

CAPITAL EQUIPMENT¹ NEWS

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MARCH 2020

DIVERSE PRODUCT RANGE SEALS THE DEAL

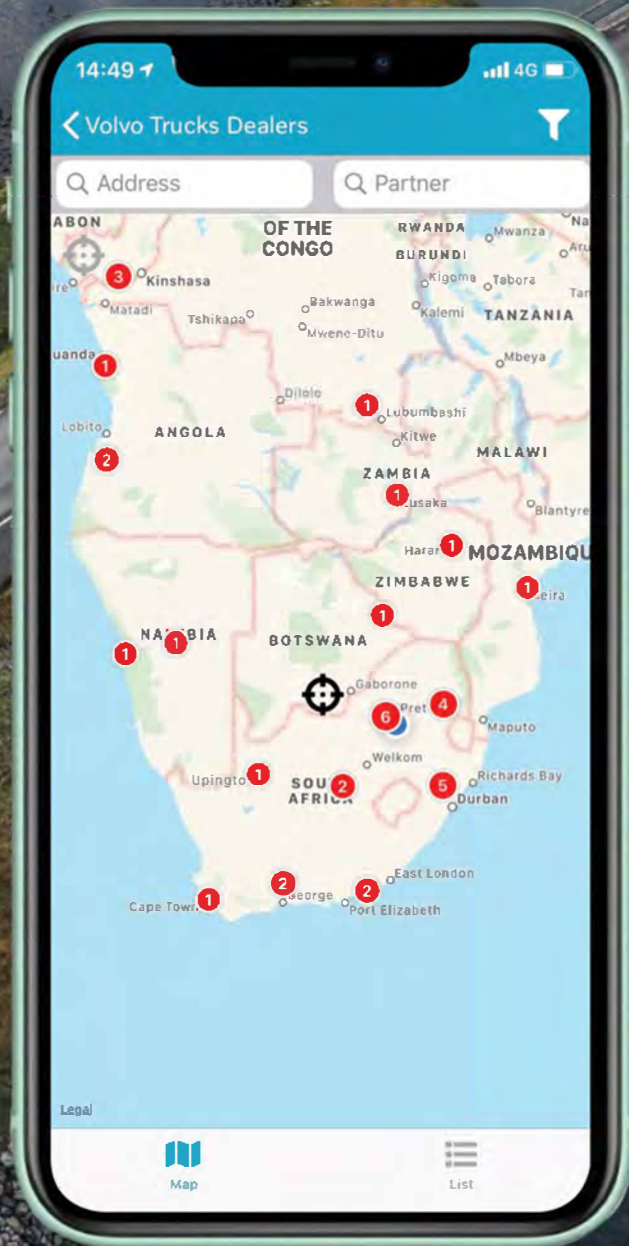


SCREENING BUCKET: Turning waste materials into opportunities

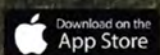
TROLLEY ASSIST: Trolley assist system for Cat electric mining trucks

CRUSHER BUCKETS AND SCREENERS: Transforming carriers into multifunctional tools

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CORONAVIRUS — COUNTING THE LOSSES

At the time of writing, South Africa, Nigeria and Senegal had confirmed the first cases of the deadly coronavirus in sub-Saharan Africa. Elsewhere in the Maghreb region, Algeria, Morocco and Egypt have also had reported cases. Despite the small number of confirmed cases to date, the outbreak is seriously infecting Africa's resource-intensive economies. In fact, as China grapples with the coronavirus, the economic damage is mounting around the world, putting the hopeful narrative about 2020 heralding a modest rebound in global growth in jeopardy.

The spread of the virus is hurting construction and mining investment from China, as well as travel, trade and supply chains worldwide. As a major consumer of natural resources from the continent, the impact of China's economic engine shifting downward due to Covid-19 could have a deep impact on several African economies.

China's impact on African mining, for instance, cannot be underestimated. The world's second-largest economy, has over the years, invested billions in mining and mineral extraction projects and companies across the continent. Estimates differ from source to source, but, by 2019, it is estimated that China invested about US\$100-billion in the African mining sector.

Africa has long been on China's radar. This is corroborated by the growth of inward cash flows between 2010 and 2011. The Commodity Discovery Fund, quoting figures supplied by CMA, says investment reached US\$217-billion by 2011 – a year-on-year increase of US\$140-billion.

China also imports roughly US\$4-billion worth of minerals, ores and metals from Africa every month, according to data from Trading Economics. It is no secret that the continent sits upon trillions of dollars' worth of extractable resources. A great number of these are crucial in feeding China's manufacturing appetite.

To give an idea, Africa holds an estimated 90% of the world's entire reserves of platinum and cobalt, 50% of global gold, 35% of the world supply of uranium, and

two-thirds of all manganese. Another key mineral is coltan, an essential component for electronic and mobile phones, of which Africa holds 75%.

This in addition to the typical metals like iron and copper, for which China has a voracious appetite. Other minerals produced by African states of interest to Chinese buyers include chromium, cobalt, bauxite, tantalum, ilmenite, zirconium and, of course, diamonds.

China accounts for 58% of Eritrea's mineral exports, mostly zinc and copper ore. For the Democratic Republic of Congo, the figure is about 45%, mostly in the form of cobalt shipments. Meanwhile, exports to China account for 23% of Angola's GDP, according to data compiled by Renaissance Capital.

From a supply chain point of view, a report from the South African Institute of International Affairs (SAIIA) states that, between 2005 and 2017, Chinese firms supplied US\$58-billion to Africa's mining and mineral extraction industries. That represents a third of Chinese FDI in international mining operations during the review period.

These figures are proof that China is Africa's leading trading nation, so economic fallout from coronavirus also threatens African growth. Given Africa's reliance on China, slowing Chinese economic growth – already expected to slow to 4,5% in the first quarter of 2020, the slowest pace since the financial crisis – will spell doom for a number of African countries, especially for resource-intensive economies.

The impact on the African capital equipment market will be equally hectic. Sales into mining will probably slow down as the industry grapples with slowing capital investment and shrinking demand. From a consumer point of view, there is a threat of costly downtime as many OEMs will likely contend with their parts supply chains, given the continued closure of factories in China. The world has entered uncharted territory in the battle against the coronavirus and this could be one of the greatest tests to the world order in a generation. 🌐



Munesu Shoko – Editor



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Going the Extra Mile

DIVERSE PRODUCT RANGE SEALS THE DEAL

Tyre manufacturer Sumitomo Rubber South Africa has taken delivery of a large fleet of machines on a long-term rental facility from one of southern Africa's leading materials handling equipment suppliers, Goscor Lift Truck Company. By Munesu Shoko.

Sumitomo Rubber South Africa (Sumitomo Dunlop), a leading global tyre manufacturer, has taken delivery of 43 pieces of materials handling equipment on a 60-month rental facility from Goscor Lift Truck Company (GLTC). The machines have been deployed to work at Sumitomo's world class manufacturing plant in Ladysmith, KwaZulu-Natal.

The fleet comprises 15 x DEC 5-tonne (t) electric tow tractors recently introduced to the local market by GLTC, 20 x Doosan diesel forklifts with capacities from 1,8 to 5,5 t and 8 x Crown ESR5620-2.0 reach trucks with 11,5 m lift heights.

Applications

Jogen Moodley, associate manager procurement at Sumitomo Dunlop, says the DEC electric tow tractors are deployed to transport work-in-progress material used for tyre production within the factory. He says the machines are powerful and smaller, and fit the bill for the factory's confined working spaces.

"Space constraints have created a challenge to move material within our factory. The DEC tow tractors can easily access confined spaces which cannot be accessed by conventional forklifts. Another key benefit is that these units use less gas or fuel, which in turn translates into both operational savings and less emissions, ensuring the health of our employees," explains Moodley.

Dale Rosewall, GLTC KZN sales manager, says the 20 Doosan forklifts were all specified according to the different department and application needs within the facility. This was done after an extensive site investigation.

Moodley explains that the forklifts are being used to move heavier loads than those handled by tow tractors. These include raw materials, equipment and tooling, among others.

The eight Crown ESR 5260-2.0 ESR lift trucks are being used in the raw material and finished goods warehouses. Moodley explains that space between the aisles at the two warehouses is restricted. "Due to the space constraints, we cannot use conventional fork trucks, and reach trucks are winning the day for us. Offering 11,5 m of lift height capacity, the ESR reach trucks assist with the height factor for storage at higher level racks," he says.



Why rental?

Explaining the rationale behind Sumitomo Dunlop's decision to rent, Moodley says materials handling equipment is generally expensive to buy and maintain. "Outright purchasing would cost huge amounts of capital. That's why we opted for the rental option with a maintenance contract for complete peace of mind," he says.

In fact, renting offers the company the flexibility it needs, allowing it to easily adapt to business fluctuations. Rental offers a far lower upfront cost compared with the outright purchase of a new unit. In addition, a rental can be written off as an operational expense, and is generally far easier to deal with than the depreciation costs that come with a purchased asset.

In terms of budgeting, a rental is far easier to forecast expenses than any unexpected repairs that may be needed during the lifecycle of an owned unit. The rental option also offers back-up machines in case of breakdowns to ensure that productivity is not affected while the machine goes for repair. Rental also offers an easy upgrade or downgrade path without additional capital outlay when compared with outright purchasing.

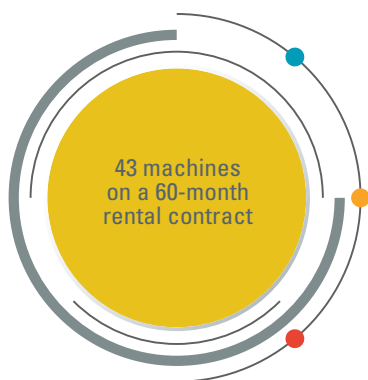


"We have been working with Sumitomo Dunlop since the opening of its new TBR plant in Ladysmith. Staying true to our market leading reputation, we have technicians and a workshop fully stocked with parts onsite to offer world-class support service."

Dale Rosewall, GLTC KZN
sales manager



The machines have been deployed to work at Sumitomo Dunlop's world class manufacturing plant in Ladysmith, KwaZulu-Natal.



Why GLTC?

Commenting on why GLTC remains Sumitomo Dunlop's MHE supplier of choice, Moodley says the company's high quality aftersales support, efficient key accounts sales personnel, flexibility, robust machine options and pricing are some of the key factors why the tyre company finds comfort in dealing with GLTC.

"We have been working with Sumitomo Dunlop since the opening of its new TBR plant in Ladysmith. Staying true to our market leading reputation, we have technicians and a workshop fully



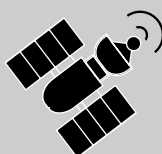
Sumitomo Dunlop has taken delivery of 43 pieces of materials handling equipment on a 60-month rental facility from Goscor Lift Truck Company



The fleet comprises 15 x DEC 5-t electric tow tractors, 20 x Doosan diesel forklifts and 8 x Crown ESR5620-2.0 reach trucks



Sumitomo Dunlop opted for the rental option with a maintenance contract because it offered a far lower upfront cost compared with outright purchase



All machines on site are fitted with Goscor's fleet management system

QUICK TAKE



Representatives from Sumitomo Dunlop taking delivery of the 43 machines from GLTC.



The DEC electric tow tractors are deployed to transport work-in-progress material used for tyre production within the factory.



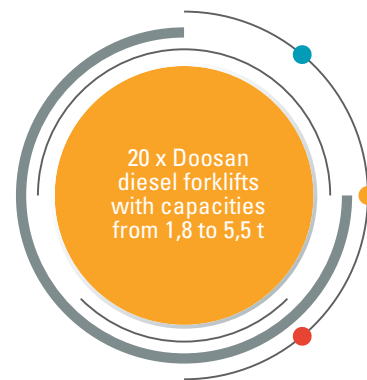
The Doosan forklifts are being used to move heavy loads, including raw materials, equipment and tooling.

stocked with parts onsite to offer world-class support service," says Rosewall.

Fleet management

For peace of mind, all machines on site are fitted with Goscor's fleet management system. Rosewall says the system helps customers improve efficiency and reduce abuse costs. The system is a complete forklift fleet management product, which operates via the GPRS network. Data is sent via a corporate APN (Access Point Name), a point where a mobile device can enter an IP network.

"There are three fundamental goals of the fleet management system: optimisation of fleet productivity, creating professional driver behaviour and monitoring



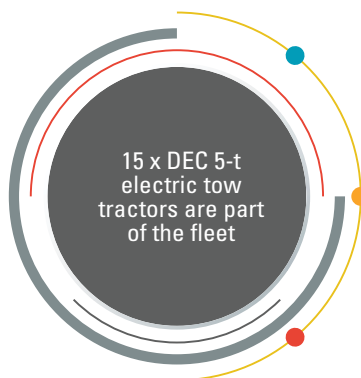
equipment performance. In optimising productivity the system measures the utilisation of forklifts over a predetermined period, providing a 'utilisation snapshot' which establishes, among others, the optimum number of forklifts required in an operation," says Rosewall.

To increase uptime and maximise production efficiency, monitoring equipment performance on a constant basis is one of the key attributes of Goscor's fleet management system. This helps prevent engine damage by accurately monitoring overheating and low oil levels, among others, resulting in extended lifecycle of the vehicle and significantly reducing maintenance and running costs.

The driver cost is usually the biggest cost on IC machines, followed by fuel, which ranges between 30-40% of total lifecycle costs, but application dependent. Driver performance improvement is quite staggering with the implementation of the fleet management system. Driver performance is a key parameter when it comes to fuel efficiency, which is a key metric in running a profitable business. The system analyses driver behaviour and generates easy-to-read reports to allow for identification of potential areas for fuel savings, and optimises accordingly, through driver training, for instance.

