments and scenarios.

For over a year, IPAF conducted a series of "controlled trials" with dozens of its training members in Europe and North America to deliver PAL+ training that tested candidates using Serious Labs' VR MEWP simulators instead of real machines. Trials were completed over 18 months by training centers within the UK. The extensive trials and testing concluded that the training outcome was the same, whether the operator was tested on the VR simulator or tested on a physical MEWP.

The PAL+ course is aimed at trained operators who work in higher risk or challenging environments, e.g. steelwork, work in confined overhead spaces, or work on challenging terrain. PAL+ training is open to operators who hold an existing PAL Card qualification in the relevant category.

Previously, the PAL+ course was conducted at training centers with difficulty due to the complexity of the course. Complications ranged from the size of the space needed, weather conditions, and time needed to conduct the course. The virtual training also provides the ability to stagger training and allow control of the environment's sanitary conditions, a necessity during the current coronavirus pandemic.

IPAF has over 1,400 members in 70 countries and regions worldwide. More than 800,000 valid PAL cards are in circulation and 150,000 PAL Cards are issued each year through IPAF-approved training centers around the world. Completion of the course renews a PAL Card holder's license for another 5 years. IPAF's PAL Cards are recognized globally as proof of the highest standard in Mobile Elevating Work Platform (MEWP) operator training.

Source: Serious Labs



NORTH AMERICAN CONSTRUCTION GROUP LTD. ANNOUNCES AWARD OF GOLD MINE CONSTRUCTION CONTRACT

North American Construction Group Ltd. (NACG) recently announced the award of a major earthworks construction contract at a gold mining project in northern Ontario.

The contract was awarded to a newly formed joint venture owned and operated equally by NACG and Nuna Group of Companies. The award of this 2-year project, valued at over \$250 million, reflects the expertise and client trust Nuna has gained over its 27-year history. The scope will occur during the construction phase of the gold mine project and is expected to commence this quarter, ramp up through Q1 2021, achieve peak volumes in Q3 2021 and be completed in the fall of 2022.

The bid process benefitted from the ownership structure by offering both an Indigenous contractor with extensive expertise in the harsh conditions of northern Canada together with the heavy equipment fleet and maintenance experience offered by NACG. As part of the contract award, Nuna and the joint venture have partnered with local communities which will participate directly in the project benefits received.

Nuna is the largest Inuit-owned heavy civil construction, earthworks and mine construction contractor in Canada and maintains a Certificate of Inuit Firm Status. Nuna's client base consists of resource companies whose projects span from smaller public and private civil projects to multi-national, full-scale projects. Nuna has a demonstrated commitment to hiring Indigenous and local people who live in the areas where it does business. Nuna is jointly owned in a 51-49 percentage by the Kitikmeot Corporation and North American Construction Group Ltd., respectively.

Source: North American Construction Group Ltd.

ALUMASAFWAY RECEIVES SCSA CONSTRUCTING SAFETY LEADERSHIP AWARD

AlumaSafway, a BrandSafway company, has been named a 2020 Constructing Safety Leadership Award winner by the Saskatchewan Construction Safety Association (SCSA). These annual awards recognize the most successful safety companies and leaders among the SCSA's members, based on their significant achievements in safety leadership and

excellent safety practices during the prior vear (2019).

"This award demonstrates our commitment to continually raising the bar and leading our industry in safety," said Steve Wilson, vice president of Global Environmental Health and Safety (EHS) for BrandSafway. "Excellence in safety doesn't just happen. It takes a commitment to our Five Pillars of Safety and living and breathing safety 24/7. I would like to take this opportunity to thank the SCSA for their partnership and to congratulate Justin Lasnier, the regional safety manager, Don Black, Saskatchewan branch manager, and all of our dedicated trades workers in Saskatchewan for this outstanding achievement."

The SCSA is an industry-funded, membership-based non-profit organization that provides safety training and advice to employers and employees in the construction industry throughout the province. Serving almost 10,000 member companies, the vision of the SCSA is to create the safest construction environment in Canada.

"The work done by our members demonstrates that all companies, regardless of size, can reduce risks and costs through improved safety," said Collin Pullar, president of the SCSA, "and we congratulate AlumaSafway on its impressive achievements with this Constructing Safety Leadership Award."

Source: BrandSafway



3WD Crete Rod Delivers Concrete Across the Most Challenging Terrains

Crete Rod introduces a powerful all-wheel drive material handler that delivers its payload across even the most demanding terrains, including tight quarters with limited access. The nimble, 3-wheeled workhorse was designed from the ground up to overcome the limitations of using



concrete buggies, pumps and skid steers for material hauling.

The Crete Rod serves as a low-profile equipment option and has a low center of gravity for stability. Its long wheelbase, coupled with all-wheel hydro-static drive and hydraulic cylinder-driven rack and pinion steering deliver unparalleled stability, maneuverability, efficiency and versatility.

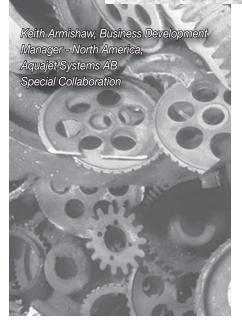
A 3-cylinder Kubota Tier 4 diesel engine and variable displacement axial piston hydraulic pumps provide ample power, allowing the Crete Rod to deliver 1 m³ of concrete precisely where it is needed. Weighing just 1,088 kg, the highly maneuverable Crete Rod is easy to load and unload from trailers, simplifying transport from job to job.

The low discharge height greatly reduces the splash for a cleaner pour and a faster clean-up.

The Crete Rod moves concrete and other building materials across varied terrains and in restricted spaces like indoor and outdoor construction sites, bridge construction projects, mining facilities, landscape contracting projects, and more.

Source: Material Haulers, Inc.

Maintain Productivity Amid a Skilled Worker Shortage With Hydrodemolition Robots



If you had to guess, what would you say is the number one concern of today's contractor? Managing tight deadlines? Ensuring worker safety? Keeping up with developments in technology? How about input costs?

According to the Associated General Contractors of America, what keeps contractors up at night is the availability – or more accurately, the lack – of skilled labor. In fact, 80% of firms expect it will remain difficult to hire qualified workers in the coming months due to older workers leaving the profession during recession years and younger workers seeking less labor-intensive jobs. In addition, the world construction market is projected to grow 85% by 2030, adding stress to an industry already struggling to keep up with demand.

The circumstances for concrete repair contractors are particularly challenging. In an October 2019 news release, the Portland Cement Association predicted cement consumption would continue growing over the next 2 year – +1.7% in 2020 and +1.4% in 2021 – all while the skilled labor force continues to dwindle.

To add to the dilemma, contemporary concrete demolition methods are not ex-

actly scalable; the only way to increase output is with more workers. Many concrete repair contractors rely on manual concrete removal methods, such as pneumatic paving breakers or hand lances that use a high-pressure water jet. However, some contractors are finding a productivity boost from another type of equipment: compact hydrodemolition robots. The system allows a project to be completed as much as 10 times faster than with hand lances, reducing fatigue, labor costs, and improving safety and quality of work along the way.

MORE WORK, FEWER WORKERS

Though widely used, hand lances do

little to advance concrete contractors' goals of improving productivity to match growing demand. The tools, inherently saddled with issues of fatigue and injury, drive up workman's compensation costs. And due to design limitations, hand lances provide

limited value in terms of power, precision and productivity.

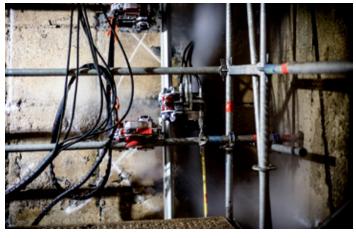
Some are finding that the solution to increasing productivity lies in recruiting machines rather than additional people. Many concrete repair contractors are turning to remote-controlled hydrodemolition robots to improve workforce utilization and jobsite productivity. These machines allow workers to stand at a safe distance and monitor the equipment, reducing operator fatigue while simultaneously increasing precision and efficiency.

