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RIGID HAULERS: Improved performance and fuel efficiency for lower cost per tonne

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www.crown.co.za

Printed by Tandym Print

The views expressed in this publication are not necessarily those of the editor or the publisher.



Total circulation Q3 2020: 7 109



<https://crown.co.za/capital-equipment-news>

TIME TO INVEST IN SOLID PREVENTIVE MAINTENANCE REGIMES

Despite projections showing that 2021 is likely going to be a better year than 2020, we are definitely not out of the woods yet as far as the COVID-19 influenced economic challenges are concerned. In such a challenging environment where investments in new capital equipment may be out of reach for many, how can equipment owners improve equipment longevity? For me, preventive maintenance is an important part of equipment ownership.

The term 'if it's not broken, don't fix it' still applies to many industries. However, due to increasing costs of downtime, the benefits of preventive maintenance cannot be reiterated enough. By following a regular preventive maintenance

regime, possible issues can be nipped in the bud before they cause serious harm. Wear and tear can also result in reduced machine efficiency, thus preventive maintenance ensures optimal working conditions and conserves the lifespan of the equipment.

Planned preventive maintenance may cause minimal hindrance to production, but that is nothing compared to actual downtime caused by an unplanned breakdown. Because it is planned, production can propose the optimal time and can factor in the downtime. Preventive maintenance procedures generally take less time than emergency repairs and replacements.

In my view, it is time for equipment owners to invest in preventive maintenance. In fact, a report by data and analytics company, GlobalData, finds that predictive maintenance is an investment priority for miners in the next two years. The drive to improve productivity and reduce downtime will lead to further investment by mining companies, large and small, in predictive maintenance for both plant and mobile equipment in the next two years.

A recent mine-site survey by the company revealed that, while over three quarters of mines had already made at least minor investments into predictive maintenance, 48% of miners surveyed expected either to invest in the technology for the first time or invest further in the coming two years. Further, 43% expected to invest in predictive maintenance for mobile machinery over the same period.

Controlling cost and expenses has always been the biggest challenge faced by many maintenance managers. In a world where there is pressure to do more with less, technology is changing the face of preventive maintenance.

Traditionally, equipment maintenance has been viewed as a costly exercise. Today it is increasingly characterised by digital services such as telemetry solutions and data analytics, which have greatly reduced the cost of this exercise.

This is in line with the digital trend sweeping across the industry globally. Digital developments are progressing rapidly, and the Fourth Industrial Revolution (4IR) is starting to take shape, with interconnected machines communicating and able to make decisions and integrate with their environment.

Investment in predictive maintenance is critical for capital equipment owners looking to improve productivity and reduce expensive downtime. The ability of predictive maintenance to collect real-time data from sensors on equipment and use data analytics to detect potential problems before they lead to machine failure not only ensures continued productivity of critical operations, but saves money in parts and labour and can even extend the life of equipment, so the benefits of this technology are considerable.

That said, preventive maintenance is not always the right option for every piece of equipment. Before you implement a preventive maintenance plan, be sure you have a good understanding of which assets and processes will benefit most. According to IBM, as much as 50% of the money you spend creating a preventive maintenance plan can be wasted.

This is primarily because companies are focusing on maintenance tasks that do not prevent failure. It's important to begin by identifying critical assets that have particular failure modes, which can be prevented by a good preventive maintenance regime. Simply checking all equipment and performing maintenance tasks alone will not necessarily improve reliability or performance.

The bottom line is that a preventive maintenance programme can be an excellent way to help a company reduce breakdowns, minimise downtime, improve efficiency and lengthen equipment lifespan. However, like with any programme, it's important to understand what types of situations and what kind of equipment can benefit the most from a solid preventive maintenance regime. 🌟



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SANY EXCAVATORS FOR AN EMERGENCY WATER PIPELINE PROJECT IN BOTSWANA

In one of the landmark deals since taking over the dealership of SANY earthmoving equipment in South Africa some four years ago, Goscor Earthmoving Equipment has supplied an urgent order of eight SANY SY335C excavators to a contractor undertaking a fast-tracked, emergency water pipeline project that will bring relief to water stressed areas within the Greater Gaborone Corridor of Botswana. By *Munesu Shoko*.

Having initially made contact with Goscor Earthmoving Equipment (GEM) in May 2020, Khato Civils Botswana, a subsidiary of Johannesburg headquartered Khato Civils, placed an urgent order for eight SANY SY335C 35-tonne excavators for an emergency water project in Botswana. The deal represented GEM's first major SANY sale outside South Africa and Lesotho.

The Khato Civils/South Zambezi/Evolution

Engineering JV was appointed by the Water Utilities Corporation in Botswana to design and construct a transmission water pipeline of approximately 100 km from Masama Wellfields to the Mmamashia Water Treatment Plant in Gaborone. The pipeline, declared an emergency project by the Botswana government, will convey 64 mℓ of borehole water pumped from Masama East and West Wellfields.

The pipeline – which comprises 1,15 km x 700 mm nominal diameter and 81,9 km

x 1 000 mm nominal diameter spigot and socketed mild (low carbon) steel pipes – will ease water scarcity in heavily water stressed areas within the Greater Gaborone Corridor, including Lobatse/Barolong, Thamaga/Moshupa/Kanye, Molepolole and Mochudi/Bokaa catchment areas.

The Masama-Mmamashia pipeline is regarded as a critical piece of infrastructure in the provision of reliable water supply to the heavily distressed southern part of Botswana, which includes the nerve

QUICK TAKE



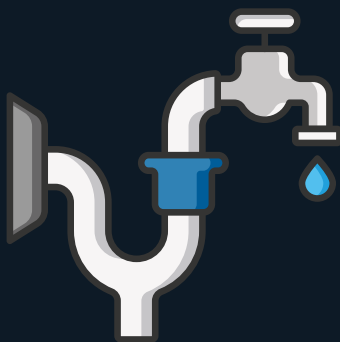
Goscor Earthmoving Equipment has supplied an urgent order for eight SANY SY335C excavators to a Botswana-based contractor undertaking a fast-tracked, emergency water pipeline project



Eight SANY SY335C excavators have been deployed to work at an emergency water pipeline project in Botswana.



Due to the fast-tracked nature of the project, GEM supplied the machines within five weeks of order.



The Khato Civils/South Zambezi/Evolution Engineering JV was appointed by the Water Utilities Corporation in Botswana to design and construct a transmission water pipeline of about 100 km from Masama Wellfields to the Mmamashia Water Treatment Plant in Gaborone



Given the urgent and stringent nature of the timeline, Khato Civils needed an excavator supplier that could meet a very short lead time for delivery



The contractor placed an order for eight SANY SY335C excavators in mid-October, and GEM was able to deliver the machines by mid-November 2020

centre of the country's national economy, the Greater Gaborone. Due to the urgency of water supply required in the area, the design and implementation of the project will be fast-tracked and completed within 12 months of the award of the contract. The pipeline project commenced in May 2020, with a completion date set for May 2021.

Given the urgent and stringent nature of the timeline, Khato Civils needed an excavator supplier that could meet a short lead time for delivery. GEM operations

manager Murray Leith explains that the SANY dealer in South Africa, in partnership with its principal, generally keeps a huge inventory of machines in the country, which allowed GEM to supply the eight SANY SY335C excavators within five weeks of order.

"Due to the fast tracked nature of the project, we were aware of the urgency with which Khato Civils required the machines on site. We initially had conversations with them in May 2020 when they commenced

work on the project, but they were at the time not aware of the range of machines they required. Having established their needs as the project progressed, they got in touch with us again in October 2020 and placed an order for eight 35-t SANY SY335C excavators. What really appealed to the customer was our ability to supply the machines within a very short space of time. They placed the order in mid-October, and we were able to deliver the machines by mid-November," explains Leith.



“Our target is to be among the top three earthmoving equipment brands in South Africa in the next three years. We are also targeting to be the No. 1 service brand in the country.”

Samuel Zhang, GM SANY Southern Africa



“The 35-t SANY SY335C is the most popular model in our excavator range, mainly due to its versatility. It can be deployed across applications, including civil and general construction, as well as mining.”

Murray Leith, operations manager at Goscor Earthmoving Equipment

TALKING POINTS



The machines were delivered to site in November 2020.

Machines proving themselves

The machines were delivered to site in Botswana in November last year, and according to Leith, they have proven themselves, offering maximum uptime on a project where downtime is out of question. The machines are being used to re-excavate the trenches, place the pipeline sections in the trenches and backfill the excavated material.

Having initially trenched using specialised tescmic trenchers, the contractor backfilled the trenches with excavated material to avoid damage to the trenches before laying the pipe. The eight excavators are deployed to take the loose material out of the ground, as well as lowering the pipeline sections in the trench, before backfilling the material over the pipe.

Four of the eight machines were supplied with standard 1,5 m³ rock buckets. These have been deployed to work on a 5 km rocky segment of the pipeline. The other four have been equipped with larger 1,8 m³ buckets, and have been deployed to work on the remaining 95 km segment of the project with softer ground conditions. Bigger buckets ultimately speed up the excavation process in soft ground conditions, says Leith.

The eight excavators were sold with an extended 36-month/ 8 000-hour warranty, an upgrade of the previously standard 18-month/ 3 000-hour warranty. This, says Leith, is

testimony to the confidence SANY and GEM have in the quality and durability of the product. As part of the deal, GEM also deployed its operator trainer to site to train all operators on the new machines. “The client was grateful of the operator training we provided, given that operators can cause serious damage to machines if they are not properly trained. Properly trained operators are also central to the productivity on site,” says Leith.

Why SANY SY335C?

The 35-t SANY SY335C excavator, says Leith, is the most popular excavator model in GEM’s SANY excavator range. GEM offers a full line of SANY excavators, ranging from 14 t to 75 t. The range, however, will be joined by a 100 t class offering this year. Together with the SYL956 front-end loader, the 35-t SANY SY335C excavator is the top selling product in the SANY earthmoving range in South Africa.

“The 35-t SANY SY335C is the most popular model in our excavator range, mainly due to the fact that it’s a versatile machine that can be deployed across applications, including civil and general construction, as well as mining,” explains Leith.

One of the major selling points of the machine, adds Leith, is that it runs world-class components, for example, the Isuzu engine and the Kawasaki hydraulic system. These are globally renowned and proven components in the excavator game.

The SANY SY335C also features an auto deceleration system that reduces fuel consumption by 5 – 10%. When an operation stops for 3,5 seconds, the engine speed drops automatically to idle level, and maintains the idling state. Additionally, the dual pump, dual circuit constant power control system means that the Isuzu engine produces a continuously strong operating force.

Significant progress

The SANY brand has grown leaps and bounds in the past four years under the stewardship of GEM in South Africa. To provide context, SANY was ranked 9th in the excavator market in the country at the start of 2020, and had moved to 5th position by the end of the year.

“We have experienced good growth in the four years we have been the dealer for SANY’s earthmoving equipment in South Africa,” says Leith. “This is due to a combination of reasons. Firstly, SANY has come to the party and supported us throughout this journey. The close cooperation between us and the principal has been instrumental to the growth of the brand in the country. For example, SANY has



The eight excavators are deployed to lay pipeline sections and backfill material in the trench.



The Masama-Mmamashia pipeline is regarded as a critical piece of infrastructure in the provision of reliable water supply to the heavily distressed southern part of Botswana.

over the years allowed GEM to take local clients to the factory in China to witness first-hand the manufacturing processes and the build quality of the machines."

The manufacturer has also allowed for an extended warranty on some of the products from the standard 18-month/ 3 000-hour to a 36-month/ 8 000-hour warranty, which, according to Leith, demonstrates the confidence in the quality of the product, as well the capabilities of the dealer to keep these machines running in the field.

Central to the growth of the brand has also been the Goscor Finance facility, which has eased customers' financing problems, especially during the current tough economic conditions where traditional banks' appetite for risk is at its all-time low.