"There are also live alerts/reports from the system indicating which drivers/machines have the greatest incident ratios of excess idle for further interventions. Other features such as rpm, transmission protection and speed limiters also reduce fuel consumption. In essence, if the desired parameter is exceeded, the machine can be disabled (safely), or an alert sent indicating the guilty party," says Rosewall, adding that Goscor's fleet management system can show a visible fuel usage graph, and has an Excess Idle Cut Out after three minutes.

In conclusion, Rosewall says Goscor offers the most diverse product range in southern Africa, which can tackle any application, adding that this separates the company from the competition. 🌟




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SCREENING BUCKET

MB Crusher has launched its new MB-HDS series of shaft screeners.



TURNING WASTE MATERIALS INTO OPPORTUNITIES

Italian manufacturer MB Crusher has introduced its new generation of shaft screeners, a multi-purpose system designed to manage different types of materials efficiently, helping recycling companies turn to waste materials into business opportunities, writes *Munesu Shoko*.

MB Crusher has added the MB-HDS series of shaft screeners to its range of equipment. With the new range, the company says it has pushed its own boundaries. The machine sets a new standard with an array of innovative features. After years of testing, the company is ready to release it onto the global market.

"The new MB-HDS series is radically different from all the other systems available on the market today. It has been designed to be a real wild card: it can adapt to a range of different working environments and can select different types of material with unprecedented simplicity and speed, without the need for a specialist

or special training," explains Diego Azzolin, production director at MB Crusher.

"Since 2001, when we patented our first crusher bucket, MB Crusher has evolved while remaining true to its purpose, which is to facilitate easy execution of the work at hand and to make projects competitive, self-contained and profitable. What professionals, companies and users want is to be able to work continuously, without interruptions related to unplanned maintenance, which can be very costly," adds Azzolin.

He says MB Crusher has over the years successfully continued to fulfil these fundamental requirements with innovative machines which turn waste materials

The MB-HDS series works with 5 – 35 t tool carriers



into opportunities, a key element for many companies that operate in today's tough business climate.

"We are taking a step forward with the launch of the MB-HDS shaft screener line. We are justifiably proud of our research and development department – it never stops working, just like our crusher and screening buckets, which have been working relentlessly on building sites for over 15 years," says Azzolin.

MB-HDS in detail

Designed with MB Crusher's constructive approach towards reducing waste and increasing the profitability of the construction site, a key talking point is the machine's ability to adapt to different types of work and materials. It's the ideal solution for processing different types of rubble, which can quickly be turned into re-usable and profitable material.

"We have created a machine which, alone, is capable of overcoming various challenges faced every day by those involved in earth removal,



MB Crusher has added the innovative MB-HDS series of shaft screeners to its range of equipment available for the global market



A key talking point on the machine is its ability to adapt to different types of work and materials



The new generation MB-HDS takes care of the machine on which it is installed. An engineered automated shock-absorbing hydraulic system reduces the discharge so that the engine, transmission components and the machine boom do not suffer any damage



The MB-HDS is quieter to operate, making it possible for companies to use it in towns and any other noise-sensitive areas

QUICK TAKE

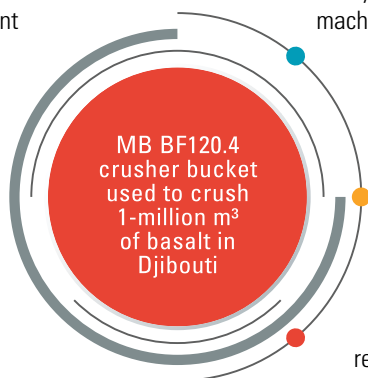
excavation, demolition, recycling, agricultural activities and landscaping," says Azzolin.

The new MB-HDS series selects and crushes excavation and demolition materials, asphalt, coal, organic materials, wood, bark and light plastics, among others, and enables these products to be re-purposed immediately. It is possible to transform one material into another effortlessly, and this is said to be the most important and useful capability of the machine.

Until now, changing rotating shafts has been a complex exercise, particularly because it is difficult to position the rotating shafts correctly (they must be synchronised with the power transmission systems and the rollers next to them), and because the support bearings must be replaced at the same time.

With the MB-HDS screening bucket, rotating shafts can now be changed easily and safely on site by a single person in a matter of minutes. "Our patented system keeps the rotating support in place, the rotors can easily be removed and re-positioned, while the angular alignment is kept in place. For us, the development of this new system represents a breakthrough, and for companies, whether big or small, it means having a construction site that is always working, and obtaining

MB BF120.4 crusher bucket used to crush 1-million m³ of basalt in Djibouti





The MB-HDS is designed to process different types of rubble.



An MB BF120.4 crusher bucket was recently deployed to crush over 1-million m³ of basalt for road construction purposes in Djibouti.

high-quality materials that can be re-used or sold, saving transport, dismantling and maintenance costs in the process," adds Azzolin.

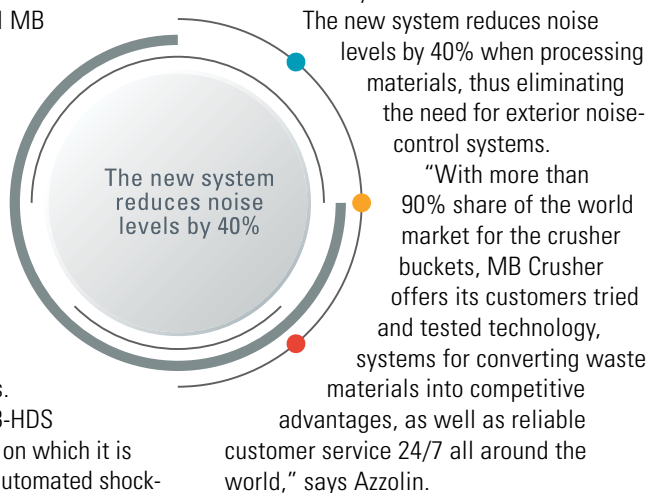
The range

The MB-HDS screening bucket is available in four models with shafts suitable for the different material selection requirements. As with all MB Crusher machines, they can be easily installed on excavators, diggers, mini diggers and loaders (from 5 to 35 t) in order to easily access and move around work sites, construction sites, areas containing large pipelines, towns or remote agricultural areas.

The new generation MB-HDS takes care of the machine on which it is installed. An engineered automated shock-

absorbing hydraulic system reduces the discharge so that the engine, transmission components and the machine boom do not suffer any damage. This helps preserve machine life expectancy and reduce maintenance costs.

The MB-HDS is also quieter to operate, making it possible for companies to use it in towns and any other noise-sensitive areas.



African uptake

As the attachment revolution continues apace, crusher buckets and screeners are continuously finding favour in the African marketplace. The attachments use hydraulic power from the loader or excavator to which they are attached, making it easy to gather rock, crush and load into trucks or use in situ – adding value to operations and existing tools at the job site.

MB Crusher sells its crusher buckets across the whole of Africa. Its solutions have recently been used at some of the continent's famous projects. A recent case in point is the Djibouti Ports & Free Zones Authority's construction of a US\$3.5-billion free trade zone, which extends over 4 800 hectares. The MB BF120.4 crusher bucket, mounted on a Volvo EC3800L excavator, was deployed to crush over 1-million m³ of basalt for road construction purposes.

Djibouti is located at the junction of the three rifts – the East African, the Gulf of Aden and the Red Sea. It plays a crucial junction role for import and export, representing a major gateway connection.

This is one of the reasons that motivated the Djibouti Ports & Free Zones Authority to begin construction of a US\$3.5-billion dollar free trade zone. The initiative is expected to create 200 000 new jobs, and cement Djibouti's role as the strategic link between global maritime trade routes, within the Belt and Road Initiative.

The Djibouti International Free Trade Zone (DIFTZ) will transform trade in the region and provide a strategic base for global businesses to access the rapidly growing African market. Construction of DIFTZ began a week after the completion of the Addis Ababa-Djibouti railway, a new 752 km track linking Ethiopia's capital with the Port of Djibouti.

MB Crusher technology is playing a key role in the development of this crucial project. From the onset, the Chinese company working at the DIFTZ project was impressed by the power of MB Crushers' offering, simply by watching it working. Quality and quantity of recycled material obtained by the MB Crusher BF120.4 was one of the main aspects that the company took in consideration when making the buying decision.

Once the company had the BF120.4 working at the Djibouti project, and verified first-hand the MB Crusher bucket performance and the benefits gained from it, it wouldn't consider any other options.

By increasing the volume of material recycled directly on site, the company has been able to produce the sub-base for the DIFTZ road connections, reducing at the same time the amount of waste that could have ended up in landfill sites. ♻️

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The commercial rollout of the Cat trolley assist system comes after the conclusion of a nearly two-year pilot project at Boliden's Aitik mine in Sweden.



TROLLEY ASSIST SYSTEM FOR CAT ELECTRIC MINING TRUCKS

Following a successful two-year pilot project at Boliden's Aitik opencast mine in Sweden, Caterpillar has commercially rolled out its Cat trolley assist system for Cat electric drive mining trucks to the global market, writes *Munesu Shoko*.

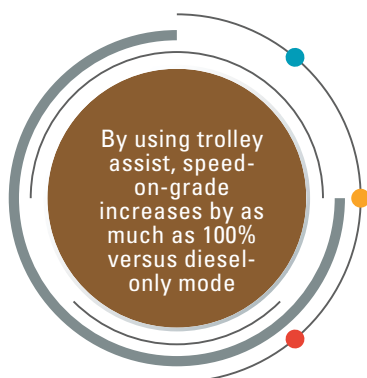
Thanks to Boliden and Caterpillar's recent trial at the Aitik open-pit mine in Sweden, the subject of trolley assist systems is back on the mining industry's agenda. Offering significant productivity benefits, trolley assist technologies have been considered for decades. At the peak of the oil crisis of the

1970s, numerous studies investigating applications were completed and miners made preparations accordingly to reduce their reliance on diesel.

Despite this, widespread industry uptake of the technology has not happened. While there have been a couple of installations in the world, with southern Africa being one of



Trolley assist is a system whereby a diesel-electric mining truck powers itself with electricity from overhead power lines instead of the diesel engine turning a generator onboard the truck.



the mining markets that has operated trolley assist systems for more than 20 years, the technology has not caught on to the extent many expected.

With mines continuously seeking for measures to stay on top of the cost

QUICK TAKE

Caterpillar is commercially introducing its Cat trolley assist system to the global market



This comes after the conclusion of a nearly two-year pilot project conducted with four 795F AC trucks using 700 m of electric trolley line Boliden's Aitik mine in Sweden



The trolley system boosts productivity significantly – operating with trolley assist, speed-on-grade increases as much as 100% versus diesel-only mode



Powering a 337-t payload 795F AC via trolley on a 10% grade as it climbs the ramp out of the pit saves up to 40 l of diesel fuel per kilometre of trolley line





"We are currently in discussions with customers regarding collaborating on the next implementation of trolley assist. When an agreement is reached, we will work with the customer to develop trolley assist for the selected truck model and to optimise the installation for their region and application."

Joe Rottman, product performance manager, Large Mining Trucks at Caterpillar

control battle, Caterpillar is commercially introducing its Cat trolley assist system to the global market. This comes after the conclusion of a nearly two-year pilot project conducted with four 795F AC trucks using 700 m of electric trolley line at Boliden's Aitik mine.

Joe Rottman, product performance manager, large mining trucks at Caterpillar, says the new Cat trolley assist system for Cat electric drive will help mines reduce their carbon emissions, lower fuel and engine costs and boost speed-on-grade for greater productivity. The Cat trolley assist retrofit is currently available for the 795F AC truck, and the trolley design is compatible with three other Cat electric-drive mining trucks – 794 AC, 796 AC and 798 AC.

Rottman says the trolley assist system for the 795F AC is now available for the African market, adding that Caterpillar and its dealers are open to discussions regarding collaborating on trolley assist for the 794 AC, 796 AC and 798 AC in Africa. "Given the engine and drivetrain commonality of the 794 AC, 796 AC and 798 AC with the 795F AC, the Cat trolley assist system is readily deployable to all three models," says Rottman.

"We are currently in discussions with customers regarding collaborating on the next implementation of trolley assist. When an agreement is reached, we will work with the customer to develop trolley assist for the selected truck model and to optimise the installation for their region and application," he says.

Explaining trolley assist technology

Trolley assist is a system whereby a diesel-electric mining truck powers itself with electricity from overhead power lines instead of the diesel engine turning a generator onboard the truck. The system functions more like an electric passenger train.

Diesel electric haul trucks use electric motors to provide tractive effort, or rimpull.

The speed of the trucks, on grade, is limited by the quantity of electricity which the truck's diesel engine can generate. Trucks with trolley assist collect electricity from overhead conductors, so the speed of the truck on grade is no longer limited by the size of its engine – it is limited only by the capabilities of its motors and electrical drive system.

Rottman explains that the installation of trolley assist first requires identifying one or more haul road segments for trolley assist. Then, two catenary DC electrical lines, supported by a series of support poles, are run overhead the identified haul road segments. Various AC and DC electrical substations are configured to provide power to the trolley assist haul segments.

"Capable mining trucks are fitted with trolley assist iron, which includes a support structure, pantographs and various electrical and hydraulic lines to connect the trolley assist system to appropriate base truck systems," he says.

When one of the mining trucks with the trolley assist iron enters a trolley assist segment, the operator raises the pantographs, connecting carbon brushes on the pantographs to the overhead catenaries. While connected to the catenaries, the mining truck fully powers its electric traction motors from the catenaries and reduces the speed of the diesel engine.