Some manufacturers now provide the same advanced technology of standard hydrodemolition robots in lighter, smaller systems. At a fraction of the cost of standard machines, compact robotic hydrodemolition systems provide a costeffective mode of entry for concrete repair contractors who want to add hydrodemolition technology to their operation.

THE COST OF BEING TIRED

Tired workers can be a significant drain on jobsite productivity, dragging out project completion and racking up unnecessary labor costs. The National Safety Council estimates that reduced performance due to fatigue can cost businesses up to \$3,100 per employee annually.

Hand lances cause workers to fatigue quickly because they must resist back thrust as they operate the water jet. A



worker using a 2,000 bar (30,000 psi) hand lance must constantly fight up to 240 N (54 lbf) for normal operation. The physical exhaustion translates to less productivity and greater cost for the business owner.

Remote-controlled compact robotic hydrodemolition systems, however, combat worker fatigue. Ergonomic controls mounted at waist height allow operators to work for hours without tiring, improving productivity and allowing concrete repair contractors to scale their operations without spending more on labor resources.

PRODUCTIVITY FROM SAFETY

Because they combine high-powered water jets with the possibility of human error, hand lances are inherently danger-

ous. The pressurized water they emit poses a threat to anyone nearby, even if they are wearing protective gear. This can be especially risky on a busy jobsite where workers are often focused on their own tasks rather than being wary of the location of the hand lance.

Compact hydrodemolition systems allow operators to stand back from the area where concrete is being systematically removed, keeping them safe from flying debris and silica dust. And unlike hand lances or handheld pneumatic tools, these compact robots do not require workers' bodies to absorb any shock from the concrete removal process, preventing injuries to hands, wrists, shoulders and backs that are common with regular operation of handheld tools.

Since compact hydrodemolition robots can be mounted on standard scaffolding and work in tight spaces, including next to ledges, concrete repair contractors also save the time of setting up fall abatement systems. Operators can remain a safe



distance from fall risk areas, eliminating the need for time-consuming assembly and tear-down of these systems.

ELIMINATING THE POWER STRUGGLE

Though some hand lances can be operated at comparable pressure to compact hydrodemolition robots, they fall short in terms of water flow rate and reaction force, inhibiting their ability to remove broken or damaged concrete at rates fast enough to



handle tough projects.

Achieving a high water flow rate and reaction force is vital for water jetting tools to achieve the depths of removal necessary to complete most concrete structure restoration jobs. The lower flow rate of hand lances makes it difficult to remove

concrete beyond a depth of 13 mm. While hand lances can only safely offer 19-23 I/min, compact hydrodemolition robots can safely handle about 100 I/min. These machines can handle up to 1,000 N (225 lbf) of reaction force compared to hand lances.

What does this mean in terms of productivity? Imagine a large parking lot in need of spot work. Bringing a hand lance to the job may get it done, but much slower than robotic alternatives. Compact hydrodemolition robots can remove concrete at rates of 0.3 m³/h, compared to just 0.02 m³/h for a hand lance. That means a job completed over 10 times faster with a compact hydrodemolition robot rather than a hand lance.

ROBOTIC PRECISION

Compact Hydrodemolition systems can work faster, more efficiently and with more precision than a human behind a hand lance. This eliminates the unknowns in performance and provides enhanced and consistent productivity.

The robots can also be programmed to maintain a specific depth of removal, a feat impossible from handheld water jetting tools. Constant depth control eliminates the unknowns in performance, giving concrete repair contractors more control of their projects and assurance that they can meet promised deadlines.

REST FOR THE STRESSED

Now more than ever, construction businesses need to adopt high-tech equipment to retain their workforce, increase efficiency and improve jobsite safety. With no end in sight to the skilled labor shortage, contractors can – and must – adapt new methods into their business model to thrive in a changing economic environment.



reaches more heavy machinery and specialized equipment users than any other trade magazine in Canada.

The Media Kit is available on InfraStructures' website at www.infrastructures.com



Edmonton Names Preferred Proponent for Valley Line West LRT Construction

The City of Edmonton, in Alberta, has selected its preferred proponent to design, build and partially finance the 14-km Valley Line West LRT project.

The preferred proponent is Marigold Infrastructure Partners, consisting of team members Colas, Parsons, Standard General, Francl Architecture, Fast & Epp and Stantec.

Marigold Infrastructure Partners and the City will now enter into final discussions, with the contract expected to be finalized by the end of 2020. Construction is scheduled to begin in 2021 and is anticipated to take about 5 to 6 years to complete.

"We'd like to thank each of our proponent teams for participating in our procurement. We're confident our rigorous competitive process has culminated in the selection of a strong team to deliver the Valley Line West LRT at good value for Edmontonians," said Brad Smid, Valley Line director. The City launched its Valley Line West procurement process in January 2020 and released its proponent shortlist in March. When the COVID-19 pandemic hit, the team quickly

adapted and shifted the process online. Proponents first provided technical submissions, including draft designs and plans, to demonstrate their ability to meet the City's rigorous technical requirements. All teams passed this first hurdle and were invited to submit a financial proposal. The City evaluated these proposals to make sure they met its financial requirements, and the team with the lowest financial bid was selected as the preferred proponent.

"Marigold Infrastructure Partners is very



excited to work with the City of Edmonton on the Valley Line West LRT. As partners of MIP, Colas—whose subsidiary Standard General has delivered projects in Edmonton since 1969, and Parsons—building on their decades-long legacy of delivering P3 projects in Alberta, are proud to help the City build Edmonton and meet its long-term strategic goals for the city," said Xavier Fenaux, with Colas Canada.

As the City of Edmonton plans its recovery from the COVID-19 pandemic, the

_{Broom} Badger

Broom Badger Customers to Receive Continued Parts, Service, and Warranty Support from Elgin Sweeper

Elgin Sweeper recently announced it will continue to provide parts, service, and warranty support to current Broom Badger customers and those looking to purchase a Broom Badger through its extensive dealer network. This announcement follows the recent expiration of an 8-year strategic alliance with Challenger Manufacturing Ltd., to distribute the Broom Badger mechanical street sweeper in North America.

"Elgin Sweeper and Challenger have chosen not to renew a distribution agreement that began in 2012," said Mike Higgins, vice president and general manager, Elgin Sweeper. "Our companies have agreed to a transition period, and, in mid-2022, the Broom Badger production will move to Elgin Sweeper's world-class manufacturing plant in Elgin, Illinois. During this transition period, pricing for Broom Badger service parts will not be adversely affected and customers will continue to experience the same parts support and distribution they've come to expect from their Elgin dealer."

The Broom Badger has earned a successful reputation with municipal and contractor customers as an economical, compact, and easy-to-operate sweeper. Mr. Higgins acknowledged that Challenger was responsive to suggestions throughout the agreement and added that the sustained success of the Broom Badger was due in large part to the excellent service and support of Elgin Sweeper's dealers.

"When a customer buys a Broom Badger, they are getting everything that stands behind the Elgin brand, including the people who sold and supported it via responsive parts availability, expert training, and timely servicing – and that includes our dealers," said Mike Higgins.

"To ensure that the Broom Badger provides the best return on investment for contractor and municipal customers,

eleven-X Launches Wireless Parking Stall Occupancy Monitoring Sensor

Valley Line West LRT construction project will play a key role in contributing to that recovery in the city and region. An economic assessment of the project estimates that construction will generate \$760 million in wages in Alberta and another \$209 million throughout the country. It is expected to generate 8,800 jobs in the province and 2,700 across Canada.

The \$2.6-billion Valley Line West project has funding commitments from the Province of Alberta and Government of Canada. It is the second phase of the Valley Line, a 27-km low-floor urban style LRT line that will provide seamless connection between Mill Woods and Lewis Farms once complete. The first phase of the project, Valley Line Southeast, is currently under construction.

Source: City of Edmonton

Elgin will continue to offer and support our industry-leading standard warranty for this model," he added. "Our Broom Badger customers can rest assured knowing that Elgin and their dealer are with them for the life of their sweeper."

Elgin plans to begin manufacturing, marketing, and distributing an enhanced Broom Badger sweeper at its 18,500 m² facility in June of 2022.