"On the aftermarket side of the business, we have also invested a lot in terms of our spare parts holding, additional technicians and service vehicles. We have also recently moved into a larger, state-of-the-art premises in Johannesburg, which allows for a larger inventory of machines and spare parts," explains Leith.

Samuel Zhang, GM SANY Southern Africa, says both SANY and GEM have invested heavily in their support infrastructure in recent years. SANY as the OEM has its own large warehouse in the Boksburg area to support the dealer.

"SANY as the OEM currently stocks

about US\$3-million worth of spare parts in our Boksburg warehouse, only for the earthmoving equipment division. Our plan is to increase the size of this stockholding from the current US\$3-million to US\$6-million within the next six months," says Zhang, adding that this will translate into improved parts availability for local customers.

SANY also owns a 30 000 m² machine storage yard in Boksburg, where together with GEM, are able to stock in excess of 60 machines at any given time. At a time when most competitors are ordering stock from overseas factories on the back of customer orders, SANY and GEM have machines immediately available from the local yard, thus shortening lead times significantly. This was crucial in the awarding of the Khato Civils deal.

"One of the major advantages of opting for SANY in South Africa is the availability of machines and spare parts, thanks to our high levels of stock. This is complemented by the strong backup support from the dealer. Central to SANY's growth in recent years is our strong dealer, complemented by a strong OEM willing to back up its brand in the market," says Zhang.

He adds that SANY has over the years shown commitment to building greater customer satisfaction in terms of parts availability and service response in South Africa. "Our target within the next

three years is to be among the top three earthmoving equipment brands in South Africa. We are also targeting to be the No. 1 service brand in the country," adds Zhang.

Global dominance

Globally, SANY has become a force to be reckoned within the yellow metal equipment space. Established some 31 years ago, the privately-owned, publicly-listed Chinese OEM has grown from a humble countryside Chinese workshop to becoming a major force in the global equipment space, with several manufacturing bases across the world.

Its total sales reached US\$10,691-billion in 2019, representing a 35,55% year-on-year growth. The company achieved record sales of about US\$20-billion in 2020. The excavator division contributed US\$3,903-billion towards the group's total revenue, selling more than 60 000 units during 2019. In 2020, the company sold 100 000 excavators globally, with 10 000 destined for markets outside China.

SANY has over the years dominated the Chinese excavator market, occupying the No. 1 position in terms of market share for 11 years running. The company currently holds about 28% excavator market share in China, which is equal to the aggregate of the second and third ranked excavator suppliers in China combined. 🌐



More than 77% of new Scania trucks in South Africa were sold with a maintenance or R&M contract in 2019.

SCANIA'S PROJECTIONS POINT TOWARDS A TRUCK MARKET REBOUND IN 2021

Having been at the helm of Scania Southern Africa since November 2019, MD Fabio Souza gives

Capital Equipment News his high-level assessment of the local truck and bus market, writes **Munesu Shoko**.

When Fabio Souza took over as MD of Scania Southern Africa just over a year ago, it was his first time in South Africa. In a one-on-one with **Capital Equipment News**, he concedes that before arriving in the local market, he wasn't expecting to encounter a market as mature as he found in place. One of the key indicators of the mature nature of the local market, he says, is that trucks running on the country's roads are fairly new, which is something different to Souza's previous experience in Latin America.

"Additionally, customers here are more focused on the transport side of their business – which is their core – than the truck itself. They are more concerned about providing a good service to their own customers and therefore expect the original equipment manufacturer (OEM) to provide them with a total solution to keep their trucks on the road. It's not just about selling trucks and buses for OEMs operating in the local market, it's about providing service, finance, insurance, repair and maintenance (R&M) contracts and buy-back options, to mention a few services," he says.

To provide context, Souza notes that

Scania Southern Africa has enjoyed huge market penetration of its R&M contracts, which is clearly one of the key characteristics of a mature market. More than 77% of new Scania trucks in South Africa were sold with a maintenance or R&M contract in 2019, and 74% in southern Africa. A record 44% of buses in South Africa in 2019 were sold with a maintenance plan. "This is the same way they operate in mature markets such as Europe; it's a norm that trucks are sold with a maintenance contract because the customer is not concerned about the nitty-gritty of running a truck. All they are concerned about is keeping the vehicle running," says Souza.

Another observation Souza has made is that local transporters don't run high mileages on their trucks. The average mileage, based on the 13 000 connected vehicles Scania Southern Africa has in the market, is 10 000 km per month. "There are, however, some segments of the industry where transporters run in excess of 20 000 km, but on average our local customers run 10 000 km per month. Unfortunately, with reduced mileage, customers don't realise the full benefits of running a premium product like Scania. Generally, the more the premium asset

is utilised, the more the benefits for the customer, especially as far as fuel efficiency is concerned.

Another important observation Souza has made is the world-class nature of the road infrastructure in South Africa, which positively impacts transport customers. "I had the opportunity to drive around the country and I was impressed by the spectacular roads that I saw. Such world-class infrastructure gives our customers a good opportunity to provide a good service to their own customers, which is critical to the growth of their businesses," says Souza.

On the other hand, Souza highlights the struggles faced by cross-border transport companies. Border delays in southern Africa, depending on where you are going, can stretch to days, if not weeks, due to the cumbersome customs and border-crossing procedures. This, he says, also has a significant impact on the mileage that transporters travel per month.


Resilient market

Commenting on the state of the market in southern Africa, Souza notes the truck and bus markets have been fairly resilient, despite the current COVID-19




Scania Southern Africa has optimised a lot of processes in the business and is now preparing to launch new product solutions in the market.


QUICK TAKE




One of the key indicators of the mature nature of the local market, according to Fabio Souza, is that trucks running on the country's roads are fairly new



Scania Southern Africa has in recent years enjoyed huge market penetration of its repair and maintenance contracts, which is one of the key characteristics of a mature market



Local transporters don't run high mileages on their trucks; the average mileage, based on the 13 000 connected vehicles Scania Southern Africa has in the market, is 10 000 km per month



Based on official market figures for the year to October 2020, the local market saw a 17% drop in volumes in the heavy duty truck segment

influenced crisis. "We have, of course, witnessed a drop in the total volumes, but it was much lower than what we expected at the start of the crisis," he says.

To provide context, based on official market figures for the year to October 2020, Souza says that there was approximately a 17% drop in the heavy duty truck segment and a 20% decline in the bus market. The latter, however, showed great resilience, given that cross-border

activity, which is a key pillar of the bus market, was completely shut.

"From a truck perspective, I think a key enabler is that the majority of goods in the region are transported by road. Additionally, because South Africa seems to be the link between other southern African countries and the rest of the world, you have a lot of vehicles carrying goods between South Africa and neighbouring countries such as Namibia, Botswana, Zimbabwe, Zambia and the DRC," he says.

Despite the lockdown, Souza says mining activity, which is a key component of southern African economies, continued to produce raw materials for the export market, which kept transporters in that sector running. "I believe these are some of the factors behind the resilience of the market," he says.

Key priorities

Going into his second year as MD of Scania Southern Africa, Souza has outlined some of his immediate objectives for the business. "Reorganisation of the business is a key priority at this point. We have already set ball rolling in that regard. Mark Erasmus, who has a long history in the industry, is our new GM Sales, and Alan Hugo, who has been with the company for a long time and comes from a commercial background, has just taken over the role of GM Services. These are important arms of the business we felt needed strong strategic direction, especially during these tough times and well into the future," he says.

Scania Southern Africa, says Souza, has optimised its business processes and is now preparing to launch new solutions in the market.

"I would say the main target for us is to be closer to our customers and to add real value to their businesses by delivering beyond what we offer today. I am convinced that we are on the right track as a business, but there is room for improvement and that's the position we will take this year."

Commenting on some of the key issues that will be important to Scania's recovery in 2021, Souza says judging by the average mileage being travelled by the 13 000 connected trucks that Scania Southern Africa has in the field, he believes that the recovery is already happening.

"The average mileage per month has always been 10 000 km, and during the lockdown it dropped significantly to between 800 and 1 500 km. However, from June 2020 we started seeing the mileage increase steadily, and I can tell you that, today, it is back to the 10 000 km per month levels we had pre-lockdown, which for us is encouraging because service forms a



Scania last year brought its first Performance-Based Standards (PBS) vehicles to the local market.



Based on Scania Southern Africa's 13 000 connected vehicles operating in the field, the average monthly mileage for local transporters is 10 000 km.

significant part of our business," he says.

"We also see some recovery on the volumes side of our business, with demand and order intake steadily improving, and I believe that all the conditions for recovery are already in place. As a business we have done our homework to adjust to new realities. We are in a much better shape for 2021 and I am confident that we will have a better year than 2020."

One of Scania's key strengths has always been its retail network. Souza believes that the network will further reinforce Scania's resilience as a business. "I am really proud of the dealer network that we have in southern Africa. We have workshops in all the most important points of the region. I have visited most of our workshops and I am pleased to say that we have good infrastructure in all of them, which offers peace of mind to our customers," he says.

This service capability, he says, is at the centre of the long-term relationships that the company has with its customers. Souza is well aware that Scania's retail network plays a

crucial role in maintaining the relationship between the company as the OEM and the customer. "That's really key for us and the target is to keep investing in our dealer network going forward," he says.

Market outlook

Commenting on the outlook of the market, Souza foresees a significant recovery in 2021. He is of the view that the extra heavy commercial vehicle segment will reach around 13 000 vehicles per year in the next few years, but not necessarily this year. "We will, however, potentially see a continuous improvement going into 2022," he says.

"I also believe that we will see a radical technological shift in the coming few years. We are based in a market where the emission legislative requirements are not that demanding. The best tech we have today is Euro 3. I do, however, believe that this will change in the next few years, regardless of the legislation. The market will start moving towards better technology such as Euro 5 engines, seeking better cost of operation through reduced fuel consumption and better control of emissions in the process," he says.

Souza also believes that the market will see increased demand for premium products with better technology and load capacity. For example, Scania last year brought its first Performance-Based Standards (PBS) vehicles to the local market. The PBS approach to heavy vehicle regulation specifies on-road performance and safety requirements, allowing a relaxation of vehicle mass and geometry. The PBS combination is an adaptation of the baseline vehicle, and employs one additional axle per trailer, which allows for a higher load capacity than a normal configuration.

While fleet management technology is already a reality here and the world over, Souza believes that the big change will be that both the OEM and the customer will work closely to make sense of the data generated by fleet management solutions. "Traditionally, we have been good at generating data, and I think the big change will be around transforming data into useful information, and transforming information into action," he says.

"The data has always been there, but not the actual useful information. There is no crystal clear picture of what needs to be done with the data generated, and without a clear picture, there is no action. That's what we want to invest in to help customers take this data and produce the big picture, and also to transform the big picture into action," concludes Souza. 🌐



"The main target for us is to be closer to our customers and to add real value to their businesses by delivering beyond what we offer today. I am convinced that we are on the right track as a business, but there is room for improvement and that's the position we will take this year."

Fabio Souza, MD Scania Southern Africa

NEW COMPACT DUST SUPPRESSION TECHNOLOGY FROM BOSSTEK

As effective dust control continues to gain priority across a wide range of industries, a new equipment design has been engineered to provide an unmatched level of mobility and performance, delivering effective particle suppression for new and existing applications.

With a throw of 30 m, the adjustable elevation angle and user-defined oscillation allow precise aiming of a powerful dust-capturing mist, which is comprised of millions of droplets per minute in the range of 50 – 200 microns, proven to be the most efficient size for most project needs.

The DustBoss Atom from BossTek is a true innovation in mobile dust suppression, a fan-less, self-contained design that incorporates remote control and 4G LTE telematics technologies as standard equipment to deliver an unprecedented combination of suppression and monitoring. The compact, diesel-powered unit fits in the back of a pickup truck, so it can be quickly positioned and relocated to address dust-generating activity directly at the source. It also has fork lift pockets on the front and back.