When the mining truck is close to exiting the trolley assist segment, the operator lowers the pantographs, disconnecting from the catenaries, and returns to using the engine for propulsion power.

Key benefits

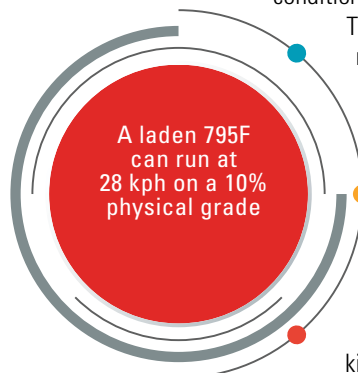
The benefits of the trolley system abound and include increased productivity (due to increased speed on grade), energy



cost savings (by substituting cheaper grid electricity for expensive diesel) and extended engine overhaul intervals (due to the reduced load factor).

"The trolley system boosts productivity significantly. Operating with trolley assist, speed-on-grade increases as much as 100% versus diesel-only mode. Using trolley, a laden 795F can run at 28 kph on a 10% physical grade with solid haul road conditions," explains Rottman.

The trolley system significantly reduces diesel engine emissions at the mine via substitution of electricity during the most demanding part of the truck work cycle. Powering a 337-tonne (t) payload 795F AC via trolley on a 10% grade as it climbs the ramp out of the pit saves up to 40 € of diesel fuel per kilometre of trolley line. Fuel



The Cat trolley assist system programme at Aitik has been a real success, with availability so high despite the arctic conditions.



Fuel and engine costs are reduced by more than 90% when the truck is on trolley

and engine costs are reduced by more than 90% while the truck is on trolley.

The Cat trolley system is fully machine integrated, bringing the benefits of optimised performance and system serviceability to the 795F AC. Caterpillar's higher voltage truck and trolley system is designed to bring advantages through lower infrastructure capital costs and lower power distribution maintenance costs.

Other advantages come from the rugged Cat pantograph, designed to deliver superior uptime and reduced repair costs. A quick-drop feature helps protect the overhead trolley lines.

Success story

The Cat trolley assist system programme at Aitik has been a real success. Jonas Ranggård, programme manager at Boliden, explains that availability has been high despite the arctic conditions, and the company has had good support from Caterpillar and all

other partners involved.

"There are few projects that can show both environmental and productivity improvements of this magnitude. This is why Boliden has decided to expand the trolley infrastructure at Aitik and equip its entire 795F AC truck fleet with trolley assist systems," says Ranggård.

"We thank Boliden for its work in demonstrating the capabilities of the Cat trolley assist attachment. The benefits of trolley can be significant in the right conditions, and we would be pleased to discuss site-specific scenarios with customers," says Eric Ruth, electrical senior product team leader at Caterpillar. "We feel that trolley assist can play a role in achieving mining companies' greenhouse gas reduction goals. Simultaneously, trolley assist boosts productivity by increasing speed-on-grade. In fact, testing at Aitik mine has shown that a 795F AC equipped with trolley assist is the most powerful mining truck in the world!"

Commenting on some of the key lessons from the pilot project

at Aitik, Rottman says trolley assist requires additional truck hardware and site infrastructure, and its implementation brings a host of new challenges to a mining operation. To successfully navigate these challenges, a strong change management plan among mine engineering, planning, maintenance and operations is required.

Application tuning is required to ensure successful trolley performance, as every mine site is different and has unique challenges. Good communication and strong collaboration between OEM, dealer and customer help eliminate roadblocks.

"The team leveraged Caterpillar's position as the only 100% vertically-integrated manufacturer of ultra-class diesel-electric mining trucks and world-leading dealer network to help introduce the trolley assist system. Caterpillar's vertical integration and testing allowed us to design, validate and iterate in the lab and at our proving grounds to detect and resolve problems before they got to the customer site," concludes Rottman. 🌟

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The Transformer D-Series has proved to be the ideal solution for dealing with excavated soil and rubble

Transformer D-Series works with 12-t loaders, and 8-t tractors and backhoe loaders

TRANSFORMING CARRIERS INTO MULTIFUNCTIONAL TOOLS

With its range of new equipment, ALLU is helping businesses transform the way they work by turning any carrier – excavator, wheel loader or skid steer – into a multifunctional tool that can screen, crush, mix, aerate, pulverise and load, all in a one-step process. By *Munesu Shoko*.

At the heart of ALLU's offering is a business focus based on 'transforming the way you work'. The company's latest screening / crushing developments enable crushing, screening, aerating, mixing and loading, all in a single operation.

This enables better profitability as less material goes

to landfills, resulting in less expenditure in haulage costs and landfill fees. "The re-use of material on site also means that there is no need to purchase virgin material due to the recycling and utilisation of left over material and the generation of income from it," says Marjut Lindroos, group marketing manager at ALLU.

Typical applications for the ALLU Transformer offering



are pipeline padding; waste management, for example, recycling and processing demolition waste; contaminated soil treatment; and landscaping.

To demonstrate the breath of the offering, the company will exhibit a range of equipment at ConExpo 2020 from 10 – 14 March. The range will comprise the ALLU Transformer DL 2-09 with 8 mm TS blades (the thinnest blade model); the ALLU Transformer DH 3-17 with 16/32 TS blades; the ALLU Transformer DH 4-17 with 25/50 TS blades; the ALLU Transformer M 3-20 with 50 mm TS blades; and the ALLU Processor 300HD.

In detail

The ALLU Transformer D-Series comprises an excavator/ loader/ tractor-mounted attachment which screens, crushes, aerates,



The Transformer M-Series has been developed for companies that deal with large amounts of material on a regular basis.

QUICK TAKE

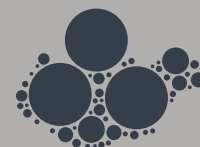
ALLU's latest screening / crushing developments enable crushing, screening, aerating, mixing and loading, all in a one-step operation



At the heart of the Transformer D series is the unique top screen of its bucket. This is where the screening blades spin between the top screen combs with the end material size being defined by the space between the combs



The Transformer M-Series can screen any type of material, and by applying the correct amount of crushing force together with the correct drum type, the attachment also efficiently separates hard unwanted waste materials in the rock mass, while crushing the soft material



The latest version of the ALLU App provides an intelligent digital solution for customers and operators to obtain accurate and timely information regarding safe operations at jobsites, thereby maximising the use of the ALLU equipment



"The re-use of material on site means that there is no need to purchase virgin material due to the recycling and utilisation of left over material and the generation of income from it."

Marjut Lindroos, group marketing manager at ALLU

TALKING POINT



The ALLU Processor is a power mixer attachment which converts any excavator into a powerful and versatile mixing tool capable of penetrating and effectively mixing a variety of difficult materials.

blends, mixes, separates, feeds and loads materials in a one-step operation.

At the heart of the Transformer D is the unique top screen of its bucket. This is where the screening blades spin between the top screen combs with the end material size being defined by the space between the combs. Effectively, the screening combs carry most of the material weight to ensure the drums and bearings take on less impact and load. The construction is clog-free and maintains good capacity even with wet materials.

"The Transformer D-Series has proved to be the ideal solution for dealing with excavated soil and rubble, where processed material doesn't need to be transported away and be replaced with fresh soil. Not only does this result in substantial savings in material and transport costs, but no time is lost when waiting for replacement material. Additionally, binders can be mixed if the job undertaken requires stabilisation," says Lindroos.

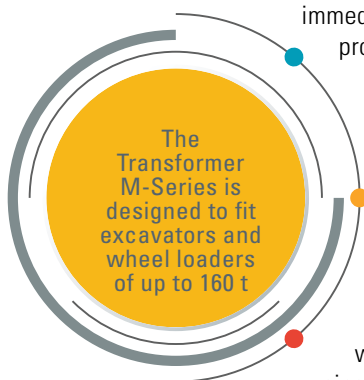
The Transformer D-Series is designed to be mounted on 12-t loaders and 8-t tractors and backhoe loaders. This means that the range is ideally suited to the requirements of companies needing

limited, yet profitable material separation, crushing, screening and processing.

The Transformer DL-Series has proved its value in landscaping, pipeline, padding and agricultural applications; from composting to aerating, top soil screening to waste and debris processing. It can also be mounted on 12-t loaders and 8-t tractors and backhoe loaders.

The Transformer M-Series can easily handle, in one step, any materials within its range. It can screen any type of material, and by applying the correct amount of crushing force together with the correct drum type, the attachment also efficiently separates hard, unwanted waste materials in the rock mass, while crushing the soft material. Furthermore, the processed material is of a uniform quality, enabling transportation of good quality material by dump truck immediately after being processed.

"By adapting to the processing needs and rock mass it encounters, the attachment boosts productivity. Different drum configurations of 50 mm and 75 mm mean differing fragment sizes may be processed with high productivity in a single pass. The entire process is fully mobile, and can replace conventional crushing and screening plants in many cases," says Lindroos.



Using IoT technology, the ALLU App provides information about the working hours and the right angle of inclination with ALLU Transformer.

The Transformer M-Series has been developed specifically for companies that deal with large amounts of material on a regular basis, particularly quarries, aggregate producers, surface miners, power plants and process industries. It has been designed to fit excavators and wheel loaders of up to 160 t.

The ALLU Processor is a power mixer attachment which converts any excavator into a powerful and versatile mixing tool capable of penetrating and effectively mixing a variety of difficult materials. Materials suited for the attachment range from clay, silt, peat, sludge and sediment, to dredged material and contaminated soil.

"Fitted to, and powered by the excavator's hydraulic system, and benefitting from its ability to reach difficult or soft areas, the Processor 300 HD is able to mix materials everywhere the excavator goes. This means that binders or chemical agents can be delivered to the area of the highest mixing shear by an attached 80 mm diameter pipe, and injected via a nozzle located between the mixing drums," explains Lindroos.

Key upgrades

The ALLU TS blades are said to be a modern development for the attachment screener/crusher market. At the core of the ALLU TS drum construction is the



configuration of the screening blades that spin between the screening combs. The end product size is defined by the space between the combs, and different fragment sizes can be achieved simply by repositioning the combs.

As the screening combs carry most of the material weight, the drums and bearings experience less impact and load, with the design of the assembly ensuring the machine works well in wet and dry

materials without clogging.

The ALLU TS drums are available with two different blade types: standard blades for screening applications and axe blades when a crushing or shredding effect is required. Blade sizes available include 16-32 mm, 25-50 mm and 35 mm. The latest development in the ALLU TS assembly enables three different fragment sizes from same unit.

Fragment size estimation is based on screening comb distance, with it being quick and easy to change from one screening job to another, providing more versatile processing. Due to ALLU TS's self-cleaning design, it allows the best possible capacity even with wet materials, termed a non-clogging structure.

More blade variations

With doubling and tripling options, ALLU now has the widest range of blade variations on the market. The single blade setup positions two or three blades in a single position, with one screening comb between the blades. The options for blade thicknesses in this assembly are 8 mm, 16 mm, 25 mm and 35 mm.

With the double blade setup, two blades have the same position moving together with two screening combs between the doubled blades. The options for blade thicknesses in this assembly are 16 mm, 32 mm, 50 mm and 70 mm.

The triple blade set up has three blades in the same position that move together. The options for blade thicknesses in this assembly are 24 mm, 48 mm, 75 mm and 105 mm. By changing from a single blade setup to one that is doubled or tripled, the

estimated fragment size can be changed from single to double or triple. This means that one ALLU Transformer can produce three fragment sizes.

ALLU App

The latest version of the ALLU mobile application (ALLU App) provides an intelligent digital solution for customers and operators to obtain accurate and timely information regarding safe operations at jobsites, thereby maximising the use of their ALLU equipment. The app accomplishes this whenever a mobile online service is available through accessing information that is relevant to the serial number of the attachment.

Using IoT technology, the ALLU App provides information about the working hours and the right angle of inclination with the ALLU Transformer. To maintain maximum productivity on site and to minimise equipment downtime, the ALLU App provides information about the ideal maintenance frequency and the changing of wear parts, based on working hours.

"The ALLU App provides instructions to guide the operator through safe working methods when using the ALLU attachment throughout the whole operating and ownership process. It also provides specific information about different jobsite applications, and how best to utilise ALLU equipment, ensuring that the very best performance is obtained from the attachment. This is facilitated through accessing quick guides ranging from set-up, installation and operations with the operating manual always being at hand," concludes Lindroos. 🌟



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The new LTM 1120-4.1 can tackle jobs which normally would require a five-axle crane, eliminating all the logistics work needed for a larger model.



NEW CRANE LAUNCHES AT CONEXPO 2020

New crane launches at this year's ConExpo-Con/Agg from Liebherr, Comansa and Manitowoc will highlight how – in line with today's customer needs – innovation is enhancing the crane industry, writes *Munesu Shoko*.

Modern crane innovation is replacing the cranes of previous years. Several new crane launches at ConExpo-Con/Agg – to be held from 10 to 14 March 2020 – will highlight how evolving customer needs are compelling new crane innovation.

Liebherr will unveil its new LTM 1120-4.1, using the slogan, "There's nothing more on 4!" It is said to be the most powerful four-axle, all-terrain crane ever built. The new 120-t machine breaks into a performance class which has previously been the sole preserve of five-axle cranes. As far as

boom length is concerned, it is on a par with 200 t class cranes as its 66 m telescopic boom is the longest ever to be installed on a four-axle mobile crane. Liebherr will start deliveries of the new LTM 1120-4.1 late in 2020.