"In addition to the features our customers expect from the Broom Badger – low-profile design, short wheelbase, unmatched operator visibility, control and comfort, side-dump hopper, and efficient sweeping system – the enhanced Broom Badger will also include Elgin-exclusive features, upgrades, quality enhancements, and customized options to meet the specific needs of our customers," said Mike Higgins.

Elgin Sweeper is a subsidiary of Federal Signal Corporation's Environmental Solutions Group.

Source: Elgin Sweeper Company

eleven-x, a Canadian supplier of wireless IoT solutions including smart parking technology, recently announced the launch of the eleven-x SPS-X, a wireless, real-time, smart parking sensor for stall-based occupancy monitoring. A game changer for municipalities, campuses and parking organizations of all types looking to



better understand parking usage and occupancy trends, eleven-x's patent-pending SPS-X will be essential to deriving greater value from existing and future parking assets.

The new LoRaWAN® based sensor, developed by eleven-x, provides an accurate, reliable and highly cost effective way to enable real-time guidance to available spaces, improve compliance through directed enforcement, as well as monitoring occupancy to determine what parking stalls are in use, how long vehicles are parking in them, and at what times over the course of a day, week or month. The data is captured and can then be used to develop a parking profile which helps organizations understand true occupancy patterns, identify parking trends and adjust their policies and strategies to optimize

revenues, improve operations, increase compliance, and eliminate friction in the overall parking experience.

"The use of real-time sensorbased stall occupancy monitoring is really the next evolution for cities and organizations as it can provide a clear understanding of parking space activity," said Domenic Sorbara, consul-





tant at Dsorbara Parking and Systems Consulting. "Accurate and consistent data that is inclusive of all types of parking stalls, including on-street and surface lots which have been traditionally difficult to monitor, will enable organizations to not only meet customer expectations, but exceed them in a cost-effective manner."

"Parking is a major area of focus for cities and organizations looking to optimize the experience of drivers in their community, which in turn drives real benefits in terms of economic development and reduced congestion. Upgrading existing infrastructure with real-time parking guidance, an ability to implement data-driven compliance and better plan for future parking requirements are all core to improving this experience. Real-time stall occupancy status updates, historical data collection and parking performance data and analytics will be key to understanding overall parking needs," said Dan Mathers, president and CEO of eleven-x. "Our primary focus with the new SPS-X sensor is to help municipalities and organizations generate actionable solutions. That could mean implementing or adjusting dynamic pricing programs, adding real-time parking guidance, adding or removing on-street parking spaces, reassessing parking-related capital projects or simply adjusting the time of day that parking is allowed in certain areas. All of these result in tangible benefits to managing the overall parking experience."

The SPS-X sensor uses a combination of magnetic, radar and Bluetooth technologies, in addition to cloud-based artificial intelligence (AI), creating a solution delivering industry-leading accuracy and reliability.

Source: eleven-x Inc.

Pickup Box Removal Considerations Steve Spata, Technical Assistance Director, NTEA Special Collaboration

Each year, pickup box removal occurs on tens of thousands of new pickup trucks when the OEM pickup box is removed and replaced with a vocational truck body. While this may seem straightforward - just swap one body for another - the pickup box plays an important role in the original vehicle's safety and emissions compliance that cannot be assumed as carryover to another body, regardless of size or shape.

Those who perform box removal on a new truck (prior to being licensed and titled in a given state or sold and delivered to a purchaser at the first retail level in a province or territory) are alterers and own responsibility to represent vehicle compliance with applicable Federal or Canadian Motor Vehicle Safety Standards (F/CMVSS) and relevant emissions requirements - by performing these operations as an OEM franchised dealer, truck equipment upfitter or vehicle modifier, etc. It is important to note, dealers are prohibited from selling vehicles that are not compliant with all applicable F/CMVSS and certified to that effect, which includes sales of trucks altered by pickup box removal, regardless of whether or not the dealer performs the work. Therefore, dealers need to be knowledgeable of which pickup models

are represented by the respective OEMs as being capable of box removal in order to properly guide customers. Working with knowledgeable upfitters is also critical to dealers in their efforts to ensure the sale of compliant vehicles.

Models offered in OEM box removal guidelines and body builder materials have undergone testing and analysis to support those representations. So, understanding what is behind this information is important with respect to OEM box removal offerings and why it is critical to stay within their limitations. In particular, pickup models with a gross vehicle weight rating (GVWR) of 4,535 kg or less must meet more F/CMVSS than their 4,535 kg-plus GVWR counterparts, so more limitations must be reviewed and addressed.

Weight is a major contributor to standards performance. A heavy body will likely have more difficulty meeting different aspects of weight limitations in OEM box removal requirements. For example, weight affects the way a vehicle manages energy in a crash, so results of dynamic tests that evaluate occupant protection in frontal, side and rollover events, as well as fuel system integrity, are affected. Brake system performance is also heavily influenced by weight and its distribution in the vehicle. Additionally, more weight negatively affects vehicle emissions, and typical box removal operations result in a vehicle that is heavier than the original pickup.

Accordingly, conformity to the following standards should be reviewed. These include, but are not limited to:

- F/CMVSS 105: Hydraulic and Electric Brakes;
- F/CMVSS 108: Lamps, Reflective Devices and Associated Equipment;
- F/CMVSS 111: Rearview Mirrors and Rear Visibility Systems;
- F/CMVSS 126: Electronic Stability Control Systems;
- F/CMVSS 204: Steering Control Rearward Displacement;

- F/CMVSS 208: Occupant Crash Protection (in Frontal Impacts);
- F/CMVSS 212: Windshield Mounting;
- F/CMVSS 214: Side Impact Protection;
- FMVSS 216a: Roof Crush Resistance;
- F/CMVSS 219: Windshield Zone Intrusion (upgraded);
- F/CMVSS 301: Fuel System Integrity.

There are numerous upfront considerations to make during the purchase process before proceeding with box removal of a particular make/model/model year pickup.

First, check to see if the vehicle make/ model is part of the OEM pickup box removal offering for that model year. If not, there is no reason to continue with that specific model, and attention can shift to evaluating a model offered under pickup box removal guidelines.

After narrowing your scope to models included in OEM offerings, the next step would be to review weight and other limitations and guidance for that specific model, and compare to the desired upfit vehicle. In particular, maximum unloaded vehicle weight (max UVW) limits are a good initial evaluation. For example, if the OEM max UVW for the model you are considering is 3,400 kg and you determine from a simple calculation that the unloaded weight of the vehicle with the new body and equipment would be 3,175 kg, you can continue evaluating suitability of that model for the customer. However, note there may be a different limiting unloaded vehicle weight for emissions compliance, so you will want to review those conditions before proceeding.

Other straightforward limits can include maximum weights and center of gravity location of the proposed body to determine if it is within applicable OEM limits. A weight analysis should be performed to evaluate vertical and lateral center of gravity position limitations for the overall vehicle, as well as distribution of weight front-to-rear and side-to-side. Frontal area limits, including added body and equipment, must

also be evaluated. Increasing frontal area creates a negative effect on emissions, and most box removals increase frontal area where the body extends outward beyond the OEM cab as compared to the original pickup. The new configuration must be within the maximum surface allowed.

It is helpful to think of these OEM limitations as a go/no-go step in the process of evaluating the upfit. Or, more proactively, they could be viewed as a means of narrowing body selection to those that check easier boxes for a given set of pickup chassis limitations.

Unfortunately, the considerations do not end here. There are vehicle and build limitations that can be specific to a given chassis. Common issues encountered with box removal include:

- Adapting rear lighting of a specific body, which may involve reprogramming a lighting module on the chassis in order to eliminate a "fast flash" condition;
- Relocating or replacing the OEM rear vision camera;
- Procuring the OEM fuel fill kit designed for that model, which also includes components to properly route the filler neck to the designated fuel door location in the body.

Additionally, there may be specific



methods of attaching the body to the pickup chassis. These issues relate directly to compliance with certain F/CMVSS and emissions regulations, so thinking through these build-related items is another aspect of upfront box removal considerations.