“After more than 15 years of designing purpose-built dust suppression equipment in a variety of sizes and styles, we found that some companies expressed a desired for a smaller, more manoeuvrable unit, with a lower price point,” says BossTek VP of sales Mike Lewis. “This machine is well suited to demolition projects, recycling operations, transfer stations, bulk material processing, ports/shipping applications, quarrying/crushing, biomass handling, concrete curing and even indoor operations where significant air movement may be undesirable.”

Key features

The Atom features a Kohler KD440 power plant – a 9,1 hp air-cooled engine that meets Tier-IV Final emissions standards and complies with California CARB requirements. An innovative air filtration system increases performance and lengthens service intervals, even in dusty environments. Its integrated fuel injection system and overhead cam design are coupled with a cast iron cylinder liner for consistent, reliable service. The engine and pump subassembly is secured by four isolation mounts that minimise vibration transfer to the frame. The high-impact stainless steel nozzle features a quick disconnect for easy replacement. ☼

The system delivers effective particle suppression for new and existing applications.



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Optimised fuel mapping of the engine and adaptive economy mode determine the most efficient operating point to improve truck fuel economy.

IMPROVED PERFORMANCE AND FUEL EFFICIENCY FOR LOWER COST PER TONNE

Offering what is said to be the highest in-class payload of 98,2 tonnes, the 2021 Cat 777E truck features improvements in power, torque and transmission control to deliver greater productivity. Updates also include configurable Eco Mode operation to reduce fuel consumption and drive down cost-per-tonne of material moved. By *Munesu Shoko*.

The newly updated Cat 777E rigid dump truck has a special design focus on delivering improved performance and fuel efficiency for lower cost per tonne. The updated Cat C32 engine delivers increased horsepower and a 7% improvement in torque to increase hauling performance. Optimised fuel mapping of the engine and adaptive economy mode determine the most efficient operating point to improve truck fuel economy.

Additionally, operators can select a variable engine derate from 0,5% to 15% in Eco Mode operation to further reduce fuel consumption – and the

new automatic engine idle shutdown feature reduces fuel use and wear on engine components.

Improved productivity

Today's 777E truck improves productivity by up to 5%. The new Advanced Productivity Electronic Control Strategy (APECS) improves transmission and engine coordination to better utilise available engine power. The result is as much as 7% more torque delivered to the drive wheels for improved hauling performance. The new control system also provides smooth shifting for greater operator comfort.

The 777E now offers a second

gear start when underfoot conditions and grade allow. The strategy enables the truck to reach optimum speed more quickly, lowers cycle times and minimises the number of transmission shifts. To save fuel, a new auto neutral idle feature shifts the transmission into a neutral-like condition when the truck is idling in drive. The transmission's speed limit feature allows the machine to run at optimal gear for selected speed.

When working in cold conditions, the new auto-stall feature assists in quickly bringing the transmission to operating temperature at start-up. The effect is less non-productive time and



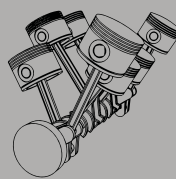
A host of newly integrated Cat technologies help to improve hauling efficiency and truck longevity on the 777E.

QUICK TAKE

The newly updated Cat 777E rigid dump truck delivers improved performance and fuel efficiency for lower cost per tonne operation



The updated Cat C32 engine delivers increased horsepower and a 7% improvement in torque to increase hauling performance



Optimised fuel mapping of the engine and adaptive economy mode determine the most efficient operating point to improve truck fuel economy



Operators can select a variable engine derate from 0,5% to 15% in Eco Mode operation to further reduce fuel consumption – and the new automatic engine idle shutdown feature reduces fuel use and wear on engine components



reduced fuel consumed for warm-up.

The 777E also features updates that elevate operator efficiency. A new gearshift lever with integrated hoist and park brake controls eases operation, and the auto hoist feature delivers controlled truck bed descent to prevent body slams and increase component life.

A new touchscreen display features enhanced user interface options. Easy to read, it delivers improved navigation through machine control systems. The new display allows operators to monitor key machine operating parameters, like tracking payload, as well as upcoming scheduled service intervals.

Productivity enhancing technology

A host of newly integrated Cat technologies help to improve hauling efficiency and truck longevity on the 777E. The new Truck Production Management System (TPMS) integrates strut pressure sensors and on-board computing and displays truck payload to the loading machine operator. The system helps attain target payload.

Vital Information Management System (VIMS) on board the new 777E allows operations to proactively manage machine

health and production. Real-time machine performance, operating data and diagnostics are displayed on the in-cab monitor for easy viewing and troubleshooting. Integrated prognostics develop trends from cumulative collected operating data to help increase truck cycle efficiency.

A new Tonne-Kilometre (TKPH) feature helps ensure that truck operation falls within the operating range of the tires. The system monitors payload, speed and ambient temperature to calculate operating conditions, and the operator receives an audible warning when conditions exceed tire limits.

The updated 777E comes standard with Product Link with either cellular or satellite reporting options to meet the needs of

the mine. Product Link captures critical machine operating data – location, hours, fuel, etc. – and reports it back to the main office through VisionLink, helping to improve productivity, truck utilisation, safety and maintenance efficiency.

Improved safety

With integrated TPMS, the overload speed limiter works in conjunction with the improved truck payload system to automatically reduce travel speed when the truck is overloaded. Brake actuation is now fully hydraulic and delivers fast response and smooth application.

The new adjustable mirror package for the 777E improves rear visibility for the operator. An optional camera system

delivers enhanced operating environment visibility to the machine’s front, rear and sides with the video feed displayed on the in-cab monitor.

Engine crank and machine lockouts disable the engine starter/secondary steering and implements to improve servicing safety. Lockout engagement is conveniently located at ground level and an indicator light display ensures lockout is effectively engaged.

The new optional automatic lubrication system provides grease for all lube points on the machine, eliminating the need for manual intervention. The tank fill-point is conveniently located at ground level to improve refilling simplicity and enhance safety. 🌱

New Cat 657 wheel tractor-scraper increases productivity

New from Caterpillar is also the Cat 657 wheel tractor-scraper (WTS). Featuring the field-proven, twin-power design to boost cycle times, the new Cat 657 WTS elevates productivity and operating efficiency to deliver low-cost earthmoving. A 7% increase in fuel efficiency over the 657G WTS means more material moved per unit of fuel burned, and improved onboard payload estimating accuracy helps optimise productivity.

The largest open bowl scraper in the Caterpillar line, with a rated load of 46,4 t, now has a more spacious cab to boost operator comfort and efficiency in high volume earthmoving, highway construction and mining applications.

“The new 657 is the next generation of ultra-class material moving systems,” says John Gerhold, wheel tractor-scraper application specialist for Caterpillar. “It delivers improved productivity, safety and technology, which our customers can use to strengthen their business today – and it is equipped to grow with them to meet tomorrow’s requirements.”

The 657 features on-the-go weighing through Payload Estimator, allowing the new WTS to achieve 95% load accuracy, so operators more easily reach target load goals. When working in colder climates, the unique Auto-Stall feature quickly brings the transmission to operating temperature at start-up, so the 657 gets to work faster. Ground Speed Control lowers fuel consumption by allowing the operator to set the desired top speed, allowing the machine to find the gear that works best for the engine and transmission.

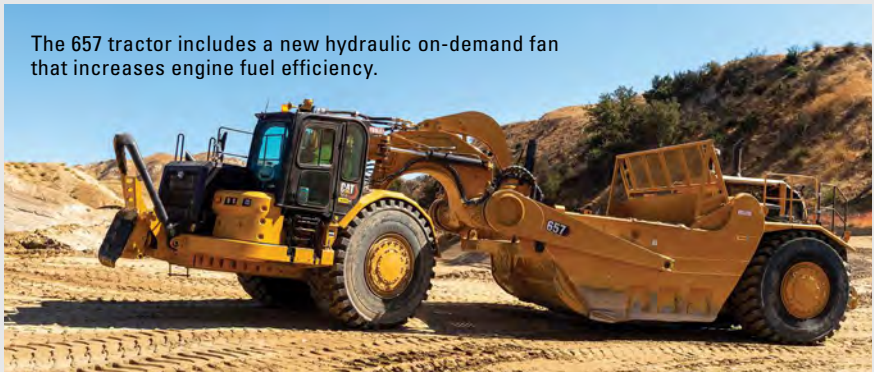
The two-engine design includes the Cat C18 powering the tractor and Cat C15 in the scraper. Its Advanced Productivity Electronic Control System (APECS) allows the machine to better utilise engine power and torque, resulting in more material moved throughout the shift. The transmission features Electronic Clutch Pressure Control, which improves shift quality and fuel efficiency. New hydraulic disc brakes improve braking performance and reduce maintenance.

Comfortable operation

A 21% larger cab interior than the preceding



The new 657 is the next generation of ultra-class material moving systems.



The 657 tractor includes a new hydraulic on-demand fan that increases engine fuel efficiency.

model, the 657G, improves operator comfort and provides excellent visibility to the bail, cutting edge and bowl of the new 657. The air suspension comfort seat adjusts and rotates 30-degrees to reduce fatigue, while the new Advance Ride Management adjusts damping to match ground conditions, resulting in a smoother ride for the operator. Automatic HVAC temperature control and defroster come standard for increased operator comfort. The new power access ladder enhances operator safety when entering and exiting the cab.

The new high-pressure steering system requires less steering input, which bolsters operator efficiency and productivity. Automatically engaging when the machine is in eighth gear, engine overspeed protection assists in slowing machine speed when approaching engine limits. Sequence Assist, a new option on the 657, automates many operator inputs each cycle to simplify machine operation.

Increased efficiency

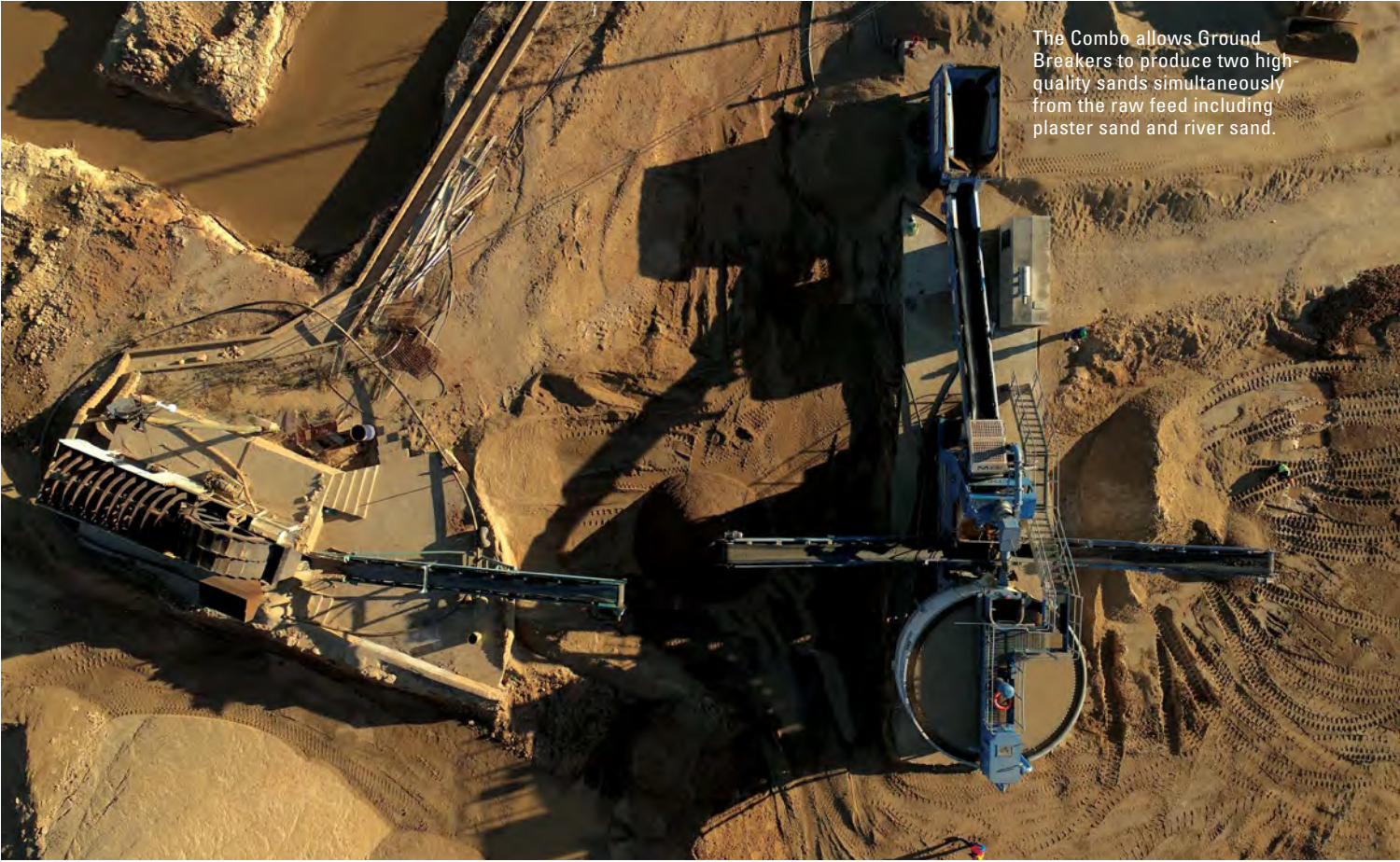
The 657 tractor includes a new hydraulic on-demand fan that increases engine fuel efficiency. The machine also has draft-arm overflow guards, which prevent material accumulation between the draft arms and bowl sides. Ground-level access for fuel fill and all daily maintenance points increases service efficiency and safety to increase machine uptime.