Comansa will use the show to unveil its LCL310 luffing-jib crane, specifically its 18-t maximum load version. Its maximum jib length is 60 m,

The LTM 1120-4.1's 66 m telescopic boom is the longest ever to be installed on a four-axle mobile crane

The Manitowoc MLC150-1 is designed to meet the needs of customers who desire a compact, manoeuvrable crawler crane with a strong load chart and easy transport.

and the different configurations allow for maximum jib steps every 5 m. The luffing-jib crane, with its compact design and reduced out of service radius, is ideal for use in cities or congested building sites.

Manitowoc will use the show to unveil its latest crawler crane, the Manitowoc MLC150-1. The new crane is one of six brand-new cranes that the company is showing this year, along with several others making their debuts.

New standards in four-axle

Delivering maximum performance on a four-axle mobile crane has been traditional at Liebherr for decades. For example, when the current LTM 1100-4.2 was launched in 2009, it set new standards in the four-axle class with a lifting capacity of 10,2 t on its 60 m telescopic boom. The new crane has added 18% to this value at the same length. The LTM 1120-4.1 can also extend its telescopic boom to up to 66 m, an additional 10%. This means it reaches the same level of many 200 t mobile cranes on the market.

The LTM 1120-4.1 delivers outstanding lifting capacity values, particularly with the boom fully raised. Its lifting capacity of 9 t on the 66 m telescopic boom makes it ideal for erecting tower cranes and radio masts. Lattice extensions enable the crane to achieve hook heights of up to 94 m and radii of up to 64 m. For this, a 7 m lattice boom extension is installed, as well as a 10,8 to 19 m double folding jib which, as an option, can also be adjusted hydraulically between 0° and 40°. A 2 m erection jib and a runner which can be swung to the side round off the equipment list.

The new LTM 1120-4.1 can tackle jobs which normally would require a five-axle crane, eliminating all the logistics work needed for the larger model. Because a four-axle crane delivers benefits in terms of licensing and route permits, it can tackle jobs faster and with greater flexibility. The design of a four-axle crane also enables it to work where there is insufficient space for larger cranes. On constricted sites specifically, Liebherr's VarioBallast and VarioBase innovations deliver enhanced performance, flexibility and safety for this new crane model.

VarioBallast on the LTM 1120-4.1 enables the crane to operate with a ballast radius of 3,83 or 4,77 m. The ballast radius can be reduced

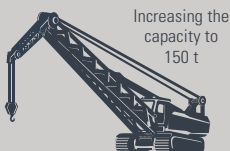
The MLC150-1 features a 150 t base capacity and a maximum boom length of 78 m



Liebherr will use ConExpo-Con/Agg to unveil its new LTM 1120-4.1, said to be the most powerful four-axle, all-terrain crane ever built

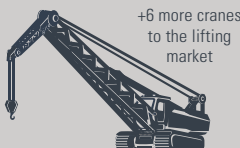


Comansa will use the show to unveil its LCL310 luffing-jib crane, specifically its 18-t maximum load version



Increasing the capacity to 150 t

Manitowoc's new MLC150-1 crawler crane continues the momentum of its popular predecessor, the MLC100-1, increasing the capacity to 150 t and adding a host of several new features



+6 more cranes to the lifting market

In addition to unveiling the MLC150-1, Manitowoc will use ConExpo to launch six other new cranes to the lifting market

TAKE

QUICK



Comansa will use ConExpo to unveil its new LCL310 luffing-jib crane.

by 940 mm quickly and easily, using standard, mechanically adjustable ballasting cylinders when site conditions get tight. The large ballast radius delivers higher performance and, often, cost benefits, by reducing ballast transport as many crane jobs can be completed using the system with fewer counterweights.

The maximum of 31 t of ballast is distributed so variably that in addition to the 12 t axle load version, uniform axle loads of 13,5, 14,5 and 16,5 t can also be achieved. This means benefits driving on construction site and in countries where higher axle loads are permitted.

A six-cylinder Liebherr diesel engine in the undercarriage, which develops 330 kW and torque of 2 335 Nm provides the LTM 1120-4.1 with all the power it needs. The engine satisfies the new stage V emissions directive and can also be built to comply with the regulations of countries outside Europe – for example, Tier 4 for the United States or Stage III for low-regulated countries.

The ECOdrive has proven its value over several years: it delivers enhanced drive properties which save fuel and reduce noise. Hillstart Aid makes starting on gradients easier.

ECOMode is now standard on Liebherr mobile cranes with a load-sensing control system – the crane controller calculates the perfect engine speed for the working speed selected using the control lever to avoid unnecessarily high engine speeds. That also saves fuel and makes the engine quieter.

Comansa's exhibit

During the trade show, Comansa will also exhibit the CUBE cab, winner of the iF prize in 2018, which comes as standard in most of Comansa's cranes. It combines a new design, comfort and maximum productivity, as well as innovative advantages in terms of ergonomics and features.

Comansa will also promote the latest versions of its cranes developed over the past year, especially its new 21LC1050 and 21LC1400 models, with maximum load capacities of up to 50 and 66 t respectively, which will improve productivity and enhance options in a market focused on large, flat-top tower cranes.

The new Quick Set system will also be introduced. This is a new technology designed to simplify the commissioning of cranes. With Quick Set, the set-up and calibration times are significantly reduced using a system that leads to easier, safer and more intuitive adjustments, achieving faster and less labour-intensive calibration. The smart development is the result of experience gained over the years, and is readily available across the entire 21LC range. During 2020, it will be expanded to the 11LC and 16LC ranges.

Carrying the legacy

Manitowoc's new MLC150-1 crawler crane continues the momentum of its popular predecessor, the MLC100-1, increasing the capacity to 150 t and adding a host of several new features. It was designed to meet the needs of customers who desire a compact, manoeuvrable crawler crane with a strong load chart and easy transport.

"A big component of The Manitowoc Way is listening to exactly what our customers need and want in their cranes," says Brennan Seeliger, product manager at Manitowoc Cranes. "We have had great feedback on the MLC100-1, so we based the new MLC150-1 on that model, but boosted the capacity for the 150 t class."

The MLC150-1 features a 150 t base capacity and a maximum boom length of 78 m. A fixed jib of 24 m with a 27 t capacity is available for the crane, and a 52 m luffing jib with a capacity of 46 t is another strong option for the job site.

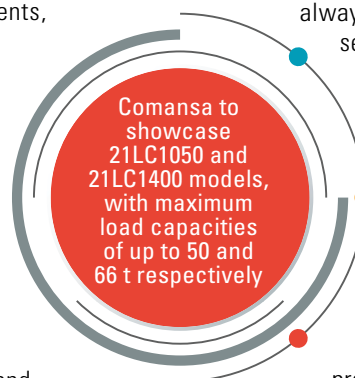
The new crane features quicker assembly than previous models, too. The boom butt mounted sheave enables self-assembly without the boom top, it features a button style rope termination, and a gantry-raised counterweight reduces components. The boom cap, jib butt and struts ship as a single package for fewer connections. It's also easier to transport. An increased hook height enables self-assembly with various trailer heights, and the crane is designed to be transported with minimal permitted loads.

Operators will particularly enjoy using Manitowoc's Crane Control System (CCS), which can be found across Manitowoc's crane ranges and provides commonality in operation and maintenance. Additionally, the left side console rotates for improved egress inside the cab.

"Users will really like the upgrades to the cab in the MLC150-1," Seeliger says. "While this crane has great capacity and reach for the 150 t class, improved transport and erection efficiencies are always something users like to see."

More launches

In addition to the MLC150-1, Manitowoc will launch six other new cranes to the lifting market. The large number of new cranes launching at the tradeshow reflects Manitowoc's improved product development cycle under The Manitowoc Way.



It was less than a year ago that Manitowoc launched six new cranes at bauma 2019, and the company is matching this feat at ConExpo. The six new models will come from the Manitowoc, Potain, Grove and National Crane ranges, covering a wide spectrum of lifting industry needs.

Barry Pennypacker, president and CEO of The Manitowoc Company, says the crane maker is delivering on its promise to design and manufacture new products more rapidly so that Manitowoc customers can utilise the increased capabilities and efficiencies they bring and earn more return on their capital investments.

"At ConExpo 2020, we plan to show how our innovation and velocity efforts under The Manitowoc Way are producing cranes that offer class-leading design and performance," he says. "Many of our customers provide direct input into the design and functionality of our new cranes, and we know that they will be thrilled to see their contributions come to life. ConExpo will be a great opportunity to show the entire lifting industry that at Manitowoc, the revolution is real." 🌟



The large number of new cranes launching at the tradeshow reflects Manitowoc's improved product development cycle under The Manitowoc Way.

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A global trend is for OTR equipment to be built larger to accommodate the growing scale of construction sites.

THE OTR TYRE MARKET: AN OVERVIEW

***Capital Equipment News* takes a look at the off-the-road (OTR) tyre industry; end-user needs and expectations; value-add offerings and new trends and technologies in this industry. By **Mark Botha**.**

South Africa is faced by a depressed economy and increased financial pressure, meaning that OTR tyre users are generally on the lookout for products offering longer service life, with better performance, yet at lower cost, says Sharon Miller, marketing executive at AMS Tyres.

She says this is especially evident in South Africa, where the mining equipment market has seen steady

decline in recent years.

"Investments in OTR equipment must be considered carefully as these tyres make up a large portion of the running costs."

A global trend, she says, is for OTR equipment to be built larger to accommodate the growing scale of construction sites, which means that improved performance is required from the tyres in terms of reduced



rolling resistance, durability, load bearing capacity and wear resistance, including cut and puncture resistance, while being cost-effective.

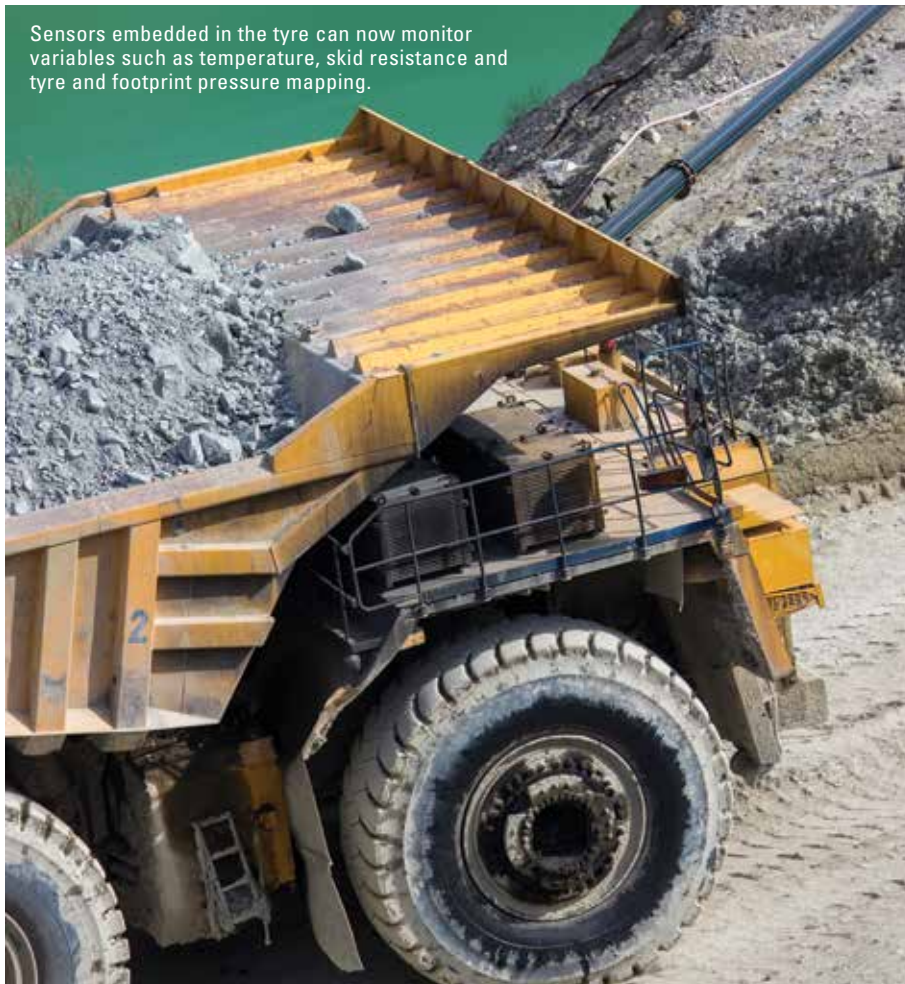
"End-users are also becoming increasingly aware of the impact products have on the environment and manufacturers are under pressure to make greener and more sustainable choices."

Mario Gindra, Apollo Tyres group manager: export sales, agrees, adding that raw material suppliers to the company are regularly audited to mitigate any unforeseen risk.

"We also monitor substances of very high concern (SVHCs) in terms of the European Reach Regulations, as well as child labour policies, against international regulations," he says.

"Price is not always the only

Sensors embedded in the tyre can now monitor variables such as temperature, skid resistance and tyre and footprint pressure mapping.



QUICK TAKE

OTR equipment is being built larger to accommodate the growing scale of construction sites, which means that improved performance is required from the tyres in terms of reduced rolling resistance, durability, load bearing capacity and wear resistance.



End-users are becoming increasingly aware of the impact products have on the environment and manufacturers are under pressure to make greener and more sustainable choices.



The advantage of sulphur curing lies in the fact that it provides various options to adjust tyre properties such as heat and cut resistance, so catering for all service conditions while being cost-effective.



EFFICIENCY

Airless tyres provide high resistance to damage and punctures and therefore require less maintenance. Conversely, they are capex-intensive, not flexible and don't absorb shock well, causing vibration and wear on the machine.



consideration for the customer as trouble-free fitment and maintenance service minimise running costs."