While there are several layers to evaluate in determining if an off-the-lot pickup model can be a suitable chassis for a particular vocational body and upfit, some body manufacturers offer tools that can help streamline this process. Starting with the body and upfit, they have performed engineering to determine which pickup brands/models are suitable from OEM box removal offerings and guidance.

This approach helps prevent the wrong base vehicle from being selected, or the vocational upfit from being compromised due to limitations of the original pickup.

Established in 1964, NTEA – The Association for the Work Truck Industry represents companies that manufacture, distribute, install, sell and repair commercial trucks, truck bodies, truck equipment, trailers and accessories. Buyers of work trucks and the major commercial truck chassis manufacturers also belong to the Association. NTEA provides in-depth technical information, education, and member programs and services, and produces The Work Truck Show®.

JCB Customer's Joy as Vintage Machine Restored to Former Glory

One of JCB's longest-standing customers has unwrapped a unique present – a vintage backhoe loader restored to its former glory to mark the equipment manufacturer's 75th anniversary.

Lincolnshire-based Eric Carnaby & Son has been a customer since 1959 and over the following 6 decades has bought more than 150 JCB machines. Now JCB has said thank you to the firm for its loyalty by restoring the Carnaby family's cherished 1964 JCB 1 backhoe.

The project was kept a closely guarded secret until George Bamford – grandson of JCB Founder Joseph Cyril Bamford CBE – sprung the restoration surprise during a visit to the company's base in Immingham, near Grimsby, to collect the machine. Now, the backhoe has been handed back to the company after a team at JCB's headquarters spent hundreds of hours lovingly

restoring it.

"My family and I are over the moon with the restoration. Our JCB 1 is precious to us and we've been meaning to restore it for some time, but you know how it is – a

business to run, and all that!," said Roland Carnaby Junior, Eric Carnaby & Son director.

Founded by Eric Carnaby in 1946, the plant hire and road haulage firm is now run by father-and-son team Roland Carnaby Senior and Roland Carnaby Junior. The company's first JCB purchase was a JCB 4

From Lto r: George Bamford Lord Bamford Roland Carnaby and

From I. to r.: George Bamford, Lord Bamford, Roland Carnaby and Roland Carnaby Junior pictured with the newly-restored machine.

backhoe in 1959 and it formed the backbone of the fleet for many years to come – with up to 12 in operation during the 1970s and 1980s. The company's most recent purchase was the latest X Series excavator. The 2 family businesses have been strongly intertwined through the years.

Source: JCB North America

KOBELCO Introduces SK140SRLC-7 SR Series Excavator

KOBELCO Construction Machinery USA recently introduced the SK140SRLC-7 excavator model in North America. The next-generation SK140SRLC-7 sets the standard for mid-sized machines and offers full-size benefits with short rear swing capabilities and exceptional features.

Performance advancements allow the SK140SRLC-7 to deliver greater efficiency and productivity as well as increased power and speed than its predecessor. The machine boasts a dynamic digging force of 110,3 kN (24,800 lbf) to achieve leading-class work volume. A compact design and long digging reach capabilities provide a broad working range and easy maneuverability, while a top-of-class digging depth of 5.96 m and impressive swing speed of 11 rpm shorten cycle times by ~10%.

Equipped with a new, more powerful, Tier 4 final engine, the SK140SRLC-7 maintains superior productivity and efficiency, even while working at high power levels or lifting heavy loads. The SK140SRLC-7's strong drawbar pulling force produces powerful travel capabilities, enabling it to tackle steep and rough terrain with ease. And independent travel, an exclusive KOBELCO feature, allows the SK140SRLC-7 to move, lift

and swing simultaneously without experiencing loss of power.

Enhanced multi-function capabilities include an attachment selection system with adjustable flow-rate presets for the bucket, breaker, nibbler and thumb, allowing the operator to change between tools quickly and easily. The SK140SRLC-7 is also avail-



able with an optional offset boom which increases stability and maneuverability while working in confined areas, such as next to walls or close to traffic.

Source: KOBELCO Construction Machinery USA

Steelwrist Expands Product Offering for Mini-Excavators

The demand for more versatile solutions for the very small excavators continues to grow. Solutions in the less than 2 t range do not only need to be versatile but also robust and cost effective and as a result Steelwrist is now expanding the product portfolio with fully-casted TCX S30-180 and S30-180 products. Both types can be delivered with manual locking or hydraulic locking depending on customer needs.

Steelwrist introduced the first steel-casted quick coupler in 2012 and by now the company

has thousands of casted products in the field. The advantages with casting is by now well understood where the combination of strength vs weight is superior compared to welded solutions. Additionally both the TCX and the S30 come with a Front Pin Safety Hook that complies with the new regulations for quick coupler safety.

With the tilt coupler, you get a safe quick coupler solution and a tilt function that makes your excavator far more versatile. Installation is easy and the compact TCX has a low weight.

It is suitable for excavators from 0 to 2 t and available as direct-mounted with S30 coupler, both manual and hydraulic. The TCX replaces the TMX tilt coupler in the company's product offering.

The fact that the S30 quick coupler and the TCX tilt coupler are free from welding, has large pin contact surfaces and optimized material thickness, creates an extremely robust design which will ensure a longer life time.

Source: Steelwrist AB

Stainless Steel Hopper for UTVs



SnowEx® offers a new 0.27 m³ stainless steel spreader developed specifically to fit UTVs and compact trucks. The advanced corkscrew, or "helix" design of the HELIXX spreader helps prevent clogs and outperform the material flow of traditional augers.

Its compact size allows it to address sidewalks, while its ability to deliver a spreading width of 9.0 m makes it effective on larger jobs as well.

Source: SnowEx Snow and Ice Control Equipment

Prebooking of Volvo CE's Electric Machines Widened to Include More Countries

Since mid-October, customers in Sweden, Finland, Denmark, Belgium, Luxemburg, Austria, and Switzerland have joined other European countries and North America in being able to reserve a place in the production queue for the new ECR25 Electric compact excavator and L25 Electric compact wheel loader. With zero exhaust emissions and low noise levels and vibrations, these machines are the perfect choice for inner-city jobsites or any sensitive work environment. They provide lower maintenance levels, improved operator comfort and the ability to meet stringent environmental and noise regulations.

The first deliveries of the electric compact machines to customers will commence at the beginning of 2021.





The online portal has been conceived to expand the opportunities for customers to buy one of these machines and to broaden the way these machines are used by customers. It is being managed in collaboration with local dealers.

As electric machines will be a new experience for many customers Volvo will provide 100% peace of mind by providing

2 years standard warranty on the complete machine, including Services and the use of genuine Volvo parts provided by the local Volvo dealer as standard. In addition, a total of 5 years coverage on electronics and batteries is also included as standard if the customer signs up for a Service Agreement with a Volvo CE dealer.

Source: Volvo Construction Equipment

New Blade Adds 4-Season Versatility to Toro® Dingo®

Toro announces the introduction and availability of all-new snow removal attachments for the Toro® Dingo® compact utility loader line – the 4-foot and 5-foot BOSS® snowplow attachments. With a simple changeout of attachments, Dingo units can effectively and efficiently handle even the most challenging snow and ice removal tasks.

BOSS snowplows are available in 2 sizes – 121 cm and 152 cm – and feature polyethylene blades, striking the ideal balance between a lightweight design and impressive durability. Contractors will also appreciate the reversible cutting edge, which ultimately adds to the longevity of the attachment.

Thanks to the full-blade trip design, which minimizes severe impacts to the attachment, the compact utility loader, and most importantly, the operator, when striking obstacles. Additionally, the hydraulic 30° adjustment in either direction eliminates the need for operators to make manual adjustments in less-than-ideal winter conditions.

"This new attachment offering simply provides more options for Dingo users to get the very most out of their compact utility loader," said Kyle Cartwright, marketing manager at Toro.

"The possibilities are truly endless when it comes to thinking up new attachments for the Dingo line, and we believe that this new offering will be a game changer for a key segment of our Dingo customer base."

Additional options that are available for the BOSS plow include a 15 cm blade extension kit, a snow deflector kit, a plow shoe kit, box wing extension and urethane edge kit. Plow attachments are compatible with Dingo 320-D, 323, TX 427, TX 525 and TX 1000 models.