Integrated Payload Estimator and Cat Product Link technologies provide real-time payload, machine location, fuel usage and idle time information as well as diagnostic fault codes – all to significantly increase fleet management efficiency. A collective view of critical machine operating data is accessed via VisionLink from anywhere there is an internet connection. My.cat.com links managers directly to their VisionLink account and offers access to maintenance schedules, parts and service records and warranty information.

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The Combo allows Ground Breakers to produce two high-quality sands simultaneously from the raw feed including plaster sand and river sand.

REPLACING BUCKET WHEEL SYSTEMS WITH CYCLONE TECHNOLOGY

Problems encountered when washing and dewatering sand include the discharge of wet product; product-sized sand sent to waste; too much time spent cleaning out settling ponds, and water usage. Wet processing equipment provider CDE has developed an alternative for construction and materials companies, in the form of cyclone-based solutions. By *Mark Botha*.

Until recently, construction and materials companies had to rely on bucket wheel wet processing technology to separate materials into different grades of sand.

Although bucket wheels have been essential to the quarrying industry over the years, increasing demand for sand and aggregates products, as well as increasingly stringent regulatory requirements, mean that operators must produce a wider range of materials in larger quantities and in less time to protect their return on investment and to turn a profit.

Global wet processing equipment provider CDE has developed an alternative for construction and materials companies, in the form of cyclone-based solutions which, according to Willem du Plooy, the company's business development manager, "guarantee a strong competitive edge and fast return on investment".

Bucket wheel technology

"Bucket wheel technology, in its prime when resources were abundant and the price of sand was high, is fast becoming a much less attractive proposition when compared to

new systems," says Du Plooy.

He says bucket wheels accept material either directly from the aggregates screening operation, or are fed from classification tanks in applications where there is excess fine material in the -75/- 63 micron range, which must be removed.

The operation of the screw pushes the sand fraction up the elevated chamber while the water and finer particles pass through the overflow weir. The overflow weir, which is closer to the feed point, then provides the mechanism for fines removal.

In bucket wheel classifiers, sand slurry is introduced near the wheel, where the coarse sand settles, and is lifted by the rotating wheel. The rotary bucket elevator scoops the sand from the tub and drains the water from the sand during transfer. The wastewater flows over the weir at the back of the bucket wheel and the solid fraction is separated in the wastewater slurry.

"The limited capacity at the feed point



Switching from the bucket wheel system to the Combo has resulted in production gains for Ground Breakers.

QUICK TAKE

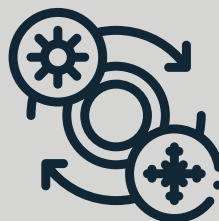
Bucket wheel technology is fast becoming a much less attractive proposition when compared to new systems



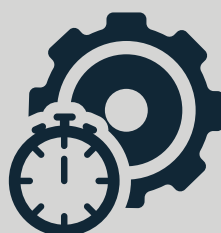
The limited capacity at the feed point of bucket wheel technologies makes control over the required volumes of water difficult



Cyclone technology is now replacing bucket wheel technology as a 'natural evolution'



ROI is fast thanks to a reduced spares requirement, efficient water management and longer running time



of these technologies means that control over the volumes of water required for accurate material classification is difficult," says Du Plooy. "The inability to use sufficient volumes of water means that fines are not efficiently removed and 100 – 300 micron fractions are lost to ponds or to the water treatment phase, along with the overflow, making the sand product coarser."

He says the bucket wheel's settings must be adjusted regularly to mitigate the risk of inaccurate material classification.

As this method of classification depends on settling time, the cut point must often be chosen above the threshold to obtain a maximum amount of allowable silt in the final product.

Diverting excess material to settling ponds requires considerably more space to accommodate them, and the classification inefficiencies increase as the proportion of fines in the feed material increases.

Clearing out settling ponds to recover lost material requires plant downtime in addition to the operating costs incurred when reprocessing waste material. High maintenance and restricted throughput aside, the sand product typically discharged contains between 23% and 25% moisture, placing stockpiles at risk of contamination if located in proximity to one another.

"As a consequence, stockpiling the final product requires double or even triple handling to move the material to separate



CDE developed and built a Combo modular plant to transform 60 tph of raw feed into washed 0 – 6 mm river sand and 0 – 1,5 mm plaster sand.

stockpile areas. Stockpiles take long to build and to dry to saleable standards, and return on investment becomes a significant issue,” says Du Plooy.

Cyclone technology

He says cyclone technology is now replacing bucket wheel technology as a “natural evolution” of materials processing brought about by modern innovations. CDE has developed cyclonic materials technology to the point where it guarantees the removal of the undesired fraction (for example, -74 micron) while retaining quality fines and maximising dewatering of the product to between 10% and 15% moisture.

The company has been a proponent of cyclone technology since 1992 and has delivered almost 2 000 materials washing operations projects globally.

“Cyclone technology involves the use of centrifugal force as opposed to gravity to classify materials,” says Du Plooy. “After testing to determine the proportion of silt material to be removed from the raw feed, the specification of a cyclone set-up is calculated to ensure that the client’s EvoWash hydrocyclone-based system provides control over silt cut points.”

The design of the cyclone unit allows for an increased number of parameters which, says Du Plooy, ensures improved accuracy on the material cut point. The silt exits the overflow at the top of the cyclone with the wastewater, to be sent to settling ponds or a water recycling system. The sand fraction exits the cyclone at the bottom, ready for dewatering and stockpiling.

Retaining all available quality fines in the raw feed reduces the space required for settling ponds and so benefits both the customer and the environment.

“Product yield is maximised and operational costs reduced,” says Du Plooy. “The production of sand and aggregates is guaranteed to be within specifications, in line with the requirements of the customer or their downstream processes.”

“For instance, a 70 tph machine typically loses 20% sand to the pond which equates to 14 tph of sand lost, resulting in 140 t/day and 3500 t/month. If sand is worth R100 per tonne, that is a loss of R350 000 per month. With the lost sand recovered from the silt pond, a CDE EvoWash could pay for itself anywhere between 6 to 12 months.

High moisture content

The solution to bucket wheels’ limited ability to dewater sand products effectively lies in using a high-frequency dewatering screen to dewater the material in one pass, so removing the need for re-processing and double handling, says Du Plooy.

Once the sand slurry with the silt material is discharged from the hydrocyclones, it is delivered to a dewatering screen which is sized according to the customer’s specific capacity requirements.

“This allows for a sand product with a moisture content typically ranging from 10% to 15%,” says Du Plooy. “As a result, the product is ready for market straight from the belt,

and the sand is turned into revenue in the shortest possible time.”

He says return on investment is fast thanks to a reduced spares requirement, efficient water management and longer and more reliable running time.

“If sand is worth R100 per tonne, a 70 tph machine loses R7 000 for each hour it is out of action due to maintenance or repairs. Our products are designed specifically to require minimum attention, minimal civils and a minimal number of operators so that they can be left to simply produce clean sand and aggregates at the required rate.”

Process water recycling

He says CDE’s AquaCycle water management solution accelerates return on investment by maximising production efficiency, minimising the loss of valuable fines, and reducing water and energy costs.

“AquaCycle minimises water consumption by ensuring that up to 90% of process water is recycled for immediate recirculation.”

Once the feed material has been washed and classified, waste is sent to the AquaCycle thickener tank, where a small amount of polyelectrolyte flocculent is added to the water via an automatic dosing station forcing fine particles to settle to the bottom of the thickener tank.

“The clean water at the top overflows the weir and is stored in the AquaStore tank before being re-circulated,” says Du Plooy. “The result is an efficient water recycling system which requires only a 10% top-up water supply.”



“Cyclone technology involves the use of centrifugal force as opposed to gravity to classify materials. After testing to determine the proportion of silt material to be removed from the raw feed, the specification of a cyclone set-up is calculated to ensure that the client’s EvoWash hydrocyclone-based system provides control over silt cut points.”

Willem du Plooy, CDE business development manager

He says waste sludge is discharged into a buffer tank where a motorised rake in constant rotation ensures the material does not settle and solidify. If further dewatering is required, a filter press or decanter is added to the wet processing solution to eliminate the need for settling ponds.

Design

Du Plooy says all water thickeners are not “born equal” and their efficiency results from years of research, development, and refinement.

“Every aspect of its design is considered carefully so that the system is responsive to the site-specific needs of its owner.”

He says all CDE equipment is pre-wired and pre-tested before despatch, to allow for plug-and-play operation, and is designed for rapid assembly and set-up to start processing material within days of arrival on site.

“These design considerations and factory acceptance tests reduce install time significantly and accelerate return on investment, a real proposition when the CDE AquaCycle thickener is introduced to a washing operation. In fact, RoI with a CDE AquaCycle is typically achieved within six to nine months.”

Settling ponds are a known source of revenue loss due to their high maintenance costs, site footprint and downtime, but also because high-value fines can be lost and trapped at the bottom of ponds.

“The requirement for settling ponds is greatly reduced by recycling up to 90% of the process water. The addition of a filter press tailings management system eliminates that need entirely. When combined with a CDE filter press custom-built fines management system, this figure increases to 95%, removing the need for settling ponds altogether.”

Case study

South African sand and aggregates producer Ground Breakers required an upgrade of the existing bucket wheel system to address the loss of valuable

materials to ponds and excess moisture in the final products.

The company’s JC Janse van Vuuren and Johan Meintjes explain: “Our quarry site in Lanseria faced a lot of challenges: we had limited water sources and space to install a proper wash plant. Silt dams are no solution as they take up valuable mining space.”

The market required clean washed concrete sand but the company’s bucket wheel was not delivering quality product. In addition, fines were being lost to settling ponds, wasting material that could not be sold without dredging the ponds and re-processing it through the bucket wheel.

The sand product typically discharged from the Ground Breakers’ bucket wheel system contained between 23% and 25% moisture, which meant that stockpiling the final product required double or triple handling to move the material to a separate stockpile area.