He says Apollo Tyres takes the "voice of the customer" seriously and continuously monitors its performance via market analyses, among others, to convert customers' needs into "technical specifications".

"We never compromise on safety: we ensure that each product we launch meets all international and in-house standards for consistency in performance and supply, and for minimising cost per hour to reduce the customer's inventory cost."

To provide safe, durable and well-performing off-the-road product with minimal environmental and social impact, Bridgestone subscribes to the "absolute leader" ("Dan-totsu") philosophy, says executive manager OTR, Julio Fava. In line with this philosophy,

the company has brought to market its Tyres & Diversified Products as a Solution (T&DpaaS) strategy, which entails a business platform linking products and services for the customer or business operator via a digital platform.

When asked about emerging integrated value-add trends in the South African OTR market, Apollo's Gindra says "more customers are expecting a total service concept that includes fitment, maintenance and a total service offering with compensation on a certified pre-conditioned for health (CPH) basis."

He says new entrants to the market are expected to supply product at no cost or receive compensation on a pro-rata performance schedule.

Bridgestone's aim in terms of value-adds, says Fava, is not only tyre life improvement, but also looking at contributions to the customer in terms

of productivity: "Customers have the option to choose from more load, more speed, longer life, or a mixture of these elements, and we are prepared to meet their value expectations."

Miller says AMS offers customers turnkey solutions with on-site surveys and fleet inspections to identify the best tyre suited to the application.

"Our engineers inspect customers' sites to ensure the right product is provided to improve their CPH and overall performance."

The company also runs a programme to test its brands against the brand used by the customer fleet and provides a guaranteed no-cost risk during the testing phase.

She says the focus is on educating the customer on the value of having good tyre maintenance programmes in place.

"These programmes must analyse the tyre pressure, health and rate of wear which, in turn, enables the customer to predict their tyres' lifespan and plan for any downtime."

Sulphur curing

While sulphur curing provides a means to strengthen tyres and extend product life, it too has its disadvantages.

"In the tyre industry, sulphur curing results in a harder compound that resists deformation in the presence of pressure or load," says AMS's Miller, "but the additives used in vulcanisation can also have an adverse effect on the environment and impact human and animal health."

She says another disadvantage of sulphur curing lies in the large amount of sulphur and heat required to vulcanise the rubber. When the time comes to recycle the tyre, "it becomes difficult to break down the rubber into usable material where more heat and additives are required."

To Gindra, the advantage of sulphur curing lies in the fact that it provides "various options" to adjust tyre properties such as heat and cut resistance, so catering for all service conditions. Sulphur curing, he says, remains "very cost effective".

Green chemical additives

Apollo Tyres uses green chemical additives in the production of all its passenger car (PCR) and truck tyres while, at AMS, investigations are currently underway into the green manufacturing practices of all its suppliers.

But there is a down-side to going green: "There is an estimated 4 to 5% cost increase in achieving 100% green chemical production," says Gindra.



"Digital solutions have become ever more important in monitoring and analysing the data from these systems. This is where the value for the customer lies – these technologies will allow them to make better decisions in order to improve performance, productivity and safety."

Julio Fava, executive manager OTR, Bridgestone



"Apollo Tyres takes the 'voice of the customer' seriously and continuously monitors its performance via market analyses, among others, to convert customers' needs into technical specifications."

Mario Gindra, Apollo Tyres group manager: export sales



"Investments in OTR equipment must be considered carefully as these tyres make up a large portion of the running costs."

Sharon Miller, marketing executive at AMS Tyres



Apollo Tyres' ALT 188 heavy-duty OTR tyre.



The Bridgestone OTRVLTs tyre.

Citing industry research, Miller points out that non-petroleum additives currently being tested are far less damaging to the environment than their petroleum-based counterparts, while offering improved performance. She says additives such as silica (mineral-based) are more sustainable and provide better performance, such as lower rolling resistance when compared to other additives, like carbon black, but comes at a higher cost, making the product more expensive and invariably less attractive to the user.

Airless OTR

AMS supplies Marcher solid OTR tyres and offers a polyurethane tyre filling service to convert pneumatic OTR tyres into solid tyres and carries the MIT-Onyx and Marcher solid tyre ranges for the forklift and industrial markets.

Apollo's offering in this space is the Solift range. Developed by the company, it features 3-layer cushioning technology to reduce heat build-up and ensure longer operating hours.

To Miller, solid OTR tyres are more durable and are designed to bear higher loads. They reduce downtime while negating puncture problems, she says.

They are, however, heavier than their pneumatic counterparts and cost more to ship and transport.

"Their weight also makes these tyres difficult to replace as you need specialised fitment presses and cranes for the job," she says.

Gindra says airless tyres provide high resistance to damage and punctures and therefore require less maintenance. Conversely, they are capex-intensive, not flexible and don't absorb shock well, causing vibration and wear on the machine.

They also lead to reduced fuel-efficiency.

On whether airless tyres improve the mechanical and dynamic properties of rubber, Miller says they are in effect a solid mass of rubber but have a "specialised compound in the centre of the tyre for cushioning properties". To Gindra, these cushioning capabilities are limited, causing deterioration of the dynamic and mechanical properties.

Digitalisation

Another new development in the OTR tyre industry is digitalisation, involving embedded sensors to monitor variables such as temperature, skid resistance and tyre and footprint pressure mapping, among others.

Have these technologies arrived on our shores yet?

Apollo Tyres, says Gindra, has developed a prototype which is still being tested, but "will be available soon".

Bridgestone currently uses B-Tag, its in-house tyre pressure monitoring system.

"This system allows us to monitor the tyre pressure and temperature in real-time with a sensor mounted internally, in the tyre", says Fava. "The data is then relayed to a central system and analysed in real-time, allowing the mining dispatcher to improve the productivity of its haul trucks, based on this data."

He says the system also monitors tyre pressure to ensure the tyres are correctly inflated for maximum performance.

"Recording and analysing this data is the first step in achieving our T&D Paas strategy and contributing to the

customer's mobility solution."

AMS offers the Tyre Intelligent Control System, which allows the customer real-time access to tyre air pressure, temperature, running speed, location and distance travelled, as an early warning system to mitigate heat build-up and prevent tyre failure. The system also monitors the tyres' cost per hour.

And do these technologies have a future in our local market?

"I do believe so," says AMS's Miller, "but South Africa will probably be slightly behind the curve compared to the global demand for such technologies."

Gindra agrees: "Yes, this technology has been implemented successfully in many countries and will be available for southern Africa soon."

Bridgestone, too, sees a future for these digital products in the SA market, as customers become more sophisticated in their approach to mining.

"Digital solutions," says Fava, "have become ever more important in monitoring and analysing the data from these systems. This is where the value for the customer lies – these technologies will allow them to make better

decisions in order to improve performance, productivity and safety."

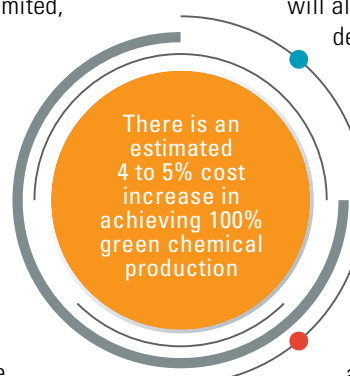
Miller and Gindra agree that these monitoring technologies will improve aspects such as durability, safety and lifetime, although, as Miller puts it, "the results will also

depend on decent fleet maintenance programmes and cannot be based solely on these new technologies."

She says the technology will aid the fleet owner or manager to schedule more regular maintenance while alerting them to minor problems before the tyre fails. She does, however, warn that the "human factor" must also be considered:

"Driver behaviour and training contribute to the overall safety of operating the equipment. If the driver does not adhere to safe driving practices, not even the most advanced technology will avoid the accident or damage to the tyre."

"Digital tyre monitoring," says Gindra, "will prolong tyre life through its early warning systems, providing the customer with early detection to avoid unforeseen down-time and costly pre-mature failures." 🌟





PLUGGING **CRUCIAL PRODUCT GAPS**

The two new Metso Nordtrack jaw crushers – the J90 and J127 – recently launched locally by Pilot Crushtec as part of the nine-model introduction of the new Metso Nordtrack range in southern Africa, close some crucial gaps in the existing mobile crusher offering, writes *Munesu Shoko*.

In October last year, Metso announced the expansion of its mobile crushing and screening offering for the aggregates industry with an extensive new product portfolio. The new range comprised a total of 19 mobile machines, including jaw crushers, impact crushers, screens and conveyors.

However, Pilot Crushtec International, the sole southern African Metso mobiles distributor, has launched a selection of nine products deemed complementary to the existing range and suitable for local conditions. Among the range of products introduced locally are the J90 and J127 jaw crushers.

Francois Marais, director – sales & marketing at Pilot Crushtec International, says the two jaws close some gaps in the company's existing range, from an accessibility, pricing and product sizing perspective.

Pilot Crushtec launches nine new models from the Nordtrack range

New sizes

The entire Nordtrack range will be positioned parallel to the premium Lokotrack range. This will allow Pilot Crushtec to compete in applications where it was



The J127's wide jaw crusher and two-stage feeder enable high throughput in both quarrying and recycling operations.



The J90 mobile jaw crusher offers greater crushing performance in a compact and mobile package.

traditionally not active. For example, the Nordtrack J90, which has no equivalent model within the Lokotrack offering, allows Pilot Crushtec to offer a compact solution to its customers.

"In terms of sizing, the J90 is a compact jaw that allows us to play in a completely new size category. The smallest jaw in the existing Metso Lokotrack range is the C96, which is still relatively a

large machine. In rubble or building

demolition recycling, for

example, moving the

Lokotrack C96 around

would require

massive transport

infrastructure.

The J90 will be

easier to move

around because of

its compact build,"

says Marais.

In terms of

throughput, the J90

produces between 150 and

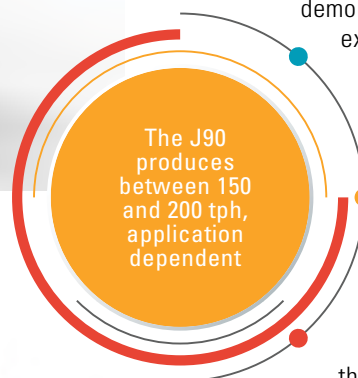
200 tonnes per hour (tph), application

dependent. On the other hand, the

Lokotrack C96 produces between 200 and

250 tph, depending on application.

Meanwhile, the J-127 is of a similar size to the LT120 in terms of the jaw cavity size and production capacity. It doesn't necessarily fill any gap in terms of product size, but offers new possibilities from a price point perspective. "There is an improved price point for consumers who cannot invest in the premium Lokotrack LT 120," explains Marais.



Pilot Crushtec has launched a selection of nine new Nordtrack products. Among the range are the J90 and the J127 jaw crushers



The two jaws close some gaps in Pilot Crushtec's portfolio, from an accessibility, pricing and product perspective



12% price difference

Customers can expect a significant price difference when compared with the Lokotrack range



With standard designs for off-the-shelf availability, plug-and-play features and extensive Metso support network, the Metso Nordtrack solutions are ideal for a variety of applications, such as recycling, demolition, and the processing of sand and gravel

Pricing matters

Speaking at the official launch of the Nordtrack range, Sandro Scherf, CEO of Pilot Crushtec, noted that with crushing contracts reducing in size and value, crushing contractors are under pressure to run profitable businesses, and, therefore, return on investment (ROI) needs to be quicker than usual.

"Contractors have over the years been requesting for more affordable solutions. With the Nordtrack range, we are now able to answer to this specific customer need. The range enables customers to get quicker ROI on their capital equipment investments, while executing their projects cost-effectively," says Scherf.

After Metso's acquisition of McCloskey last year, the machines in the Nordtrack range were given the Metso quality overhaul with some small refinements and new features added.

The big drawcard, as stated by Marais, is that there is a pricing efficiency for traditional Metso customers. Customers

can expect a significant price difference when compared with the Lokotrack range. "While this is a rebranded McCloskey range, customers will be glad to know that it is now supported by a different philosophy when it comes to service and parts," says Marais.

Adrian Wood, vice president distribution, aggregates services and consumables at Metso, says there is a big difference between Metso and McCloskey's approach to business. "Metso's business is split 50/50 between capital and services, with a greater focus on being a service provider. On the other hand, McCloskey's business is

90% capital and 10% spares. The brand has traditionally not been focused on service," says Wood.

"Our target is to create a comprehensive end-to-end offering to serve diverse customer needs. Metso has traditionally been exceptionally strong in the most demanding aggregates applications, such as hard rock. Our new Metso Nordtrack range complements our offering to better address the needs of small and midsize companies and general contractors looking for the right combination of productivity, availability and dependability at an attractive price point," says Scherf.

Greater accessibility

Scherf also notes that crushing contracts in the past few years have become shorter, characterised by strict project timelines. Consequently, crushing contractors are calling for quicker turnaround times on their equipment.

The Metso Nordtrack range of mobile crushing plants makes it easy to get contracting operations up and running on time and on budget. With standard, preconfigured products and an unparalleled sales and support service from Pilot Crushtec, Nordtrack is ideal for contractors who need to meet project timelines and capacity quickly.

Wood says the delivery time for Nordtrack equipment is usually just a few weeks, on average, and it can be set up and be ready to use quickly. This is complemented by easy ordering and rapid equipment delivery.

"The Metso Nordtrack mobile product portfolio is designed to make the contracting business more productive. With standard designs for off-the-shelf availability, plug-and-play features and extensive Metso support network, the Metso Nordtrack solutions are ideal for a variety of applications, such as recycling, demolition, and the processing of sand and gravel," says Wood.