The BOSS plow attachments are available now from Toro's trusted network of dealers, and are currently available for shipping.

Source: The Toro Company

The Game Changer in Crawler Cranes; Ideal in Tight Spots

The PCC 57.002 crawler crane from PALFINGER works well in limited space, can shift (or "walk") on its outriggers and can be operated electrically. It is perfect for indoor jobs, such as - in this case - the removal of escalators.

Maneuvering the PALFINGER crawler crane PCC 57.002 through the main entrance of an Austrian furniture store was easy work thanks to its compact dimensions - just 1.9 m wide by 2.1 m high - and precision steering with the PALcom P7 radio remote control. The machine easily navigated through the 2.2 m-high entry area. Once inside, the crane unfolded to its full size - just like a transformer. Its mission: the removal of 2 escalators.

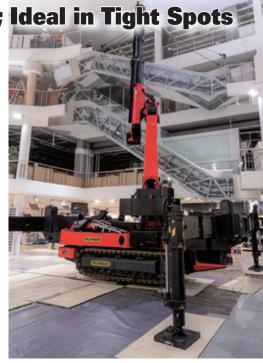
The PCC 57.002 is ideal for use in very restricted spaces. Its crane unit can be operated and controlled independently of its crawler chassis. The crawler crane can also "shift" on its own outriggers, enabling it to navigate low passageways, and always be optimally balanced and stabilized.

All these features meant that the PCC 57.002 was the perfect choice for this project. Without this crane, the escalators would have been cut up a noisy, dusty and time-consuming process that would have restricted the store's opening hours.

"Especially in building construction, you are constantly faced with new challenges where you reach your limits and have to develop whole new concepts and solutions to achieve your objectives," said STRABAG construction technician Michael Eisshofer.

Once inside the store, the unit was switched from diesel to electric mode and performed immediately. Thanks to the crane's outreaches of 12 and 7 m, both escalators, each weighing 5 t, were effortlessly removed.

"We opted for the PALFINGER crawler crane because the building could be accessed only through a very, very narrow



doorway, so it was the only solution," said Mr. Eisshofer.

Source: Palfinger AG

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1988 JETAIR II, Cummins



1996 SMI 8400, GM / engine, very clean GM 700 hp, 4,000 t/h capac-ity, very clean\$105,000



1999 VOHL DV-4000 JD 275 hp engine, telescopic chute, ice screw, good condi-



1979 SMI 5250, GM/GM 6-71, SMI 7200, rebuilt 1997. new paint, ex-municipal\$39,000\$48,500



GM V-12 engine



1993 SMI 7250A, GM / GM 410 hp, very clean



1990 SMI 5250A, two GM diesels, 2,000 t/h capacity, very\$105,000 clean, 3,300 h\$75,000

DiCAN Launches Plow Pilot on the Geotab Marketplace

DiCAN Inc., a southern Ontario-based distributor/installer of commercial fleet safety equipment, recently announced the availability of its patented Plow Pilot™ on the Geotab Marketplace, a go-to source for top organizations seeking to better manage their fleets. Plow Pilot provides government and private sector customers with access to an innovative and reliable solution for snowplow blade position reporting.

Integrating seamlessly with Geotab's telematics platform and public works offering, this solution uses air-over-hydraulic trigger signals to sense, capture and transmit precise snowplow blade positioning, enabling customers to gain visibility into real time plow blade action directly from the operators control levels. Unlike hydraulic pressure switches or proximity sensors, Plow Pilot is an in-cab solution that has a lower risk of failure or damage caused by exposure to adverse weather, helping to reduce vehicle downtime and minimize maintenance costs. Plow Pilot offers users a range of options suitable for all types of winter control vehicles and assets, including both air-over-hydraulic and joystick electric vehicles as well as front, wing, and tow plows, tow trailers, underbody scrapers, rotary brooms, and windrow blades.

"Plow Pilot was conceived and developed more than 8 years ago to address the industry's need for a more accurate and reliable blade position reporting system," said Michael Shirchenko, partner, head of product engineering & development at DiCAN. "Geotab is the number one commercial telematics vendor in the world and we are honored to join its world-class ecosystem to offer Plow Pilot on the Geotab Marketplace."

Geotab offers an extensive ecosystem of valuable, business-focused applications and add-ons which helps provide businesses with the tools needed to better manage their fleets. With the addition of DiCAN's Plow Pilot on the Geotab Marketplace, Geotab customers worldwide will have access to a solution that provides access to reliable and accurate snowplow blade telematics data.

"We are pleased to welcome DiCAN to the Geotab Marketplace. With the winter months quickly approaching, it is impor-



tant that governments and private sector winter maintenance fleets are equipped with tools, like Pilot Plow, to help optimize their current and future winter operations," said Louis De Jong, executive vice president, Geotab. "To help ensure government

fleets are supported all year long, Geotab is dedicated to providing government fleet managers with superior integrations and improved visibility of their seasonal and ongoing maintenance vehicles."

Source: DiCAN Inc.

A New Player on the Canadian Market

A series of commercial mid-size loaders are now offered by ATACFAB, a division of the Canadian company ATAC-V Inc. Interestingly, all models come with the clear advantage of having a telescopic boom. The loaders come in 2 versions with lifting capacities of 1,450 kg and 2,266 kg.

They are powered by a reliable Cummins turbo



diesel engine developing 50 hp and 74 hp respectively, a 2-speed hydrostatic transmission and come with a comprehensive cold-weather kit. Conventional mechanical joysticks and a minimum of electronic increase the reliability of the unit. To insure a long life and high reliability, all liquids and lubricants used on all machines are made by Petro-Canada distributed by Petro Sherbrooke.

The loaders can be purchased with a variety of custom attachments (side shift forks, quick attach, 3-point attachment, grapple, snow blower, bale grabber, etc.) thus becoming a multitask tool carrier at an very attractive starting price.

Standard equipment includes a heavy-duty bucket and a cab with 360° visibility, ROPS and FOPS protection systems, a powerful heater, adjustable steering wheel and a backup camera with a large color screen.

The long list of options includes – but it is not limited to – extra joystick, A/C system, front and rear hydraulic lines, quick hitch, 4 different style of tires, and winter chains.

The machines are assembled in Canada and are made following a strict quality control system for a long reliable service. They are covered by a 1-year, 1,200 hours limited warranty.

Source: ATAC-V Inc.

Three Decades of Environmental Technology in the BAUER Group

Over the past 30 years, what is now the Bauer Umwelt business division of BAUER Resources GmbH has developed from a 2-person operation into a leading company for environmental technology with 177 employees. This successful trajectory began by tackling a challenge in specialist foundation engineering: how to handle contaminated areas on construction sites.

The idea to also provide cleaning services for the ground, soil vapor and groundwater in contaminated areas as part of specialist foundation engineering projects gave rise to an interplay between specialist foundation engineering and environmental services. The company BAUER und MOURIK Umwelttechnik GmbH und Co. KG was founded in 1990 and later renamed BAUER Umwelt GmbH. Finally, the merger with BAUER Resources GmbH took place in 2016. Today, the environmental division Bauer Umwelt, under the management of Samer Hijazi, is one of the leading



remediators of contaminated sites both domestically and internationally. Its services include remediation of contaminated sites, disposal of contaminated waste from construction and industry, and purification of groundwater and site water.

One of the most successful projects in ground water treatment was the remediation of a gas works site in southern Germany. Using a biological cleaning method known as "funnel and gate technology," the plant cleaned 90 l/s of contaminated

groundwater in a pipe system extending over several kilometers. In the area of brownfield remediation, BAUER Resources GmbH and BAUER Spezialtiefbau GmbH, together with a partner, are currently carrying out extensive soil remediation works at the Schwarze Pumpe industrial park in eastern Germany on behalf of LMBV. More than 286,000 t of contaminated soil will be moved and cleaned there by 2022.

Source: BAUER Resources GmbH



JLG® Expands Range of Hi-Capacity HC3 Boom Lifts

JLG Industries, Inc. recently announced its expanded range of Hi-Capacity HC3 boom lifts. Available now are the 400S, 460SJ, 600S, 660SJ and 860SJ HC3 models, while the 450AJ, 600AJ, 800AJ and 800S HC3 booms are set to roll off production lines in the coming months.