The solution

Ground Breakers’ feed material was tested at CDE’s laboratory. The resulting analysis results showed that the customer could achieve savings by adopting cyclone technology to eliminate the loss of fines to ponds.

This, says CDE’s Du Plooy, “would help retain every grain of sand available in the system, reduce the size of the settling ponds, and shorten maintenance time.”

He says CDE’s technology could also add a plaster sand product to Ground Breakers’ offering. Plaster sand has higher commercial value than the river sand originally processed.

CDE then presented its Combo all-in-one wet processing and water recycling system as a solution to the customer’s requirements.

According to Du Plooy, the Combo would allow the client to produce two high-quality sands simultaneously from the raw feed, including plaster and river sand, at a much faster return on investment.

“Incorporated water management would ensure that the final products were dewatered to an average 12% moisture content, making them ready for market straight from the belts. As an added benefit, the fully integrated CDE AquaCycle thickener would allow for up to 90% of the process water to be recycled directly into the system for near-independence from fresh water supplies.”

Following a collaborative design process with the customer, CDE then developed and built a Combo modular plant to transform 60 tph raw feed into washed, 0 – 6 mm river sand and 0 – 1,5 mm plaster.

The result

The Ground Breakers bucket wheel was not reducing moisture in the sand products effectively and fines were lost to ponds.

To address these limitations, the Combo high-frequency dewatering screen was provided to dewater the material in one pass, removing the need for re-processing and double handling.

Once the sand slurry with the silt material is discharged from the hydrocyclones, it is delivered to the screen which is sized according to the customer’s capacity requirements. This allows for the production of a sand product with a moisture content typically ranging from 10% to 15%.

The result was a product that is ready for market straight from the belts, in turn converting sand into revenue in the shortest possible time.

“An added benefit of the Combo system is that, although the plant packs a powerful punch, it requires a very small footprint, making it easy to relocate, even in remote areas,” says Du Plooy.

Janse van Vuuren and Meintjes agree: “Our CDE Combo is compact and highly efficient. It produces two properly washed products and our customers are happy that the moisture content is so low. This means a considerable cost saving to them, as we generally sell per tonne.”

They say the need for silt dams has been reduced because the system basically works as a full-circuit unit, retaining fines and recycling used water for immediate re-use in the system.

“The Combo on the Ground Breakers site,” says Du Plooy in conclusion, “has allowed the company to maximise yield and reduce its operational costs. The production of sand and aggregates is guaranteed to be within specifications, with no risk of cross-contamination when two products are processed simultaneously.”



Fitted with the flexibility of the Volvo oscillation technology – which eliminates vertical vibrations – the DD105 OSC offers high compaction performance while producing a non-damaging oscillation movement.



To account for the increased wear on the drum surface, the Volvo DD105 OSC roller has a hardened, abrasion-resistant alloy steel drum shell, which increases longevity.

NEW VOLVO 10-TONNE COMPACTORS FOR EMERGING MARKETS

Volvo Construction Equipment is rolling out a new range of 10-tonne compactors. The company's DD105 and DD105 OSC asphalt now come equipped with Tier 3/Stage IIIA engines for emerging markets. *By Munesu Shoko.*

Thanks to the integration of a Tier 3/Stage IIIA engine, the DD105 and oscillatory variant DD105 OSC double drum compactors are now available in emerging markets. The fuel-efficient and productive machines are equipped with an 85 kW Tier 3/Stage IIIA engine that automatically adjusts output according to jobsite requirements, delivering power only when needed.

Other smart features include Eco mode – which cuts fuel consumption by up to 30% without affecting performance – and an auto-idle function that reduces engine speed when the roller is stopped.

Comfortably productive

The machines are built to work hard but that doesn't mean they can't be comfortable. Volvo Construction Equipment prides itself in designing machines with the operator in mind. The company makes some of the most comfortable – and therefore productive – machines in the industry and the DD105/DD105 OSC is no exception.

The ergonomically positioned controls and joystick guarantee effortless manoeuvrability, while the efficient climate system also helps keep the operator comfortable. The rear-mounted engine combined with a curved front glass panel and padded floor

contributes to low levels of noise and vibrations within the cab – for a smooth and quiet ride.

Safety and ease of operation are enhanced by the expansive front windshield which maximises the view down to the drum and spray bars. The structural pillar supporting the roof is located at the rear of the cab, meaning the three front glass panels provide operators with an entirely unobstructed view of the road. When working close to obstacles, the fully adjustable operator station can rotate and slide to the side of the cab to easily provide a view down the edge of the asphalt – increasing safety and rolling precision.

Smart technology

The 10-tonne compactors come fitted with a 1 680 mm wide drum whose unique design halves the power needed to start the vibration system with no compromise on productivity. This reduces the operator's exposure to machine vibration while also ensuring a smoother finished mat.

Fitted with the flexibility of the Volvo oscillation technology – which eliminates vertical vibrations – the DD105 OSC offers high compaction performance while producing a non-damaging oscillation movement. This transfers less stress to the surrounding surface, enabling compaction in more delicate application areas, such as bridges, over pipes and close to residential areas.



Key specifications			
Model		DD105	DD105 OSC
Operating weight (with ROPS)	kg	10 325	9 851
Drum or rolling width	mm	1 680	
Rated engine power	kW	85	
Vibration frequency	Hz	40 / 55	39
Amplitude	mm	0,86 / 0,45	0,72
Force	kN	112 / 99	
Engine		Volvo D3.8E, Stage IIIA / Tier 3	
Overall length	mm	4 650	
Overall width	mm	1 838	
Overall height	mm	2 999	

has a hardened, abrasion-resistant alloy steel drum shell, which increases longevity.

Also helping operators to achieve a high mat quality in less time is the Compact Assist function. Powered by the Volvo Co-Pilot display, Compact Assist provides access to a set of work-enhancing apps – including pass mapping and temperature mapping – which provide real-time insight into the work being undertaken. With easy access to clear and detailed data, the operator can eliminate any damaging over-compaction and ensure complete coverage of the working area.

Unrivalled uptime

The Volvo DD105 and DD105 OSC feature an automatic water spraying system with triple filtration that provides uniform coverage and variable flow, as well as helping prevent material pick-up. Furthermore, the two water pumps alternate during normal operation. In the rare event of a pump malfunctioning, a constant flow of water to the drum surface is automatically retained.

The large 800-l water tank allows for increased refill intervals, also helping to keep downtime to a minimum. Moreover, the tank's low positioning affords the machine a low centre of gravity for excellent stability and can be quickly and easily refilled at ground level.

The double drum compactors are designed for simple servicing and maintenance. The swing-up hood provides complete access to the engine and hydraulic components for efficient service inspections. Using a single key, technicians can access exterior service hatches, while fuses and relays are safely stored in the cab. With ground-level access to the engine, radiator, battery and filters, daily checkpoints are unobstructed. And when it's time to leave the jobsite and load into the truck, operators can rely on the Anti-Slip Control to avoid damaging the pavement.

To further optimise machine availability, customers can use CareTrack, the Volvo telematics system, to access a wide range of machine monitoring information designed to save time and money.

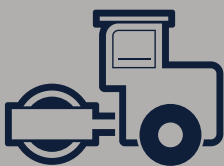
When additional support is needed, the extensive Volvo dealer network is on hand to provide advice and solutions, which can help customers towards achieving their business goals and objectives. 🌐



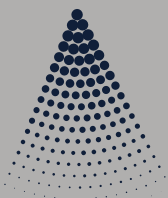
Thanks to the integration of a Tier 3/Stage IIIA engine, the DD105 and oscillatory variant DD105 OSC double drum compactors are now available in emerging markets



Smart features include Eco mode – which cuts fuel consumption by up to 30% without affecting performance – and an auto-idle function that reduces engine speed when the roller is stopped



The 10-tonne compactors come fitted with a 1 680 mm wide drum whose unique design halves the power needed to start the vibration system with no compromise on productivity



The Volvo DD105 and DD105 OSC both feature an automatic water spraying system with triple filtration that provides uniform coverage and variable flow, as well as helping prevent material pick-up

QUICK TAKE

Additionally, when compacting against a cold joint, the risk of damaging the cold surface is reduced, and the material can be more effectively compressed to seal and protect the surface. The oscillatory movement of the drum can also improve surface smoothness, by re-aligning the material. To account for the increased wear on the drum surface, the Volvo DD105 OSC roller

CONNECTIVITY WILL SHAPE THE FUTURE OF MOVEMENT

The pandemic and the lockdown have reduced our mobility, but our connectedness – via IoT, the Cloud and AI – has helped us overcome this. As society gets moving again, connectedness will redefine the way we do it, writes *Pierre Bruwer, MD of Netstar a subsidiary of Altron.*



Pierre Bruwer, MD of Netstar.

The ever-accelerating pace of technological innovation promises an era of mass, high-speed connectivity with the potential to not only boost human progress but improve the living standards of all the world's people.

The oceans of data that the Internet of Things (IoT) generates will equip humans with a better understanding of our world. Artificial Intelligence (AI) will enhance our ability to process this data and apply it.

Already, it is estimated that 30-billion IoT devices will be connected to the internet by the end of 2020. IoT spend may reach US\$15-trillion in the six years to 2025.

At the same time as connectivity is becoming indispensable, mobility has never been more important. The COVID-19 pandemic and the lockdown have made us painfully aware of how dependant we are on fleets to bring cargo from source to the retailers that provide our essential goods.

Protecting that cargo, and ensuring it gets to us as efficiently as possible, is the realm of telematics and IoT. This is contingent on connectivity. Our success as a society will depend on how well we connect to each other, and how well we use the information generated by IoT.

A carmaker partnership

A current global partnership with major automaker Toyota has given Netstar interesting insights into the future of personal mobility using connected technology.

The connected-vehicle approach allows carmakers to acquire vast amounts of consumer data, which can be used by engineering teams to build better motor vehicles and improve the mobility of their customers.

Our approach has been to build a network that transcends location. At times, it happens to be mobile, but it integrates seamlessly with user devices and their home and office networks. The goal was to eliminate the idea of the vehicle as an intermediate stage where connectivity is lost, or where mobile data is expensive. Now the vehicle functions as the hub of a connected life.

Everything from work to banking to information and entertainment is now available from the vehicle's mobile Wi-Fi hub.

Connectivity also ensures optimum driver safety. Any vehicle fault codes are reflected on the companion app. If the vehicle is involved in an accident, roadside assist can contact the customer directly, and arrange suitable help at the location.

The next phase of connectivity sees carmakers enter the infotainment space,

providing in-vehicle content as part of the car purchase package.

Public transport

In the public mobility space, connectivity can revolutionise the industry. The minibus taxi industry, empowered with high-speed mobile broadband, can become a hub of news and educational content.

The opportunities to improve driver and passenger safety are great. Shift bosses can monitor driver vital signs via wearable devices, and make interventions on the fly, which can make public transportation safer.

With 35 – 40 road deaths daily, South Africa has a horrendous road safety record. Telematics and other connected technologies are critical to improving this, by monitoring driving behaviour and encouraging safe driving.

There are significant first-mover advantages for developers and service providers in this space, as well as for the companies best able to productively process the large amounts data generated from connected motoring

Connected innovation approaches

With electric vehicles (EVs) already available in many markets, charging is set to become a key consideration. Charge alerts will indicate when to charge the vehicle, where, and how much time to budget for the process.

Navigation now involves automated communication between vehicle and infrastructure. The connected vehicle can now be expected to communicate with access gates at parking facilities, negotiating immediate, seamless access. Parking payment can be automated, as can fuel and charging transactions.

The safety advantages of connected mobility are clear. Geofencing functionality allows us to set time, speed and location alerts for loved ones or co-workers. In the time of global pandemics, curfew alerts can be automated. Automatic roadside assistance and collision alerts ensure help arrives even



when occupants may be incapacitated.