J90 and J127 in detail

Vesa Tuloisela, director, Metso Nordtrack product offering, says the J90 mobile jaw crusher offers greater crushing performance in a compact and mobile package. "With a durable, heavy duty design, the J90 gives crushing contractors the reliability they need for their crushing operations in an easily transported form," he says.

With a feed opening of 890 x 500 mm, the J90 has a hopper capacity of 2,8 m³, and multiple grizzly bar and punch plate aperture options with an easily



"The J127 is of a similar size to the Lokotrack LT120 in terms of the jaw cavity size and throughput. It doesn't necessarily fill any gap in terms of product size, but offers new possibilities from a price point perspective. There is an improved price point for consumers who cannot invest in the premium Lokotrack LT 120."

Francois Marais, director – sales & marketing at Pilot Crushtec International



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Sandro Scherf, CEO of Pilot Crushtec International



"The Metso Nordtrack mobile product portfolio is designed to make the contracting business more productive. With standard designs for off-the-shelf availability, plug-and-play features and extensive Metso support network, the Metso Nordtrack solutions are ideal for a variety of applications, such as recycling, demolition, and the processing of sand and gravel."

Adrian Wood, vice president distribution, aggregates services and consumables at Metso



"With a durable, heavy duty design, the J90 gives crushing contractors the reliability they need for their crushing operations in an easily transported form."

Vesa Tuloisela, director, Metso Nordtrack product offering

changeable cassette. The main conveyor has a belt width of 900 mm, while the optional side conveyor belt is 500 mm.

Crusher automation is standard for ease of use. The crusher also benefits from a water spraying system for efficient dust suppression as standard. It also comes with a remote controller for crawler tracks as standard and optional extra controller for other functions.

The J127 is said to be made to deliver high productivity quickly. The wide jaw crusher and two-stage feeder enable high throughput in both quarrying and recycling operations. The machine is agile and easy to move onsite with remote controlled, hydraulically driven crawler tracks. The hydraulically operated telescope side conveyor reduces material moves due to higher piling, and can be installed on either side. It is also easy to fold for transportation purposes.

With a feed opening of 1 270 x 735 mm, the J127 has a hopper capacity of 6,8 m³. The scalper has a total area of 2 120 x 1 204 mm and the bottom deck mesh is 1 200 x 1 220 mm. An ultrasonic level sensor prevents overload of the crusher rock box. 🌟



With a feed opening of 1 270 x 735 mm, the J127 has a hopper capacity of 6,8 m³.



URGENTLY REQUIRED

Yellow metal key account manager



SANY Heavy Industry Co. LTD, China's leading construction equipment manufacturer, is recruiting passionate, disciplined, self-driven and experienced people to drive its expansion in South Africa. The company is looking for candidates with experience of the yellow-metal equipment market, specifically excavators and mining dump trucks. The ideal candidate will have a minimum of three years' experience in earth moving and mining equipment sales and/or rental. The successful candidate will support SANY dealers to develop key accounts in the mining and construction sectors; deliver the company's solutions to meet customers' needs, and conduct market research for use in SANY's strategic planning.

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SLOWING WORLD TRADE, LOAD SHEDDING TAKE THEIR TOLL ON FREIGHT VOLUMES

The Ctrack Freight & Transport Index shows that freight volumes are at their weakest levels since April 2016 – down 6,8% for the year to January.

International data shows that world trade is slowing at its fastest rate since the 2008/09 recession. According to the World Trade Monitor, world trade volumes declined 1,3% on a year ago towards the end of last year.

The South African freight transport sector is exposed to the world trade cycle. Therefore, it should come as no surprise that the freight transport sector in South Africa is similarly reeling.

In addition, the China/US trade war has only been patched up by the phase one trade deal, while the breakaway of the UK from the EU is causing trade to slow in Europe.

Load shedding in December and January also played a role in South Africa's freight volume decline, while simultaneously strangling the country's retail industry.

Thankfully, fuel prices have been dropping. Oil prices are at their lowest levels in years, primarily due to the Coronavirus outbreak. Lower fuel prices helped arrest the decline in South Africa's pipeline transport volumes (down 0,8% on a year ago).

While sea transport volumes remained positive in January, the significant decline in the amount of bulk commodities handled is cause for concern.

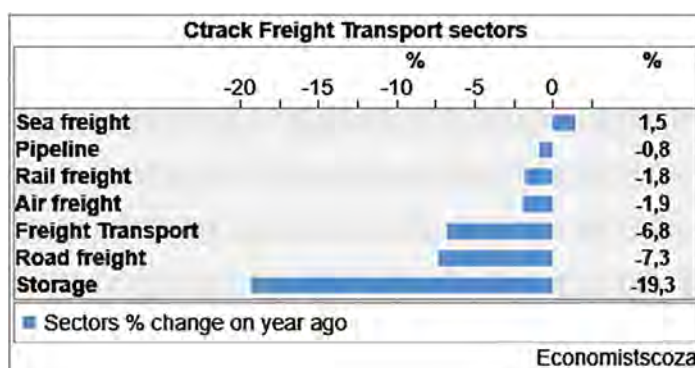
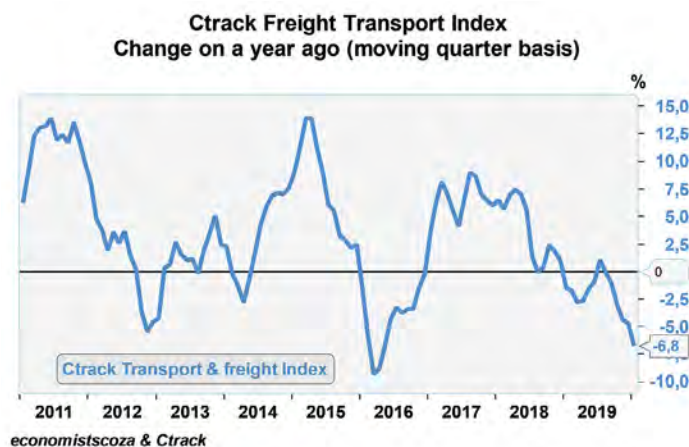
While January volumes are unlikely to reveal much about the Coronavirus impact, China has over 30-million tonnes of steel in storage. This means that future shipments may be impacted. Moreover, for the last four weeks China has been using about 60% of the usual amount of coal it uses for producing power.

Bulk goods transport is down, with the Baltic Dry Index at its lowest price in over a decade. Break bulk volumes on the other hand have fared better. This may be due to greater bulk imports that were – at least in part – for drought relief in South Africa and in neighbouring countries.

The Beira port in Mozambique is still not fully functional either and some goods are being sent to South Africa.

Sharp declines

With uncertainty created by load shedding and lower manufacturing volumes, it is no surprise that the storage and handling sub



sector has recorded the sharpest declines: minus 19,3% over the last year.

Road freight volumes have declined -7,3% although a slight increase in traffic to South Africa's northern borders has been recorded. However, internal road transport is sluggish as results from listed logistics companies reflect.

Rail freight volumes did not decline as much as road freight and this is partly due to most rail traffic being bulk export commodities. However, one should expect rail freight volumes to remain under pressure.

International air freight volumes into Africa remain positive according to IATA, although South Africa's air freight volumes are in decline. Combining both local and international air freight volumes results in a volume decline of -1,9%.

Information is key

While the Ctrack Freight & Transport Index shows declines across the board, transporters that are prepared and

knowledgeable about their markets continue to have an easier time.

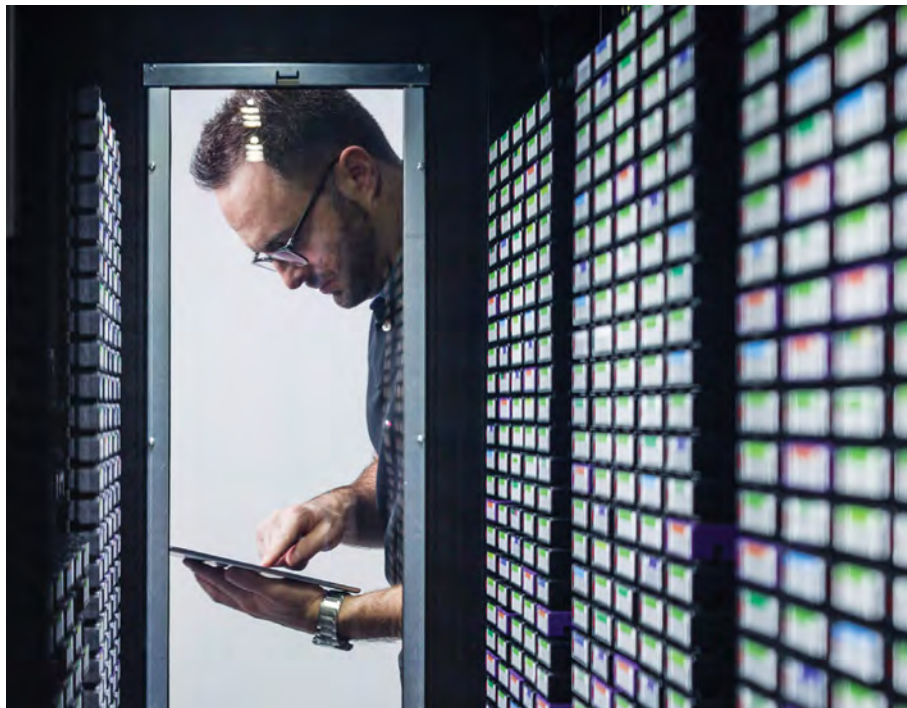
Ctrack is convinced that the best way to combat such declines is to have more information at one's disposal. Real time information leads to better efficiency, while controlling costs. The current downturn is no different and the informed and innovative firms will make better use of opportunities that come their way.

"It is unfortunate that the latest freight volume figures seen in the Ctrack Freight & Transport Index reflect such a widespread downturn," says Hein Jordt, MD of Ctrack South Africa.

"Furthermore, the true scope of the Coronavirus outbreak on world trade is difficult to fully comprehend and quantify. Apart from lower freight and transport volumes, the endemic will no doubt also contribute to widespread stockholding reductions. Still, we trust that the Index will reveal better news soon and that global and local economies begin to get back on track quickly," he concludes. 🌐

THE POWER OF DATA IN LOGISTICS

With weakening global economies placing increasing pressure on efficiency and costs, DACHSER calls for senders and logistics providers to work together to bring to logistics a level of planning certainty, efficiency and precision.



make it possible to create a scheduling forecast, increasing efficiency in all the downstream processes in the groupage network – from procuring load capacity all the way to final delivery. Earlier availability of such data would also pave the way for AI and predictive analytics applications in the future.

At DACHSER, notification is sent on the day before pickup for around 20% of industrial goods shipments in Europe. In food logistics, this figure is already as high as 67%, but even here, there is still considerable room for improvement.

To prepare for the market's growing requirements profile, DACHSER is investing in its scheduling systems and, as part of the Idea2net Short Distance 2.0 project, systematically orienting their functionalities toward the processing of early planning data. Following a comprehensive overhaul of its scheduling software tools, the company already rolled some out in 2019. More large-scale developments are set to follow in 2020 and beyond.

Expand and automate

The aim is to expand, automate and simplify data-driven scheduling. This way, the inbound branch receives information about when incoming goods are expected from the delivering branch in the late afternoon as opposed to midnight, as was the case before. The software generates an advance, provisional schedule at the push of a button, which the dispatcher can optimise. An application that provides information about opening hours, delivery conditions, and delivery restrictions is also linked to the scheduling tool.

Starting in 2020, DACHSER will introduce handheld devices for drivers, which will further accelerate data collection and transfer. As a result, drivers will also become part of the information and planning process.

However, faster notifications are only one part of the equation and better data quality is key: "Digitised systems cannot generate optimum results if the data you feed them is incomplete or contains errors," says Schilling. "If we want to increase planning transparency and efficiency, logistics providers and customers also need to work on the quality of data." 🔄

Michael Schilling, COO, road logistics at DACHSER, says faster and better data ultimately benefits the entire supply chain, making the flow of goods and information more predictable, efficient, and sustainable in times of scarce resources.

With weakening global economies placing increasing pressure on efficiency and costs, Schilling calls for senders and logistics providers to work together to bring to logistics a level of planning certainty, efficiency and precision.

"To ensure a reliable flow of goods and uninterrupted supply chains, Industry 4.0 needs Logistics 4.0, and vice versa," he says.

In logistics, shipment information can be almost as important as the goods themselves. On the part of the logistics provider, core systems for transport management, paired with special planning tools, provide dispatchers with the information they need. Beyond systems, the dispatchers' personal experience, own expertise and reliable contacts play a key role in the day-to-day planning of deliveries and collections.

"While the logistics industry continues to optimise processes and increase efficiency to an extent that is unparalleled in most other industries, this approach no longer lends itself to overcoming additional challenges like shortages of drivers and loading space, pronounced seasonal peaks, restricted access to city centres and increasing demands for sustainability," says Schilling.

He believes the key to accurate quantity planning and control lies at the very beginning of the logistics process chain – in the shipment data which the sender transmits to their logistics partner.

"In the future, this data will have to be made available digitally and at an earlier stage in the chain than before. DACHSER offers a range of flexible options for connecting to the relevant interfaces to make this data transfer as straightforward as possible."

A new standard: Sender notification the day before forwarding

"If notification on the day before forwarding was made a standard practice, it would allow companies and logistics providers to harness a great deal of untapped efficiency and sustainability potential."