The JLG® Hi-Capacity HC3 boom lifts offer an expanded work envelope and 3 capacity zones for greater reach than competitive models offering 1 or 2 capacity zones. In fact, the JLG Hi-Capacity HC3 models are rated for 3 occupants with tools in all 3 zones.

"Customer input, coupled with the increasing popularity of higher-capacity boom lifts, drove the expansion of our HC3 product offering, which now includes 24.3 m platform height models," said Nate Hoover, director of marketing and product management for boom lifts, JLG. "All Hi-Capacity HC3 model boom lifts have been engineered to provide increased capabilities and boost productivity on the jobsite."

The 400 Series Hi-Capacity HC3 boom lifts include the 12.2 m platform 400S HC3 model and the 14 m platform 460SJ HC3 model, while the 600 Series Hi-Capacity HC3 models consist of the 600AJ HC3 and 600S HC3, which each deliver a 18.3 m platform height, and the 660SJ, which boasts a 20.1 m platform height. Meanwhile, the 800 Series Hi-Capacity HC3 booms include the 24.3 m platform height 800AJ HC3 and 800S HC3, and the 26.2 m 860SJ HC3.

All models offer 340 kg and 454 kg restricted capacity zones. The 400 Series, 600 Series and 800AJ models also offer a 300 kg unrestricted capacity zone, while the 800S and 860SJ have a 227 kg unrestricted capacity zone.

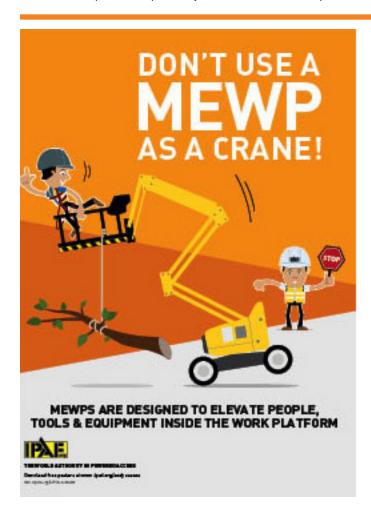
An innovative load sensing system from JLG limits operation of a machine when the platform is overloaded, automatically keeping operation within the allowable work envelope. The zero-calibration system

on all HC3 models eliminates the need to

on all HC3 models eliminates the need to use external weights to calibrate the lift. This saves time and effort, while increasing productivity.

While the new Hi-Capacity HC3 boom lifts are heavier than their standard model counterparts, they retain the same footprint for ease of transport and use in comparable work environments.

Source: JLG Industries, Inc.



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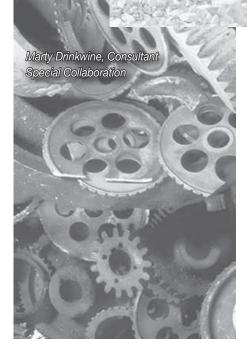
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Coolers Protecting Components



Coolers have always been part of protecting critical components. By redistributing the heat of friction, they

maintain the integrity of crucial lubricants and bearings.

With ever increasing demands to improve performance and emissions of equipment, coolers now form an ever more integral part of the powertrain package. Charge air, fuel, brake fluids all have cooling devices in addition to the traditional hydrau-

lic ones common to most machinery.

However, with more sleek and compact designs how can coolers fit the package and perform their critical function without being a maintenance migraine? The tube-and-shell (T&S) style is finding more use in machine design, particularly on auxiliary systems. The T&S cooler can be fitted close to heat loads and act like ac-

cumulators to collect heat and stream it into the primary cooling circuit. This permits thermal loads created by brake friction or other ancillaries to be contained at source adding to the efficiency of the system and extending the life of components.

T&S design in heat exchangers is not a new innovation, an

early example could be that of a steam locomotive boiler. Essentially, they consist of a jacket of one fluid encompassing tubes



full of a second fluid.

Just like your arteries, these fluid channels can become restricted or clogged from contamination or fluid deterioration. Such restrictions will eventually negate the

ability of the cooler to do its job adequately and efficiently. A typical design, and a poor one, provides for no servicing of the cooler when such blockages become critical. One



company has applied its serviceable cooler technology to this question and a bit more.

MESABI® by L&M Radiator™ has developed a rebuildable tube and shell cooler with the ability to forewarn fleet managers of potential failures. This permits planning for maintenance, avoiding unexpected downtime and sustaining production and profitability. The System Protector™ incorporates a series of replaceable tubes and seals inside a repairable shell structure. Tubes can be easily removed, cleaned or replaced as can the seals which also absorb shock and vibration further extending the cooler lifespan.

Unlike the standard MESABI® RTTS® which incorporates all of these features, System Protector™ adds an incredible extra. Incorporated into each System Protector™ structure is a series of additional galleries between the two fluids.



reaches more heavy machinery and specialized equipment users in print and online than any other trade magazine in Canada.

The Media Kit is available on InfraStructures' website at www.infrastructures.com



Visual, audio or electronic sensors can be installed in gauge ports of these galleries to give warning of imminent failure <u>before</u> costly components are contaminated or irrevocably damaged.

When coolants and oils cross contaminate all sorts of damage, short <u>and</u> longterm will occur. Milky oil in an expensive pump can cascade both the problem and the costs. Would you prefer to spend thousands on rebuilds and replacement parts? Surely a simple warning, and a controlled maintenance operation is more affordable than a catastrophic failure.

Protect <u>all</u> the things that you want protected, particularly your production equipment.



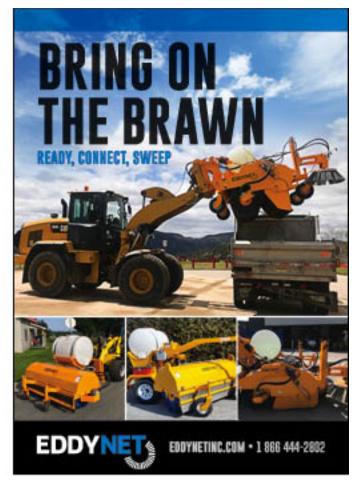


On the dawn of its 25th anniversary, EDDYNET has moved into a brand new production plant in Danville, Quebec. The 2,300 m² factory will accommodate state-of-the-art production equipment and flexible assembly cells.

Since 1996, EDDYNET is a specialist in the design and manufacturing of hydraulic and mechanical sweepers that can be installed on various equipment to be used by contractors and municipalities in street and parking lot maintenance. The company has always focused on improving the versatility and performance, as well as insuring longevity and ease of maintenance of its product range.

Source: EDDYNET Inc.





ALS - Adaptive Load Sensing, Walvoil and Dieci Win the EIMA Technical Innovation Award

There is no doubt that "team work" increases the chances of success in achieving a shared goal, improving, in any case, the result obtained. This is the experience lived by Walvoil and Dieci in the "Technical Innovation Contest" of EIMA Digital Preview 2020 – they won both the prestigious "Technical Innovation 2020-21" Award, dedicated to machines and devices with features of absolute innovation, and the "Blu Award 2020-21", attributed to the solutions that outstand for environmental aspects.

The ALS - Adaptive Load Sensing system minimizes the dispersion of energy in the hydraulic system of telehandlers, considerably improving the efficiency of the vehicle and consequently obtaining a reduction in wear and consumption.

In order to ensure the simultaneous control of movements, the hydraulic pump generates a pressure higher than what is really necessary, a predetermined value called "stand-by pressure differential" – considered acceptable until now – which implies a considerable loss of energy, limiting the overall performance of the vehicle



and unnecessarily increasing wear and consumption, to the detriment of efficiency and environmental impact.

The ALS modulates the "stand-by pressure" value according to the real needs of the machine, automatically varying it only when and how required.

In partnership with Dieci, the ALS system has been successfully tested on an AGRIPLUS telehandler, one of the top machines in the Dieci range for Agriculture.

ALS is made of a directional control valve, an electronic joystick, and an electronic control unit, with customizable modular software developed by Walvoil. The control unit collects information from the operations on the controls and from the machine sensors, and acts on the device, adapting the hydraulic pressure differential to the maximum efficiency value required by the vehicle.