Connected mobility also allows constant video monitoring of scholar-transport services. Parents can now also have the peace of mind of being able to remotely monitor every minute of their child's school journey.

Netstar, for instance, has partnered with road-safety organisations in KwaZulu-Natal and the Western Cape, providing telematics to monitor the drivers of school-transport vehicles. Drivers are incentivised to drive safely and monitored with telematics technology, and it was found that monitoring led to safer driving behaviours.

The insurance industry has been an early adopter of technology to unlock the benefits of connected mobility. Whether through connected vehicles or customer devices, insurers are now able to monitor driving behaviour and incentivise positive change. Essentially, products are now being customised to consumer needs.

Connected fleets: commercial opportunities

Fleet intelligence, obtained through telematics and IoT, enables a fuller understanding of logistics processes, where inefficiencies can be eliminated, and how profitability can be optimised.

A partnership between Netstar and Putco, for instance, was able to cut accidents and also enhance COVID-19 compliance through a network of onboard cameras.

Putco reduced accidents by 70%, and damage claims by 36%. In 2016/17, Putco reported 61 accidents, but by the end of December 2019, this number had dropped to 18.

However, driver connectivity, often used simply for monitoring – has other positive possibilities. Free, centralised, high-speed connectivity in the vehicle means drivers parked overnight at a truck stop can video-chat with their families, or complete an e-learning course. Data, food or coffee vouchers can be offered as rewards incentives.

With the monitoring of connected fleets, precision maintenance can be used to improve profitability. Servicing schedules can be adjusted to ensure a longer life for the vehicles.

A new role for connected vehicles

The next opportunity for service providers in the connected mobility sector is in Big Data. With multiple devices, sensors, and users constantly generating real-time data, the true differentiator will not lie simply in the provision of hardware or software.

The mobility leaders of the future will be those organisations that can sift and analyse the data, interpret it, and apply its insights for the benefit of drivers, organisations and society at large. 🌐

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Terex launches TRT 80 crane

Terex has launched its TRT 80 rough terrain crane, featuring the new Terex Operating System (TEOS) operating system and proportional boom mode. TEOS offers improved information flow and accessibility to increase operating efficiency. The proportional boom mode provides the crane operator with a choice of three boom extension modes to meet different lifting requirements.

The crane offers 80 t lifting capacity, 42,1 m maximum boom length with three boom telescoping modes. The TRT 80 features an optional two-section jib with an 8 m lattice main section and 7 m secondary boxed section, providing a total length of 15 m. Jibs are stowed on the crane's side and easily attached to the main boom.

The new user interface with wide 10" full-colour touch screen display features self-explanatory and intuitive icons.

Based on extensive customer feedback, information access is quick and easy. The primary and most frequently used functions are immediately accessible, and intuitive controls ensure a short learning curve for new crane operators.

Error messages and warnings are within easy view for enhanced safety. A dedicated menu for diagnostics gives immediate feedback on crane, main component and sensor operating status.

Optional cameras are incorporated in the main display: the operator has full control of the crane from all points of view via a single display. Status of the radio remote control and T-Link platform options can also be seen on the main display. The optional T-Link telematics platform allows remote access of crane fleet operating data anytime, anywhere via the internet from your computer, smartphone or tablet. 🌐

Intuitive control for easier load handling

Saathoff Sondermaschinen has been offering creative engineering at its Bad Iburg site in Germany for more than 25 years. Catering to special requirements of customers from the automotive and supplier sector, the product portfolio ranges from welded assemblies through tool making to automation. Recently the company needed a slewing jib crane offering load handling ergonomics not only for the benefit of its staff but also for customers to experience its application solutions on site. Saathoff Sondermaschinen chose a pillar-mounted slewing crane from Demag.

"Demag is renowned globally for its advanced lifting solutions that meet the customers requirements completely and safely and when ergonomics is a key requirement, I believe we offer a superior solution," comments Emil Berning, MD of Demag South Africa.

"The pillar-mounted slewing crane from the Demag KBK Aluline crane construction kit that Saathoff selected, enabled production staff to move the 3 m-long jib smoothly and easily. As a hoist unit, the new Demag DCBS chain hoist, complete with balancer function, ensures fast and precise component transport in the production process. The Demag D-Grip Servo control allows intuitive load handling. Intuitive positioning with absolute precision is achieved by hand movements for goods weighing up to 125 kg," says Berning.

The combination of KBK Aluline pillar-mounted slewing crane and DCBS chain hoist provided the ergonomics, functionality and aesthetics envisioned by the customer. With its special white aluminium finish, the pillar-mounted slewing crane integrated into the Saathoff production colour concept.

The operator of the Demag DCBS chain hoist can handle loads intuitively through



Saathoff Sondermaschinen chose a pillar-mounted slewing crane from Demag.

manual force and hand movements on the controller. The D-Grip Servo and its movement sensors enable the load to be guided and positioned direct by hand. The control system meets or exceeds Performance Level "c" and Category 2 requirements for safety-related control functions according to EN ISO 13849-1.

Demag KBK Aluline pillar-mounted slewing cranes help improve ergonomic workplace design, weighing up to 45% less than steel profile cranes. Special paint finishes can be selected in Demag Designer to integrate the pillar-mounted slewing crane into the colour concept of any production line.

"Manually handling and combining or moving relatively light loads is often not only time-consuming, but also an ergo-

nomic burden for employees. Demag's wide selection of hoist units, slewing jibs and cranes when installed in the workplace enable all types of workpieces to be lifted and transported quickly and easily and deposited gently and precisely. In this way, setting up and idle times can be significantly reduced and periods of waiting for workshop cranes to become available can be completely eliminated," says Berning.

"Our lifting technology is well developed that installation is simple, while still offering better safety standards and operational reliability. I believe we offer the best solution to any lifting requirement from start to finish, be it a new plant or factory or an extension to an existing factory," concludes Berning. 🌐

Hiab launches electric MOFFETT

Hiab, part of Cargotec, has launched the MOFFETT E4 NX, its next generation eSeries of electric forklifts and the world's first all-electric three-wheel drive truck mounted forklift.

Inside the chassis of a MOFFETT M4, Hiab has constructed a zero-emission truck mounted forklift powered by lithium ion batteries with new controllers and the new HMI (Human Machine Interface) that displays battery capacity, machine performance and service information. The MOFFETT can be charged from a regular household socket or a 30 amp socket for faster charging, as well as from the truck in between deliveries.

The new MOFFETT eSeries, currently available in four E4 NX models with more being added, is not only beneficial to the environment as it has zero emissions, it is also much more comfortable and safer for the operator as it is virtually silent and has less vibrations than a diesel powered truck. The low noise means it can be operated without earplugs, allowing the

driver to see and hear danger. It can also be operated at night time and deliver the cargo inside warehouses.

The total cost of ownership is lower than the equivalent diesel model as it can be electrically charged and has reduced service costs. It is engineered with fewer moving parts, which reduces service time and spare parts costs.

"The MOFFETT eSeries is the natural choice for customers who need to enter low emissions zones, work at night or meet sustainability targets. However, as it's cheaper to run, safer and more comfortable, we think it will prove popular with customers in a wide range of industries. We are certain that drivers will appreciate working in an exhaust free environment and being able to hear what is happening around them," says Jann Hansen, director, sales & product business management, Truck Mounted Forklift, Hiab.

The MOFFETT eSeries comes with in-built connectivity so that owners can ac-

The new MOFFETT eSeries is currently available in four E4 NX models



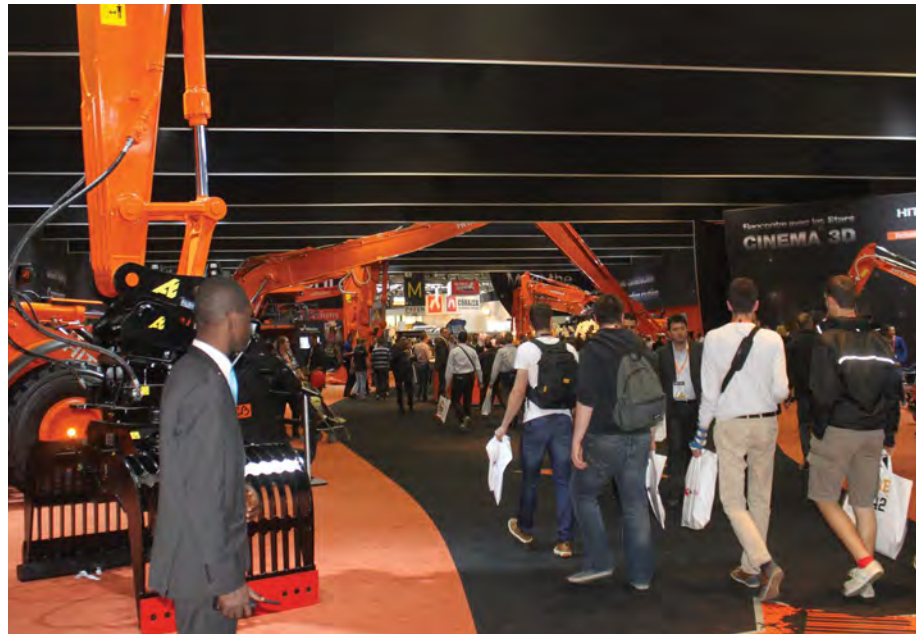
cess Hiab's HiConnect. HiConnect monitors over 100 machine parameters. Some are displayed on the HMI while the full range of data are available from the HiConnect web portal. Parameters range from battery capacity to delivery route and time, driver safety and service notifications. 🌐

INTERMAT Paris 2021 cancelled

Owing to the many uncertainties arising from the COVID-19 pandemic and which are likely to persist into the first half of 2021, the organisers of INTERMAT have taken the decision to cancel the edition due to be held from 19 to 24 April 2021 in Paris, and to organise its next edition in April 2024.

"The difficult decision has today proven to be unavoidable in view of a public health environment that remains uncertain heading into the first half of 2021 and which would not be conducive to holding the show in full confidence in April. The decision was made following consultations with industry professionals convened in the INTERMAT Board of Directors," said the organisers in a statement.

"While many French and foreign exhibitors, who had remained loyal to the reference event for construction and infrastructure, had already confirmed their participation at the 2021 show, the constraints in April remained too disadvantageous to allow the show's organisation to proceed smoothly."



The next INTERMAT Paris will be held in April 2024 with its ambition as strong as ever: to represent an international and

forward-looking showcase for innovation to conquer the construction markets of the future. 🌐

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Metso Outotec divests its aluminium business

Metso Outotec has signed an agreement to sell its aluminium business to REEL International, headquartered in France. The business was announced to be for sale a year ago and has been since reported under discontinued operations.

The business to be divested comprises of green anode plants, anode rodshops and casthouses used in aluminium smelters as well as related equipment and services. Approximately 120 Metso Outotec employees will join REEL upon closing, which is expected to take place during the first quarter of 2021.

The parties have agreed not to disclose the value of the transaction. The sale will have no material impact on Metso Outotec's financial result.

"I am very pleased that our aluminium technologies and experts will have a good new home at REEL International, where the development of the business will continue for the benefit of the global aluminium customers," says Jari Älgars, president of Metals



The business to be divested comprises of green anode plants, anode rodshops and casthouses used in aluminium smelters as well as related equipment and services.

business area, Metso Outotec.

"It's rare to find another business with such a complementary product portfolio in primary aluminium technology, and we are excited to be joining REEL International. I am confident that this transaction will enable our team to continue supporting our customers' businesses in an efficient way. The agreement is proof of the hard work and commitment of our team during this extraordinary year," says

Antti Koulumies, vice president, aluminium business line, Metso Outotec.