Having data available the day prior to forwarding triggers a notification that would

FOUR IMPORTANT QUESTIONS TO ASK YOURSELF WHEN CHOOSING A NEW EXCAVATOR

In an attempt to maximise productivity, it could be tempting to opt for the biggest machine with the biggest bucket possible – but there is much more to it than that. Here are four essential questions to ask yourself when choosing the size of your new excavator.



While it is important to match the size of the excavator to the demands of the job, it's also important to consider how mobile you need the machine to be.

1. What kind of material will I be digging?

The biggest bucket is not necessarily going to move the most material in the least amount of time if the material is dense and heavy. To try to fill a large bucket with heavy material that weighs more than the lifting capacity of the machine would be dangerous to the operator and others on the site – and damaging to the machine. Heavy rock will always require a smaller bucket than soft soil for stability, safety and efficiency.

2. How will I transport it?

While it is important to match the size of the excavator to the demands of the job, it's also important to consider how mobile you need the machine to be. What size trucks and trailers does your company have and are there are local hauling restrictions? If you are investing in a large excavator to operate in a quarry, you are unlikely to need to move it much at all.

In which case, going without a removable counterweight could save on your purchase price (although it would affect the resale value). If you are working in a city in narrow streets or across highways, you may need to downsize for the tighter spaces or consider a short-swing-radius wheeled excavator.

3. What's my reach requirement?

Some contractors may prefer a shorter arm to increase breakout forces and bucket sizes but operators can feel uncomfortable being so close to a truck when dumping. Likewise, while a shorter arm can increase bucket capacity, operators may not be able to reach the required digging depth. It's important to consider these issues beforehand as it costs

time and money to adjust the arm.

4. What track width do I need for stability?

If you are working in a quarry where the material is hard and there are lots of big rocks, narrow tracks are preferable because the wider the pad, the easier it is to bend. If you are working in soft sand, however, you'll need the widest pad possible to stop the excavator from sinking.

When choosing a new excavator, it's important to think about all these scenarios as well as weight and horsepower – and get your operators involved. That way you will be sure to have a machine that's right for the job and that your personnel feel comfortable operating – without you having to go back and make unexpected and potentially costly modifications. 🌀

Volvo Trucks launches new generation heavy-duty trucks

Volvo Trucks is introducing four new trucks, with a strong focus on the driver, safety and productivity. "We are really proud of this big forward-looking investment. Our aim is to be our customers' best business partner by making them even more competitive and help them attract the best drivers in an increasingly tough market," says Roger Alm, President Volvo Trucks. The four heavy-duty trucks – Volvo FH, FH16, FM and FMX – represent about two thirds of Volvo Trucks' deliveries.

An expected growing demand for transport is putting pressure on the availability of skilled drivers worldwide. In Europe, for example, estimates show that around 20% of all driver jobs are vacant. To help customers recruit and retain the best drivers, Volvo Trucks has focused strongly on developing the new trucks to make them safer, more efficient and more attractive working tools for qualified drivers.

"Drivers who handle their truck safely and efficiently are an invaluable asset to any transport company. Responsible driving behaviour can help reduce CO₂ emissions and fuel costs, as well as helping reduce the risk of accidents, injury and unplanned downtime. Our new trucks will help drivers



The various truck models in Volvo Trucks' range are available with many different cab models and can be optimised for a wide range of applications.

work even more safely and productively and give our customers stronger arguments when competing to attract the best drivers," adds Alm.

The various truck models in Volvo Trucks' range are available with many different cab models and can be optimised for a wide range of applications. In long-haul trucks, the cab is often the driver's second home. In regional transport trucks it often serves as a mobile office, while in construction the trucks are robust, practical work tools. Therefore, visibility, comfort, ergonomics, noise level, manoeuvrability and safety were key focal points when developing all the new truck models. The truck exterior has also been upgraded to reflect the new trucks' properties and create an attractive overall design.

The new Volvo FM and Volvo FMX have a brand new cab, as well as many of the same instrument display functions as their larger Volvo counterparts. Their interior volume has been increased by up to one cubic meter, providing better comfort and more working room. The visibility is now even better due to larger windows, a lowered door line and new mirrors. 🌟

Mixed start for commercial vehicle sales in 2020

The South African commercial vehicle market was off to a mixed start in 2020, recording a 4,4% year-on-year decline in overall sales in January.

According to the latest combined results released by the National Association of Automobile Manufacturers of South Africa (Naamsa); Associated Motor Holdings (AMH) and Amalgamated Automobile Distributors (AAD), 1 568 new trucks and buses were sold during January.

When compared to the first month of 2019, sales were down 8% in the medium commercial vehicle (MCV) segment, to end-January 2020 with 503 new trucks sold. Using the same comparison, heavy commercial vehicle (HCV) sales declined by 14,5% to 277 units. The extra-heavy commercial vehicle (EHCV) segment experienced an upturn in sales, increasing by 6,2% to 758 units. Bus sales continued to struggle, with a significant 45,5% decline to 30 units sold during January.

"We have certainly seen an interesting start to the local commercial vehicle market in January 2020," says Filip van den Heede, MD of UD Trucks Southern Africa.

"The sharp declines in both MCV and HCV sales are an indication that the fundamen-



The extra-heavy commercial vehicle segment experienced an upturn in sales, increasing by 6,2% to 758 units.

tals are under pressure, likely an indicator that the country's economy is not yet seeing a recovery to growth. We hope that the extra-heavy commercial vehicle trend in January can stabilise and gradually counter

the other segments."

He says the growth in the EHCV market can be attributed to some recovery in the movement of commodities, which drove new vehicle sales. 🌟

WearCheck expands in West Africa

South African condition monitoring specialist WearCheck has upgraded its laboratory in Tarkwa, Ghana into a modern testing centre which can now conduct transformer oil, coolant and fuel analysis, among a host of additional services, as well as traditional used oil analysis.

Tarkwa's new laboratory, now housed in a building a block away from the original converted shipping container, is kitted out with various new instruments that enable extensive testing, and additional laboratory technicians have been employed.

The company also opened a second laboratory in Ghana recently, providing oil analysis and reliability solutions services to industries in the Ashanti region, in Kumasi.

The developments by are a direct result of increased demand for condition monitoring services in Ghana. This brings to 17 the number of laboratories operated by WearCheck, which was founded over 40 years ago in Durban, South Africa, and today processes in excess of 800 000 used oil samples annually.

Since 2013, WearCheck Tarkwa has successfully serviced Ghanaian mining operations and other industries, conducting



The company opened a second laboratory in Ghana recently, providing oil analysis and reliability solutions services to industries in the Ashanti region, in Kumasi.

the scientific analysis of used oil and other condition monitoring techniques, all of which reduce maintenance costs and boost productivity by improving equipment reliability and availability.

"The industries in Ghana have welcomed WearCheck with open arms, for which we are very grateful," says MD Neil Robinson. "The positive feedback from our Ghanaian customers has inspired us to expand into the Ashanti area to meet the local need for our laboratory services."

WearCheck is said to be the only condition monitoring company in Africa with ISO 9001 quality certification and ISO 14001 certification for its environmental management programme, as well as ISO 17025 accreditation for its laboratory-centric quality management programme.

WearCheck has a network of laboratories spanning nine countries on the continent and beyond, in Dubai and India. Laboratories are situated in the DRC, Mozambique, Namibia, Zambia and Zimbabwe. 🌐

Multotec filter press to the rescue

A Limpopo chrome mine faced various risks in disposing of its tailings and called Multotec for a solution.

The chrome operation was aware of the challenges that a traditional tailings storage facility (TSF) could create, according to Multotec Process Equipment senior process engineer Khathutshelo Mutshinyalo. These include the large footprint of a tailings dam, the expense of lining the tailings dam and the environmental and social impacts.

"The mine management was keen to conserve scarce water resources by avoiding evaporation," Mutshinyalo says. "They also wanted to prevent any potential groundwater contamination that might result from solution seepage. There was also the local community to consider, to which a normal TSF could present a risk."

Multotec was able to explore the full range of its dewatering solutions before recommending the most suitable one for this application. The filter press technology was the chosen option, as it was shown to meet the duty requirements in the most cost-effective manner. As a well-proven mechanical dewatering strategy, the filter press was able to



Multotec's dewatering solutions facilitate short cycle times, less wear on consumables and lower power consumption.

immediately recover about 80% of the clean water in the slurry.

"The cake that is left from the tailings after water removal is then easily moved by conveyor to a dump area," says Mutshinyalo. "This dump is much simpler and safer to manage than a tailings dam."

The solution facilitates short cycle times, less wear on consumables and lower power consumption. The cakes are also easily released from the cloth and leave little residue behind on the cloth. He highlights that the process of reaching the selected solution was driv-

en by thorough investigation, extensive test work and many years of experience in the field. It always begins with a detailed understanding of the conditions that exist at the site, as well as the customer's priorities.

"With the support of the research team at our testing facilities in Spartan, could test the behaviour of the customer's slurry samples with various Multotec solutions. This allowed us to confirm not only the best technology for the application, but also to innovate our equipment for optimal results." 🌐

Cummins Zambia commissions new coolant plant in Kitwe

Cummins Zambia has completed a coolant plant project in Kitwe on the Copperbelt that received approval from the Zambia Environmental Management Agency (ZEMA) in 2019. The “plug-and-play” plant will produce two types of coolant, namely ES compleat Hybrid (Blue) and ES compleat OAT (Red).

PLC-driven and automated, the plant has the capability to perform batch correction. It has a blending capacity of around 1 600 ℓ over two hours, including quality testing. The system has two 2 500-ℓ tanks for product storage.

Cummins aftermarket leader (Zambia) John Kambing’a says that, while the plant was originally scheduled for completion within six months in 2018, it took about a year to complete due to delivery and manufacturing logistics, in addition to stringent ZEMA approval reports. The main contractor was CP Engineering, with a Cummins Filtration team overseeing the project from start to finish.

Cummins Filtration built the plant and shipped it to Zambia, where it was installed by a local contractor under the supervision of the project team. The Cummins Filtration team from South Africa also played a key role in commissioning the plant.

“It is a requirement in Zambia to conduct an impact as-

essment for any project being undertaken. Therefore, the ZEMA approval was necessary to ensure that the coolant plant had no impact on the environment or the surrounding community,” says Kambing’a.

This is also in line with Cummins’s PLANET 2050 strategy, focused on addressing climate change and air emissions using natural resources in the most sustainable way, and improving communities.

To date, Cummins Zambia’s main coolant customer has been First Quantum Minerals (FQM), a major copper producer in the region. The new plant will allow Cummins Zambia to supply coolant to other customers in different packages.

This, says Kambing’a, “will grow our filtration sales in Zambia and allow us to serve other customers. It will also take care of our counter-sales customers. Other Cummins distributors and dealers wanting to take advantage of our cost-competitiveness will also be welcomed”.

The main benefits of the new coolant plant are that customers will not be restricted to obtain the products only in totes, but can request different packages according to their specific requirements. Customers will also have the option of bulk supply, which will drastically reduce their storage challenges, as they would have access to sufficient product as and when required. Kambing’a says long lead times will also be eliminated.

Switching to in-house coolant production at Cummins Zambia will reduce import costs significantly, allowing the company to pass these savings to customers.

First autonomous haulage fleet for the gold mining industry

Caterpillar has reached an agreement with Newmont to supply and support Cat autonomous trucks and the MineStar Command for hauling system for the Boddington gold mine in Western Australia. The fleet of autonomous Cat 793F mining trucks will be fully operational in 2021 and will be the first autonomous haulage system working in an open pit gold mine.

“We are pleased to work with Newmont in implementing autonomous haulage at Boddington,” says Denise Johnson, group president Resource Industries, Caterpillar Inc. “Command for hauling has shown its ability to enhance safety, optimise production and lower costs at sites around the world. The Caterpillar team is eager to demonstrate these positive results in gold mining.”

Caterpillar will work with WesTrac, the regional Cat dealer, to manage logistics of mining truck delivery and commissioning. WesTrac will also play a key role in implementing technology solutions and will work to leverage its autonomous technology training facility being constructed in Collie, Western Australia.

Cat autonomous trucks have proven reliability and durability in the autonomous system, which creates higher truck utilisation and increased production rates. There are now 275 mining trucks operating autonomously via

MineStar Command for hauling, and those trucks have moved more than 1,9-billion tonnes since 2013. 🌐



The fleet of autonomous Cat 793F mining trucks will be fully operational in 2021.

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Volvo CE shifts to HVO fuel

The Volvo CE Customer Centre in Eskilstuna, Sweden, is paving the way for a sustainable future by running its demonstration machines on a renewable fuel, hydrogen-treated vegetable oil (HVO).

HVO is a form of renewable synthetic diesel. Forming a small part in the company's journey towards a more sustainable future, HVO produces barely any trace of CO₂. It's a clean form of fuel, while also remaining in-use performance comparable to regular diesel.

Unlike some other biofuels, HVO isn't particularly sensitive to low or high temperatures, or to exposure to sunlight. Also, due to the use of hydrogen in the production process, HVO has an impressive shelf life, compared to other biodiesel.

Using HVO means that Volvo can significantly reduce its CO₂ emissions at the customer centre, as well as demonstrating to guests how well the fuel works in practice.

A conversation with Karl Serneberg, director of marketing, Volvo CE, shed light

on Volvo's eco-focused decision. "Not only does the fuel-in-use have a very low carbon footprint, we also looked at HVO from a total supply chain perspective, and source it from the closest possible producer, making the overall environmental impact even more positive," he says.

A key aspect of why HVO wasn't implemented sooner is due to availability. HVO is a relatively new fuel that wasn't widely available until recently, so establishing a consistent supply was paramount before proceeding with a full implementation.