During tests, the Walvoil-Dieci team found on the AGRIPLUS a drop in energy dispersion values equal to 28% during boom operations, and up to 45% during traveling phases, with a significant improvement in the overall machine performance at various speeds.

Source: Walvoil

Peterbilt Model 579EV Now Available for Customer Orders

Peterbilt recently announced that the Model 579EV is now available for customer orders. Customers can spec a 579EV using Peterbilt's SmartSpec® sales tool at any Peterbilt dealer location across North America, with production expected to start by Q2 2021.

Designed for optimal weight distribution and performance, the fully integrated, all-electric powertrain in the Model 579EV uses thermally-controlled Lithium Iron Phosphate battery packs to provide a range up to 240 km. When used in conjunction with a recommended DC fast-charger, the state-of-the-art, high-energy density battery packs recharge in 3-4 hours, making the 579EV ideal for regional haul, drayage, pickup and delivery and last mile operations.

The Model 579EV is available in a tandem drive configuration with Meritor 14Xe™ e-axle motors providing power through the drive inverters. Regenerative braking captures energy from stop-and-go operations to help recharge the batteries and maximize the vehicle's range.



The Model 579EV uses an enhanced dash cluster to communicate clearly all the information required for the driver to operate the electric vehicle.

"The Model 579EV features all of the aerodynamic benefits, driver comforts, superior visibility, spacious interior and safety measures the Model 579 is known

for and combines them with the advanced technology of an electric powertrain, providing customers a premium, zero-emission solution for their business," said Jason Skoog, Peterbilt general manager and PACCAR vice president.

Source: Peterbilt Motors Company

ABB and Lion Electric Partner to Bolster e-Mobility

ABB has partnered with Lion Electric, an innovative manufacturer of zero-emission vehicles, to strengthen the transition to a zero-emissions future in North America. ABB will offer its complete charging equipment product line to Lion Electric, to be sold under Lion Electric's new Lion Energy infrastructure specialty division, making the Saint-Jérôme, Quebec-based company a service partner for ABB.

Lion Energy, the heavy-duty vehicle manufacturer's end-to-end infrastructure solution is designed to streamline the process of EV charging station installation. Lion Energy packages charging infrastructure design and review, project management, utility coordination and customized consultation to its customers, easing the complex process of charging station installation. Lion Energy ensures infrastructure installation is accomplished in tandem with the vehicle purchasing process, giving customers the capacity to meet the charging needs of current fleets and the ability to scale in the future.

Known for the most advanced EV charging solutions available, ABB's portfolio and services span the entire kW chain from compact, high-quality AC wallboxes to reliable DC fast charging stations, Terra 54 (Fast Chargers) and Heavy Vehicle Chargers. ABB will supply the full range of solutions to support the Lion Electric fleet which ranges from small buses to 300kw battery trucks.

"Reinforcing our commitment to e-mobility, we are pleased to partner with Lion Electric as we share the same pioneering vision for an electrified future," said Bob Stojanovic, ABB's head of EV Charging Infrastructure for North America. "Collaborating with innovative vehicle makers to ensure the vehicles and the charging work seamlessly is a crucial part of ABB's mission to write the future of safe, smart and sustainable electrification for everything from industry and buildings to infrastructure and transportation. Our vision is to achieve a zero-emission reality not only for the future but also today".

"Over the past few years, Lion Electric has delivered hundreds of electric buses and trucks, and it has been a goal of ours to provide a complete turnkey charging infrastructure solution for our customers," said Marc-André
Pagé, vice president
of Commercial
Operations at Lion
Electric. "With our
deep experience in
EV charging, we are
proud to partner
with a segment
leader like ABB
to provide premium EVSEs to our
customers. We feel
the Lion and ABB
partnership was a

natural fit as both companies are pioneers in electrification and share a common goal of decarbonizing transit. We are looking forward to deploying ABB equipment and to offer a state-of-the-art charging infrastructure solution to our customers."

Lion Electric will be trained to undertake the servicing of ABB's smart, reliable and effective EV charging solutions. ABB's futureproof charging hardware and software are designed to meet the needs of e-buses and trucks. ABB will also support the end customers' installation of the charging equipment, making the implementation of electrification easier for school bus and transit fleets.

Over the last decade, Lion Electric has established itself as the clear leader in the all-electric school bus industry, having delivered over 300 all-electric school buses in the U.S. and Canada, more than all other players combined, in addition to benefitting from the largest order book in the industry. Lion also offers a portfolio of all-electric class 5 to class 8 trucks, available in various configurations. Lion's proven track record and long-term operational history in the manufacturing of all-electric heavy-duty commercial vehicles serve as a significant competitive advantage in the all-electric truck market.

North America faces air quality challenges throughout the region. In 2018, Canada's transport sector accounted for more than 35% of the country's greenhouse gas emissions, according to the Government of Canada. The majority of these transport emissions were related to road transportation, which includes personal transportation, such as light-duty vehicles and trucks,



and heavy-duty vehicles. The American Lung Association's "State of the Air" 2020 report found that close to 5 in 10 people – 150 million Americans – live in counties affected by unhealthy ozone and/or particle pollution, the 2 most widespread air pollutants in the U.S.

The widespread transition to zeroemission transportation technologies could produce emission reductions in 2050 that could add up to \$72 billion in avoided health harms, saving approximately 6,300 lives and avoiding more than 93,000 asthma attacks and 416,000 lost work days annually due to significant reductions in transportation-related pollution.

Providing a reliable charging infrastructure that scales with the needs of large battery vehicles like buses and trucks plays a crucial role in paving the way for wider adoption of e-mobility. This partnership will help grow the EV charging infrastructure in North America by offering easier integration of the charging infrastructure needed to make transit, school bus and fleet electrification a reality. It will also accelerate the purchase of Lion Electric's EVs and related services by eliminating the challenges related to EV adoption.

ABB has unrivalled expertise in developing sustainable transport solutions. Since entering the EV-charging market a decade ago, ABB has sold more than 14,000 direct current fast chargers across more than 80 countries. ABB also received the Global E-mobility Leader 2019 award for its role in supporting the international adoption of sustainable transport solutions.

Source: ABB Inc.

Caterpillar Celebrates Production of 175,000 Medium High Drive Dozers

In 1985, Caterpillar expanded its revolutionary elevated sprocket undercarriage concept to its medium track-type tractor (MTTT) line with the launch of the H-Series models. The high drive design conformed to the ground better, improving durability, serviceability and performance compared to low-drive and oval track designs. In addition to bringing many of the same large dozer advantages to the medium line, the elevated drive sprocket allowed movement of the front and rear track idlers. This helped to fine-tune machine balance and ground pressure for specific applications more easily than oval track machines. For the first time, variable pitch angle tilt (VPAT) blades were made available to high drive dozers with the D4H and D5H models for finishing jobs faster by grading at higher speeds.

Thirty-five years later, Caterpillar celebrated the unrivaled success of the elevated sprocket design in the medium dozer class by producing 3 commemorative 175,000 units in May 2020.

"One of the original taglines to promote the early high drive tractors was 'Beyond Known Capabilities,' because these units set a new standard for efficiency, productivity and ease of operation," said Wes Holm, chief engineer, Caterpillar medium tractor products. "With our next generation medium dozer line, which includes the new D5, D6 and D7 models, we continue to push these envelopes through adaptation of technology to drive productivity and efficiency to another level."

With travel and gathering restrictions resulting from the ongoing coronavirus pandemic, Caterpillar cancelled in-person celebrations to mark the historic 175,000-unit milestone for its medium dozers. However, 3 customers took possession of the commemorative units, which feature special decals on the fenders denoting the 175,000-unit milestone. The 175,000 image appears inside the cab as well, where it is



embroidered on the headrest and printed on a plaque denoting each unit's limitededition status.

Built in East Peoria, Illinois, the first 2 commemorative units were Cat D6 XE electric drive dozers, featuring a sleek dark gray and black paint scheme. The 3rd unit, a D6 dozer with 4-speed, fully automatic transmission, is finished in traditional Cat yellow with special black tracks and blade.