"We are pleased to welcome Metso Outotec's aluminium business and personnel to the REEL family. With our complementary product portfolio and geographical footprint, we will be able to serve our customers even better around the world," says Philippe Frantz, chairman of the board of REEL International SAS. 🌐

Kwatani grows its base of customised screening solutions

As leading vibrating screens and feeders specialist Kwatani has transitioned from equipment supplier to solutions provider, it has attracted customers from well beyond South Africa and even outside Africa. Its strong in-house expertise and design capability ensures that its customised solutions deliver optimal performance at the lowest possible lifecycle costs.

According to Kwatani GM sales and service Jan Schoepflin, the company's strong in-house expertise and design capability – combined with the world-class manufacturing quality it consistently achieves – ensures that its customised solutions deliver optimal performance at the lowest possible lifecycle costs.

"Our recent orders show that our customer base in Southern Africa remains strong, while there is growing recognition of our cost effective offerings in West Africa, East Africa and North Africa," says Schoepflin. "At the same time, orders from countries like Canada and Russia indicate that our markets abroad continue to grow."

Kwatani remains the market leader in the supply and servicing of vibrating screens and feeders on iron ore and manganese mines in South Africa's Northern Cape province. It also counts platinum, coal, diamond and gold mines in its customer base. Its West African orders have been mainly to gold mines, and there is growing potential for gold mining in East Africa, he says.

Over its four decades of operation,



Large scalper screen leaving Kwatani for the end user in an iron ore mining application.

Kwatani has produced about 16 000 custom-designed screens, and is building on average 30 to 40 units a month in its ISO 9001:2015 certified facility close to OR Tambo International Airport in Johannesburg.

"Our reputation has been built on prioritising what our customers need, and doing business with integrity and trust," Schoepflin says. "This means delivering on what we promise, and making sure that customers achieve the expected value from our products."

He highlights that the company's solution-focus is underpinned by its significant and ongoing investment in local skills, ensuring that its designs leverage strong mechanical and metallurgical engineering expertise.

"This confidence in our products allows us to offer a process guarantee to cus-

tomers, to deliver the tonnage, throughput and fractions that they expect," he says. "Depending on which country our customers operate in, they may also have different industry and quality standards/certification expectations and we work closely with them to understand these clearly and meet their requirements."

Schoepflin also emphasises the company's service capabilities, which include its local service centres to be closer to customers, and its support partners in other countries.

"The careful selection of these partners is vital to meet customers' stringent technical expectations," Schoepflin says. "In some countries, our partners can also manufacture components according to our drawings and specifications, should there be an urgent requirement from a customer." 🌐

Metric Automotive cleans components for OEMs

Metric Automotive Engineering now offers a cleaning service to OEMs for diesel engine components. Few OEMs have the equipment, resources or time to adequately clean components to the correct level of cleanliness required, and this prompted the company to offer this service.

"We found that few OEMs have the equipment, resources or time to adequately clean components to the correct level of cleanliness required. This prompted us to offer this service to our customers," says Andrew Yorke, operations director of Metric Automotive Engineering.

Cleanliness of diesel engine components cannot be underestimated prior to assessing the components for repair or remanufacturing work. Yorke says it is critical components are cleaned to a certain specified level of cleanliness to facilitate accurate inspections to be done.

"By offering this ancillary service we will remove some of the frustration from OEMs, while at the same time drive up efficiencies in the diesel engine component



An engine block being lowered into the tank at Metric Automotive Engineering.

remanufacturing sector," he says.

Metric Automotive Engineering has a long and impressive track record remanufacturing heavy diesel engine components across a host of industries. The company

offers services which include cylinder head remanufacture, cylinder block line boring, milling, honing and boring, camshaft grinding, crankshaft grinding, engine assembly and dynamometer testing. 🌟

Large screens for Nigeria show Weir Minerals' design depth

Two of the largest screens built by Weir Minerals Africa are being designed and manufactured in South Africa as part of a process solution for an iron ore mine in Nigeria.

According to Tisetso Masekwameng, GM comminution at Weir Minerals Africa, the flowsheet accepted by the customer includes equipment for screening, washing and grinding supplied by Weir Minerals.

"Within our scope of work are the two largest Enduron double-deck banana screens built by Weir Minerals," says Masekwameng. "This is made possible by the depth of design expertise in our Separation Technology Group, an eight-strong team conducting research and development."

Steven Hunter, separation technology group leader at Weir Minerals Africa, says the two 51-tonne Enduron double-deck banana (DBHG 43/97) screens for this project were built upon the designs of the Weir Minerals existing screens range. These large machines measure 4,3 m wide and 9,7 m long and can process 1 750 t per hour.

"The customer's production requirements demanded this considerable size, so we optimised the design by minimising mass without compromising structural integrity," says Hunter. "We conducted extensive finite element analysis (FEA) on the whole



Tisetso Masekwameng, GM comminution and Steven Hunter, technology group leader separation at Weir Minerals Africa.

machine but focused on the main structural elements, ensuring that the units were fit-for-purpose while still being light enough to be driven by the exciters."

Nonetheless, the size of the units still demanded the design and manufacture of Weir Minerals Africa's largest exciter yet – the Enduron LTX 10. With 120 t of excitation force (at maximum setting), these units will drive the screens at a stroke of 9,4 mm and a gravitational force of 4,6 G. Hunter highlights the close collaboration between the research & development and manufacturing teams that contributed to the successful development and testing of the Enduron LTX 10 exciters.

"The screens are also ready to be fitted

with our IIoT (Industrial Internet-of-Things) platform, Synertrex," he says. "This allows the machines to be monitored remotely; the system can measure the machine's performance any deviations arising that may require proactive attention."

The order for Nigeria also includes two Trio jaw crushers, two Trio cone crushers, two large 2 m x 8 m Trio apron feeders, two Trio pan feeders, eight Enduron vibrating screens and an Enduron HPGR (high-pressure grinding roll).

For the clay washing circuit, Weir Minerals Africa will supply the mine with a Trio twin-shaft blade mill and Trio twin-shaft coarse washers as well as Warman slurry pumps. 🌟

Faymonville's low loader with PA-X technology arrives in SA

The height of a special haulage convoy is decisive to clear power lines, bridges and other obstacles. With the low pendle-axle PA-X and its minimum loading height of only 790 mm, Faymonville offers a perfect solution to handle any challenging route sections easily.

CTS East Ltd from Brakpan, Gauteng recently received the first semi-trailer with this technology in South Africa. The stroke of 600 mm makes the five-axle semi-trailer off-road-capable. The steering angle of 60° ensures high manoeuvrability when the route demands it.

Additionally, the yellow low loader with a basic width of 3 000 mm has an hydraulic gooseneck, double ramps with anti-slip rubber cover and a loading platform that can be double extended from 11 500 mm up to 27 400 mm. The robust chassis design also enables the transport of compact loads such as transformers, without compromising on deflection.



The yellow low loader with a basic width of 3 000 mm has an hydraulic gooseneck.

CTS East belongs to the biggest abnormal and heavy transportation businesses in South Africa and the

company's iconic yellow fleet is well-known across the country's large road network. 🌐

Chaos at Beitbridge border post could have been avoided – RFA

The delays at the Beitbridge border post during the festive period, which resulted in the deaths of four truck drivers, a female bus passenger, as well as numerous cases of drivers collapsing from the heat and lack of water, could have been avoided, according to the Road Freight Association (RFA).

Since the Department of Health removed the requirement for truck drivers to be tested for COVID-19 at Beitbridge, the queues have reduced significantly: from 20 km to less than 5 km in recent days. "We are relieved that the queues are far shorter, but the crisis is not over yet," says Gavin Kelly, CEO of the RFA.

"The deaths could have been easily avoided," says Kelly. "We know that the border is bustling every festive season, as foreign nationals working in South Africa return home for the holidays. To prevent this crisis from happening again, there needs to be joint coordination between the role players involved at the border – including the private sector. The RFA is a critical stakeholder in this supply chain and will actively support a body that is put together to address the chaos at the border post."

"We further reiterate our previous statements, that truck drivers were not to blame for the delays," adds



Kelly. "The fact that the length of the queues has been reduced by 75% since COVID-19 testing for truck drivers at the border post has been lifted, is proof of this. Recent statements from the Minister of Health and the Parliament Oversight Committee of Home Affairs blaming truck drivers are simply not true. The total lack of planning by the Departments of Health and Home Affairs is the reason for the situation at the border".

Before transporters can move to the border, they must complete pre-clearing and have valid tests for their drivers. These requirements from SARS have

been in place for years and SARS has noted that over 95% of transporters crossing at Beitbridge are – and remain – compliant.

The RFA remains committed to the smooth flow of traffic at Beitbridge and looks forward to participating in a forum that pro-actively plans and manages the border post. "Beitbridge is a critical enabler of trade and business in Africa," concludes Kelly. "The cost of delays at the border post is roughly R5 000 per truck per day. This amounts to R250 000 per day per km of traffic queue. This is unsustainable, unnecessary and unacceptable." 🌐

New generation rotary telehandler range from Bobcat

Inspired by the company's 'Next is Now' philosophy, Bobcat has announced a major new development from the company in the telehandler market. Bobcat has collaborated with Magni TH of Italy, to launch an expanded line of new generation rotary telehandlers for markets in Europe, the Middle East and Africa (EMEA) and Russia and the CIS countries.

The new Bobcat rotary telehandler range includes 10 Stage V compliant models for the European market, with lifting heights from 18 to 39 m and lifting capacities from 4 to 7 t. These are complemented by another four Stage IIIA engine powered models aimed at the Middle East, Africa and Russia/CIS regions with lifting heights from 18 to 25 m and lifting capacities from 4 to 6 t.

Olivier Traccucci, Bobcat telehandler senior product manager, says: "Our new rotary telehandler range offers an expanded model selection and increased lifting heights and lifting capacities. The new range offers cutting-edge technology that continues the theme of reinvention that is at the core of our 'Next is Now' philosophy. As a result, they offer enhanced 360° performance to create

the ultimate tools for even the most complex site handling jobs. A big choice of over 20 attachments and various options also ensures that working at height has never been so versatile, efficient, comfortable and safe."

Available to order now with some of the machines already delivered in Europe, the new rotary telehandler range from Bobcat was introduced at an online launch event held on December 2, 2020. This was a continuation of the Next is Now strategy presented for the first time in EMEA and Russia/CIS at a previous online event in October 2020, where Bobcat launched 48 products in 12 different categories.

The rotary telehandler market continues to grow worldwide. In Europe, for example, the market has increased over the past five years by 23% and, in 2019, it reached over 3 000 units for the first time. In fact, 85% of the global market volume is in the EMEA region.

Invented in the early 1990s, rotary telehandlers feature a rotating turret and four stabilisers, which enable them to work solidly in place with full operating capacity. The 360° turret rotation allows the machines to handle loads everywhere in the working envelop



Bobcat's new rotary telehandler range offers an expanded model selection and increased lifting heights and capacities.

without needing to move. This is an ideal solution in urban areas where spaces are tight and manoeuvring is limited.

Their ability to work from a single point to cover all of a site and the fact that they can be used from the first to the last day of a construction project have made them an increasingly attractive machine for construction sites. Rotary telehandlers are often called 3-in-1 machines as they combine the attributes of a telehandler with those of an aerial working platform and a crane. Applications are therefore mainly in construction (80%) but also in industrial maintenance. 🌱

Volvo CE and Volvo Trucks deliver all-electric products

December 17 saw the first delivery of a Volvo Construction Equipment (Volvo CE) electric machine and the first all-electric Volvo FE truck in France, thus accelerating the long-term transformation to more sustainable transport and infrastructure solutions.

The recipient of the new products – an electric Volvo FE truck, with electrically powered crane, and a Volvo ECR25 Electric compact excavator – was leading French contractor and long-term Volvo customer Eiffage. The machines support Eiffage's low carbon strategy and are to work on the ambitious Grand Paris Express transport project in the French capital. This is a rapid transit initiative being built in the French capital that will add 200 km of new track and 68 new stations, ultimately serving two million passengers a day.