"Volvo CE approves all of our machines to run on HVO. No special modifications to the engine are required, and they work just as efficiently on HVO as they do with regular diesel," says Serneberg.

"We have been using HVO at the customer centre since last summer. Before we could do that there were some practicalities to get sorted, for instance cleaning the oil tanks. Then, the first delivery of HVO was at the end of August, and we have been suc-



The use of HVO at the Volvo CE Customer Centre is more than an 'eco trial' for Volvo CE.

cessfully running our machines at the centre on HVO ever since."

HVO is now more easily accessible for customers to source, and the difference in price compared to normal diesel is dropping. The fuel uses the same type of tanks and pumps, making the switch to this fuel almost unnoticeable to the customer. 🌱

Expanded focus for bauma CONEXPO Africa 2021

bauma CONEXPO AFRICA, sub-Saharan Africa's trade fair for construction, building material, mining, agriculture and forestry machines, machinery and vehicles will be back in South Africa in 2021, with a new look and expanded focus, to deliver cross-sector growth opportunities in the region.

bauma CONEXPO AFRICA will now also feature agricultural and forestry equipment and machinery. This will give government bodies, developers, contractors, industry associations, financiers and other sector stakeholders a one-stop overview of the latest services and solutions available across the infrastructure development, construction, forestry and agriculture value chain.

bauma CONEXPO AFRICA is one of Messe München's six international bauma events, and is modelled on bauma in Munich, in collaboration with AEM, organiser of CONEXPO-CON/AGG. bauma attracts over 620 000 international visitors while CONEXPO-CON/AGG is the leading industry exhibition in the North American market. As a gateway for international companies to the African market and for African enterprises to the global market, bauma CONEXPO AFRICA attracted around 15 000 visitors and exhibitors in 2018 and expects these numbers to increase significantly in 2021.

"Africa's construction and infrastructure development sectors are facing economic challenges at the moment," says Suzette Scheepers, CEO of Messe Muenchen South

Africa. "Therefore, we engaged industry leaders to discuss ways in which bauma CONEXPO AFRICA could support industry growth more effectively. As a result of their input, we have re-engineered this key event to foster greater cross-border collaboration and highlight business growth opportunities, and we will feature solutions that enable businesses to operate smarter and more cost-effectively. We have also revisited our sponsorship and exhibitor packages to deliver significant additional value."

With an expanded African focus, bauma CONEXPO AFRICA plans to host buyer and diplomatic delegations from across sub-Saharan Africa, and to actively foster interac-

tion and business exchange between the region's governments and private sector.

Among the solutions to be on show will be agricultural machinery and tractors, machinery and plants to produce building material, construction and mining equipment, engineering services, occupational safety products and services, plant hire services, quantity surveying technologies and forestry machinery.

bauma CONEXPO AFRICA will be staged at the Gallagher Convention Centre in Midrand from 13 to 16 October 2021. Discounted early-bird exhibitor packages and comprehensive new sponsorship packages are now available. 🌱



bauma CONEXPO AFRICA 2021 will be held at the Gallagher Convention Centre in Midrand from 13 to 16 October.

Wirtgen to launch large milling machines at ConExpo

With the successful launch of its new generation of large milling machines, Wirtgen has made lasting improvements to the process of milling in terms of performance and efficiency. The specialist in cold milling machines has now added the W 220 Fi and W 250 Fi flagship models to its intelligent F Series. They will celebrate their world premiere at Conexpo-Con/Agg 2020.

The new W 220 Fi and W 250 Fi large milling machines serve a wide range of applications – from surface course rehabilitation and fine milling work to complete removal of the surface. Various drive concepts are available to ensure maximum, optimal milling performance. For example, the W 220 Fi is equipped with a two-speed Dual Shift powershift transmission, while the W 250 Fi has an Active Dual Power dual engine drive. With an engine power of 801 HP/812 PS (W 220 Fi) and 1,010 HP/1,024 PS (W 250 Fi) respectively, the two flagship models are powerful.

Like the successful F Series models W 200 Fi, W 207 Fi and W 210 Fi, the W 220 Fi and W 250 Fi also set new standards in terms of milling performance and machine efficiency. In the automatic mode, the Mill Assist standard assistance system provides the optimal

balance between performance and operating costs. This not only improves milling performance, but also reduces diesel, water, and pick consumption, as well as CO₂ emissions. The machine operator can also preselect a working strategy from “Cost-optimised”, “Performance-optimised”, or “Milling texture quality”. For example, it is possible to define the required milling texture quality on a scale of 1 (coarse) to 10 (very fine) in advance at the touch of a button.

Mill Assist also automatically controls the two-speed Dual Shift powershift transmission. Together with the diesel engine, the intelligent control of the two-speed powershift transmission extends both the upper and lower range of possible milling drum speeds. At lower speeds, fuel and pick wear can be significantly reduced. At higher speeds, high milling pattern quality is ensured even in the case of high area performances.

With the Active Dual Power dual engine drive of the W 250 Fi, depending on the project situation and the pre-selected working strategy, Mill Assist then automatically controls just one or both motors. In addition, the engines operate efficiently at optimally adapted speeds. This significantly reduces



The W250 Fi is intended for high milling performance.

costs for diesel and cutting tools.

The Wirtgen Performance Tracker calculates the precise surface milling performance, milling volume, and consumption values for the machine. All-important performance and consumption data are displayed on the operator's platform in real time for the milling machine operator and are also sent to the machine operator by e-mail in an automatically generated report immediately after completion of the milling work. 🌐

Volvo CE electric machines now available for pre-booking

Volvo Construction Equipment (Volvo CE) is launching Volvo Group's first machine retail e-commerce tool. The online portal will give customers the opportunity to get in line for the first time to pre-book one of Volvo's new electric compact machines.

Signalling the future for construction, the new ECR25 Electric compact excavator and L25 Electric compact wheel loader, benefit from zero exhaust emissions and low noise levels and vibrations, making them the perfect accompaniment for inner city jobsites – in fact any sensitive work environment.

Customers will also benefit from lower maintenance levels, a more peaceful operation and the ability to keep in line with increased environmental regulations. For the first time since their unveiling last year, customers can now pre-book their electric machines by signing up to the company's pre-booking tool.

“We are always looking for ways to improve the customer experience, streamline our processes and make use of new technologies. So what better time to announce an innovative new sales platform than with the market launch of our electric machines. We look forward to hearing what our customers think,” says Melker Jernberg, Volvo CE President.



For the first time since their unveiling last year, customers can now pre-book their electric machines by signing up to the company's pre-booking tool.

By registering on the pre-booking tool, which opened on February 25 across the key markets of France, Germany, Great Britain, The Netherlands and Norway, and will be expanded to other markets in the near future, customers are reserving a place in the production queue for the electric machines. After, customers will be alerted if they have been selected to place an actual order for the machines.

Built to expand the opportunities for customers to buy one of these machines and to broaden the way these machines are used by customers, the online portal is being handled in collaboration with local dealers. Volvo Financial Services, the global financial services provider for the Volvo Group,

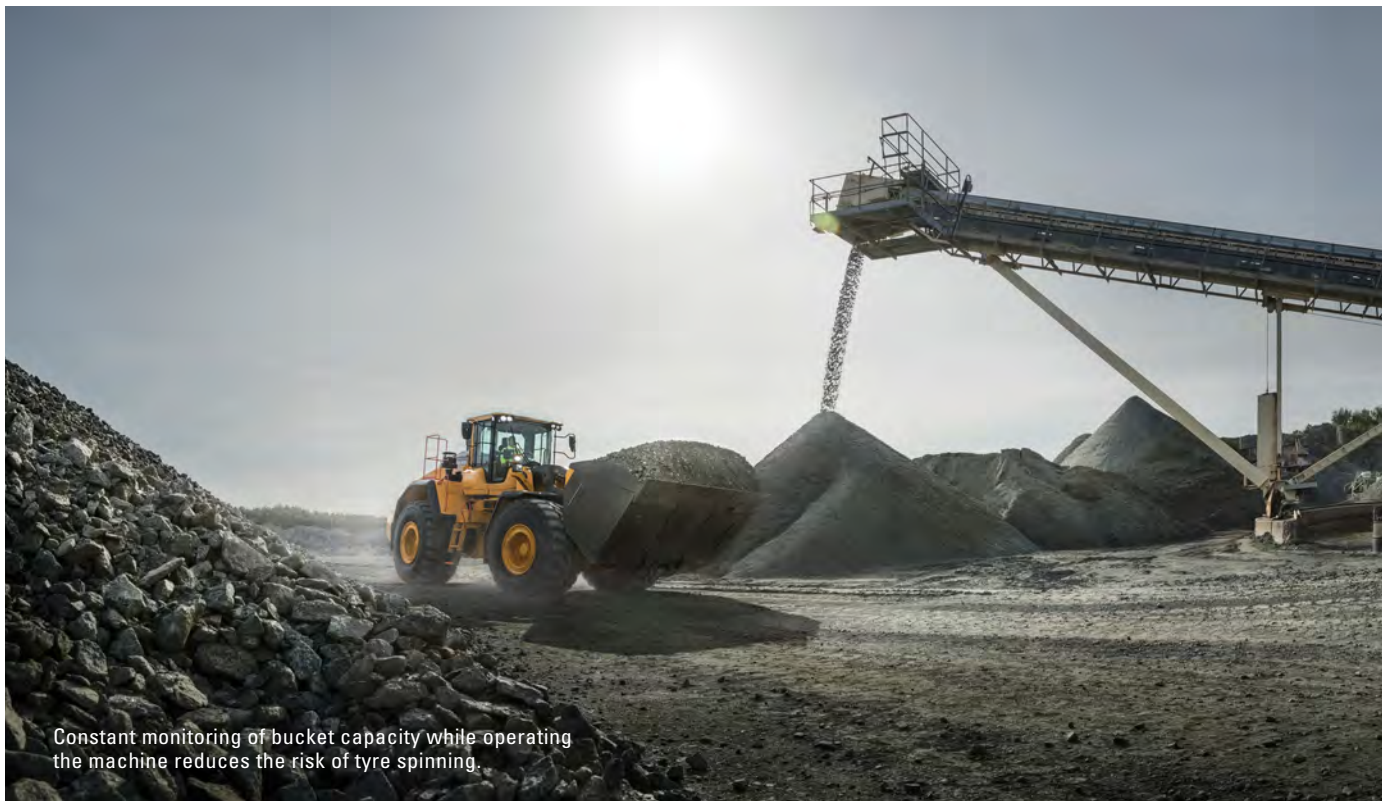
supports the purchase of these electric machines by offering flexible finance solutions.

Volvo CE marked its first commercial electric offering with the launch of an electromobility awareness raising campaign in February, which highlighted the technology's many societal benefits. The Add Silence campaign centres around one of the most significant – and sometimes overlooked – advantages of electric construction machines: a reduction in damaging noise pollution.

“When talking about harmful emissions, it's easy to focus on CO₂ alone. But research shows that noise is equally important. We need to make concerted efforts to tackle both of these emissions if we want to build a more sustainable tomorrow,” concludes Jernberg. 🌐

FOUR QUICK TIPS TO PROLONG WHEEL LOADER LIFE

Through careful daily inspections and maintenance, wheel loader operators can boost the uptime, productivity and service life of their machine.



1. Complete daily pre-start checks

Before use, a thorough check of the machine and the ground it has been parked on will reveal if any damage has occurred or if any vital fluid has leaked. This will also give the operator the opportunity to check tire pressure before further wear occurs, leading to fewer tire changes.

Checks such as fan belt wear and tension, cleanliness of the air filtration system, engine oil, grease, and coolant level can also prevent serious damage occurring and parts being replaced in the future. The easily serviceable nature of Volvo wheel loaders means that addressing smaller issues sooner rather than later is simple and affordable. By limiting further damage to the machine, operators can eliminate the need for replacement parts and prolong the uptime of their current model.

2. Warm up the machine

Start the engine and leave it running at low idling for five minutes (10 minutes at below -15°C). Turn the mode selector switch to working mode (W) and increase

the speed to approximately 1 200 rpm. Run the bucket cylinders piston rod to the outer end position and at the same time, run the dipper arm out and in. Check on the display unit if the bar graph for the oil temperature is green.

3. Operate carefully

Constant monitoring of bucket capacity while operating the machinery reduces the risk of tyre spinning (which will cause new tyres to be necessary), slower cycle times and slower production rates. Additionally, attendance to equipment and gauges will allow the operator to prevent further disruptions to work.

4. Establish a cool-down routine

A comprehensive cool-down routine will also aid the long term function of Volvo wheel loaders, guaranteeing their use for future projects and limiting environmental impact. Operators should always ensure that the machine is parked on level ground with a lowered bucket and the parking brake is applied to preserve tire traction.

While the engine is idle, to allow for the turbo charger to cool, operators should record the current machine hours against the machine hours taken at the beginning of the work day. By doing this the operator ensures the machine is brought in for a service on time, rather than when serious problems occur. The DEF and DEF tank should be kept full to minimise condensation and prevent issues arising that may lead to replacements. Operators should hose down the outside of the machine to preserve the paint and prevent any corrosive materials from compromising the body.

While well-trained operators are crucial to ensuring daily upkeep of the machine, Volvo CE and its network of dealers also play their part. Volvo wheel loaders are designed with ease of service in mind to guarantee minimal downtime and Volvo CE provides services that allow owners and operators to get the most out of their machines. Volvo ACTIVE CARE, for example, the 24/7/365 active machine monitoring and reporting service, can help identify and diagnose any potential issues in real-time, before they grow into a larger issue. 🌟

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