Symbolic of the medium dozer line's long history of innovation, the Cat D6 XE is the world's first electric drive dozer to offer the elevated sprocket design. It boasts a strong, yet light, structure, providing optimum machine balance for grading without the need for a rear implement or counterweight. Integrated Cat GRADE technologies, such as standard Slope Assist and available Cat GRADE with 3D, help to increase overall jobsite productivity by up to 50%. Offering up to 35% improved fuel efficiency, the dozer features a durable design with updated components, long service intervals, and extended scheduled maintenance to reduce service and maintenance costs by up to 12%.

Long-time Caterpillar customer and multiunit Cat dozer owner, Goodfellow Bros., a 4th-generation, family-owned contractor based in Wenatchee, Washington, received one of the D6 XE units. Before being put in the dirt in Hawaii, Goodfellow plans to feature the new commemorative dozer in the company's 100th anniversary celebra-

tion, planned for 2021.

Holt Cat of San Antonio, Texas, took possession of the second commemorative D6 XE dozer. The Caterpillar-Holt longstanding relationship dates to the company's origins when Benjamin Holt invented the Caterpillar track-type tractor in 1904. The D6 XE dozer design embodies 116 years of continued innovation since Holt's original Caterpillar. The dealership plans to use it to help promote Cat Next Generation Dozers at future customer events.

The commemorative D6 dozer was shipped to Canadian dealer, Finning Cat, where it was sold to Midwest Pipelines Inc., based in Spruce Grove, Alberta. The legacy of Cat MTTT ownership can be traced back 39 years to Midwest's sister company, Pidherney's Inc. of Alberta, when founder Merv Pidherney purchased his first dozer, a Cat D6D. Today's combined dozer fleet is nearly 100 strong, and the companies remain family owned and operated, specializing in oilfield, civil and hauling projects.

Cat D6 and D6 XE dozers are manufactured exclusively in East Peoria, Illinois, and Grenoble, France, along with other models in the medium dozer line. In addition, Caterpillar manufactures Cat medium dozers in Piracicaba, Brazil, and Rayong, Thailand, to meet global market needs.

Source: Caterpillar



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The Media Kit is available on InfraStructures' website at www.infrastructures.com



Kenworth Introduces New Options for T270 and T370 Medium Duty Conventional Trucks

Kenworth offers new options for Kenworth T270 and T370 medium duty conventional trucks.

The roll-back flatbed application is now an approved body type for use with the proven Kenworth AG210L single-axle rear suspension on the T270 and T370. The Kenworth AG210L is a 9,525 kg rated highway, 2-bag, rear air suspension that features a proven trailing arm design and provides a smooth ride.

The T270 and T370 also add CX chrome round convex mirrors as an option. The driver and passenger side hood-mounted convex mirrors provide an enhanced side view and help to eliminate blind corners.

The Kenworth T270 and T370 also offer an updated version of the optional, Bendix® side object detection system. Changes include increased field of view and enhanced detection. The detection range is now up to 6 m forward and 6 m backward from the sensor's location. The system also adds



stationary object filtering when at speeds above 30 km/h.

According to Bendix, its driver assistance technologies are designed to complement safe drivers, safe driving practices, and proactive driver training programs, not replace them. Responsibility for the safe operation of the vehicle remains with the driver at all times.

The T270, a true Class 6 vehicle rated at 11,800 kg GVW, is available as a straight truck and is configured for non-CDL operation. The Class 7 T370 offers a GVW range from 11,800 to 29,630 kg as a straight truck or tractor, and is a multi-dimensional performer to suit almost any vocation.

Source: Kenworth Truck Company





Appointments

Takeuchi-US recently announced the appointment of Patrick Kirychuk as region business manager for Canada and Alaska, effective immediately. Mr. Kirychuk's main responsibilities include supporting Tkeuchi's dealers and customers across Canada and Alaska.

Patrick Kirychuk has almost 2 decades of experience in heavy equipment sales and management in various roles. Most recently he was employed with SMS



Equipment in Alberta as a sales representative and then promoted to product manager. In his time as a sales representative for SMS Equipment he successfully grew the market in the Calgary Region, developing new customers for a very specific product line and worked extensively with Takeuchi products.

"We are very excited to welcome Patrick to our team," said Henry Lawson, director of sales for North America. "He has a great deal of experience, not only working in the industry but is also well acquainted and knowledgeable with the Takeuchi product line. With his positive attitude and experience he is going to be an excellent addition to our team."

Source: Takeuchi-US

The Association of Consulting Engineering Companies - Canada (ACEC) is pleased to announce that Anthony Karakatsanis, P.Eng., president and CEO of the Morrison Hershfield Group has been named to the position of Chair of the ACEC Board of Directors for the 2020-2021 term. The announcement was made at the ACEC annual general meeting of members held virtually on October 27, 2020.

Mr. Karakatsanis first joined the ACEC-Canada Board in 2016 and served on various committees. During his term as ACEC Chair, he looks to build upon the excellent work of his predecessor Lawrence Lukey, P.Eng., and will continue to promote the important role of consulting engineers in Canadian society. He is committed to ensuring that ACEC remains agile and financially strong so that it can continue to engage with and support its members through the COVID-19 crisis and ensure that the consulting engineering sector has a voice and a role in the subsequent recovery.

Mr. Karakatsanis, a graduate of Western University, has been part of the Morrison Hershfield family for almost 3 decades, joining in 1989 as a project manager. Since, he has held numerous leadership positions in both the vertical and horizontal practice groups before being appointed president and CEO. He has contributed to numerous industry organizations and committees in addition to ACEC-Canada, championing how consulting engineering firms can offer innovative and valued solutions that make a difference to clients and their communities.

ACEC represents companies in Canada that provide professional engineering services to both public and private sector clients. These services include the planning, design and execution of all types of engineering projects, as well as providing independent advice and expertise in a wide range of engineering and engineering-related fields.

Source: Association of Consulting Engineering Companies

Mack Trucks recently announced that effective October 1, 2020, Gunnar Brunius has been appointed vice president and general manager of Mack's Lehigh Valley Operations. The facility, which is located in Lower Macungie Township, Pennsylvania, produces all heavy-duty Mack® truck models built for North American and export markets.



Mr. Brunius previously served as vice president of the Volvo Trucks vehicle

assembly plant in Tuve, Sweden, a position he has held since 2015. He has nearly 40 years of manufacturing, engineering and business experience at the Volvo Group, Saab Automotive AB, and General Motors.

Source: Mack Trucks





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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.

bauma CHINA

November 24-27, 2020 Shanghai, China

Landscape Ontario CONGRESS

January 12-14, 2021 Going virtual due to the pandemic

World of Concrete

Rescheduled to June 8-10, 2021 Las Vegas, NV USA

The ARA Show

Rescheduled to October 18-20, 2021 Las Vegas, NV USA

bauma CONEXPO INDIA

February 23-26, 2021 Gurugram/New Delhi, India

inter airport south east asia

February 24-26, 2021 Singapore

Intermat INDIA

March 4-6, 2021 Mumbai, India

World of Asphalt

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

Work Truck Show

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

Atlantic Heavy Equipment Show

March 31 - April 1st, 2021 Moncton, NB Canada

stein*expo* April 14-17, 2021

Homberg/Nieder-Ofleiden, Germany

INTERMAT Paris

April 19-24, 2021 Paris, France

InnoTrans

April 27-30, 2021 Berlin, Germany

The BIG Event Canadian Mining Expo

June 1-3, 2021 Timmins, ON Canada

AORS Municipal Public Works Trade Show

June 2-3, 2021 Barrie, ON Canada

International Rental Exhibition (IRE) / APEX access show

June 15-17, 2021 Maastricht, the Netherlands

Hillhead

June 22-24, 2021 Buxton, Derbyshire, UK

The Utility Expo

September 28-30, 2021 Louisville, KY USA

inter airport europe

November 16-19, 2021 Munich, Germany

IFAT

May 30 - June 3, 2022 Munich, Germany

Svenska Maskinmässan

June 2-4, 2022 Stockholm, Sweden







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