The handover of Volvo Trucks and Volvo CE's first all-electric products was marked with a small ceremony in Paris. It was attended by Benoit de Ruffray, Eiffage Group CEO, and representative of Volvo Truck and Volvo CE's France-based teams. Due to COVID-19 travel restrictions, Volvo Group CEO Martin Lundstedt, Volvo CE President Melker Jernberg and Volvo Trucks President Roger Alm participated digitally.

"By 2030, we want over a third of the ma-

chines the Volvo Group sells to be electric. We can't do this alone, we want to do this together with our customers, partners like Eiffage and the wider society," says Volvo Group CEO, Martin Lundstedt. "This is an exciting landmark on this journey to shape the future of transport and infrastructure."

"The deliveries of this electric truck and construction machine is the start of a revolution in transport and infrastructure solutions," agrees Melker Jernberg, President of Volvo CE. "Make no mistake, electric machines are not going to remain a niche product area. Over the course of the next years and decades they will become the dominant source of low-or-no emission power. When coupled with clean energy, their potential to support climate change goals, improve air quality and help build the world we all want to live in cannot be underestimated. I am very pleased that we are starting this journey with friends such as Eiffage."

"The support from forward-thinking customers like Eiffage is important for the future development of sustainable transport solutions. Keeping a close dialogue with customers means that we all learn faster and together can accelerate the necessary transition into a fossil-free future," says Roger Alm, President of Volvo Trucks.

This first delivery in France represents, for both Volvo CE and Volvo Trucks, an important and real step on the way to zero emissions. Thanks to their low noise and vibration levels, and their absence of exhaust gases, electric trucks and machines are well suited to meeting tough environmental regulation in urban areas, confined spaces, or specific works. They offer new opportunities for urbanization as well as road infrastructures.

The Volvo FE Electric 6X2 truck was built at the Volvo plant of Blainville sur Orne in France. It will be used to deliver and collect tools and spare parts for demolition works of Part 1 – line 16 and Part T2B of line 15 of the Grand Paris Express project. It will do around 150 km per day – all of them with zero exhaust emissions.

The Volvo ECR25 Electric compact excavator, will be used by Eiffage in support of demolition and dismantling activities, again with zero CO₂ emissions and far lower noise and vibration levels than traditional diesel engine machines. The 2,5-t machine has the same performance as its diesel counterpart, and its battery pack offers four hours work time, depending on application. The Volvo ECR25 Electric was developed and built at Volvo CE's Belley factory in France. 🌱

Structural changes to strengthen Case CE's position in South Africa

CNH Industrial is strengthening its local presence with the acquisition of four divisions of Capital Equipment Group (CEG), previously owned by Invicta Holdings Limited, which include Case CE distributor, CSE. The acquired divisions will form part of a fully-owned CNH Industrial legal entity based in South Africa.

Following collaboration stretching over several decades, Case CE's acquisition of South African distributor CSE by the brand's parent company, CNH Industrial aims at bringing the brand even closer to its customers and market as a whole, further enhancing on-ground service and exceptional customer support.

CSE is one of the four divisions of Capital Equipment Group (CEG), which CNH Industrial has purchased from Invicta Holdings Limited, and forms part of a fully-owned CNH Industrial legal entity based in South Africa. The other divisions are the agricultural distributor Northmec; spare parts distributor NHSA; and Landboupart, a distributor of agricultural equipment spare parts and implements.

By taking full operational management of its commercial distribution and aftermarket network, CNH Industrial aims



CSE is a well-established equipment distributor operating for more than 50 years in the market and the sole distributor of CASE CE's full product offering.

to further develop its brands' presence together with aftermarket sales and services in South Africa and other southern African markets, strengthening its position and ties with its customer base.

CSE is a well-established equipment distributor operating for more than 50 years in the market and the sole distributor of CASE CE's full product offering. Commercial and aftermarket

sales and services will continue to be delivered at the high standard expected by customers, says Graham Forte, CSE's MD. Through innovation and specialised technical support in both commercial and aftermarket services, CSE is confident to continue to be market leader by delivering good customer service and comprehensive solutions for construction-related sectors. 🌐

LiuGong holds global dealer conference

On December 15, 2020, LiuGong held its annual global conference in Liuzhou, China. The event was attended by nearly 500 delegates, including representatives from dealers from more than 100 countries, as well as customers, industry association delegates, business partners, LiuGong management team and staff attending both in person and online.

Every year LiuGong hosts the conference with its dealers and customers, sharing the results achieved in the past year and outlining the roadmap for the future, an annual tradition since 2003. The LiuGong management team reviewed the 2020 overseas business performance and shared its strategy and plans for 2021. In the first three quarters of 2020, LiuGong's operating income increased by 18.9% year-on-year despite the tough economic conditions. However, the company, together with its dealers, revealed a higher sales goal for 2021.

LiuGong always strives to be closely connected to its dealers and customers. The global conference goes beyond a corporate platform; it creates a valuable place where feedback, dialogue and collaboration take centre stage, which is immensely valuable to the future development of the company's global business.

2020 saw LiuGong adopt a new, digital approach to unveiling its new products through augmented reality. This allowed viewers to explore LiuGong's wide range of machines, from the Red Dot award winning TD-16N to the 990F excavator. It also allowed viewers who were not at the conference to experience the new products as those who were there in person.

During the event, LiuGong also showcased its Equipment Intelligence Management System (iLink) and smart mining solutions – all in a simple to understand and graphical display.

Every year, LiuGong presents



Top management group picture at the conference.

awards to its highest achieving dealers around the world and this year was no exception. Several sub-Saharan African dealers who have shown a consistent and high performance from October 2019 to September 2020 were recognised. Among the developing markets in Africa the performance of South Africa, Kenya, Nigeria, Zambia, Zimbabwe and Ghana has been prominent across earthmoving, forklifts and cranes.

LiuGong started its overseas business in 2003, and its global presence has been growing rapidly, including R&D and parts distribution centres in every key markets, as well as manufacturing facilities in Europe, India and Brazil. Since then, LiuGong has delivered over 100 000 machines in more than 170 countries through its dealer network and key accounts. 🌐

Bosch Rexroth SA appoints business intelligence manager

Dianne Seymour has been appointed group business intelligence manager at the Bosch Rexroth South Africa Group of Companies, effective 1 October 2020.

Seymour has 15 years' experience in enterprise resource management (ERM), during which time she began a consulting company specialising in Syspro ERP. Her focus was helping clients across the pharmaceutical, manufacturing, mining and distribution industries with Syspro ERP.

The corporate sector attracted Seymour with the offer of a position as a business analyst in 2015, and after only two years a promotion to business systems manager was the beginning of her rise through the ranks. The position saw her managing and overseeing business software development, support, maintenance, acquisitions, consultants, budgets, software projects and junior personnel.

Currently reading for her BCom degree in Information and Technology Management at MANCOSA, Seymour has also completed several courses that better equip her to deal with the demands of the business intelligence environment. Courses include Syspro modules, Workflow (Syspro and Flowgear), Basics of Supply Chain Management (SAPICS), Project Management (UNISA), and Microsoft SQL up to MSCA level.

"I love sharing my passion for technologies that make life easier," Seymour



Dianne Seymour, newly appointed business intelligence manager at Bosch Rexroth SA

says. "So much can be achieved with today's technology, making it easier to work smarter, not harder." 🌟

Strong bidder participation at Ritchie Bros. online auction

Ritchie Bros.' recent online heavy equipment auction in Dubai saw strong bidder participation from buyers in the Middle East and African region, further demonstrating growing popularity for the organisation's Online Timed Auction system.

Ritchie Bros. completed its December online machinery and heavy equipment auction in Dubai, selling over 1 450 pieces of equipment, trucks and other items for more than 210 of its consigning customers.

Over 1 200 online bidders from 83 countries registered for the December Dubai event, which concluded on December 16. More than 40% per cent of the equipment in the auction was purchased by bidders from countries outside the UAE, including Egypt, Ghana, Nigeria and South Africa. The auction was conducted entirely online using Ritchie Bros.' easy-to-use Online Timed Auction system.

The Dubai auction inventory ranged from excavators, wheel loaders, crawler tractors and backhoes through to articulated dump trucks, mobile cranes and more. This edition of the auction also saw increased numbers of buses, pickup trucks, and passenger vehicles being consigned, further broadening the auction inventory and range of options for buyers.

"We saw an impressive number of registered bidders participate in our December online auction," says Eduard Faig, regional sales manager at Ritchie Bros., Middle East. "After the auction, we received a lot of positive feedback from online bidders who told us how easy it was to use our Online Timed Auction system, accessible through our website via our mobile app."

Bidders could research sale items on the Ritchie Bros. website and app, or in person during viewing days, following the strict health, safety and physical distancing precautions in place at the Ritchie Bros.' Dubai auction site. Ritchie Bros.' Timed Auctions have no physical auctioneer, with bidding open for several days, with auction lots closing at staggered times during the final days.

Faig concludes: "Bidders enjoy the online experience because there's more time to place bids, plus they

receive status notifications on their devices, which makes it both convenient and fun. It is exciting to see businesses embracing our technology and confidently buying and selling at our auctions throughout this challenging period."

Ritchie Bros. is currently listing new items for its next quarterly auction, which will take place in March 2021. 🌟



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HOW MINING AND METALS INDUSTRIES CAN NAVIGATE THE IMPACT OF COVID-19

COVID-19 has created a universal imperative for governments and businesses to take immediate actions with significant financial ramifications. According to our latest study, market capitalisation for the biggest 2 000 companies worldwide has declined by 24% since the beginning of the outbreak, losing more than US\$12,4-trillion. By Eric Croeser, Industry X MD for Accenture in Africa.

Market conditions correlate more closely to the global financial crisis than any of the previous epidemics (Ebola, H1N1 and MERS). The industry as a whole – including gold miners – has seen strong devaluation of their stocks. Indicators for commodities pricing and demand projections exacerbated the situation.

What needs to happen next? In the current climate, your decisions will determine how your organisation fares in the near term – which is critical. But they will also have a significant impact on how well you operate in the future. This means that smart leaders will seize this opportunity to take swift action to avoid business disruption and potential revenue loss – and at the same time, forge new levels of trust with their workforce and position their businesses for greater resiliency and productivity in the future.

Each company, industry and region will have different needs and requirements for managing people, the workplace, customer service, data and business continuity. But there are six major foundations that all organisations should consider as they move forward:

1. Empower people, operate with purpose

How you protect and empower your people, adapt workplace approaches and expand connections to partners and local communities not only determines how you operate in the near term, but also how you will operate in the future. For its part, BHP announced COVID-19 response measures that are expected to accelerate the delivery of about US\$100-million to its small business partners, many of whom are struggling with the pandemic.

2. Assess liquidity

Mining and metals companies should conduct scenario modelling, looking at controllable uncertainties for demand and supply and the triggers affecting revenue

and cost. They can then formulate action plans to respond – while considering the capital expenditures that would be required from a supply, labour, resource perspective and whether they can actually execute those projects.

3. Assure supply and delivery

Companies can reforecast their demand plans for the production year by working collaboratively with their largest end customers, and those with long-term supply contracts. Understanding their needs through the crisis and beyond can help you identify the correct production profile for your situation and avoid the excess use of working capital. It may be useful to look to China to see how its economy continues to react.

4. Secure operational continuity

Companies should consider rebalancing production. On a tactical level, that means operating at a predictable production output capacity to match re-forecasted demand, and to avoid work in progress inventory stockpiling and re-handling costs. Barrick Gold recognised such issues and limited all non-essential projects in response to the pandemic. The company has also identified alternative suppliers and shipping routes and put contingency plans into place for other parts of its operations.

5. Uncover opportunities

As companies rethink operations and rebalance production capacity, they should be alert to opportunities where necessity opens the door for strategic improvements that can support future growth. For example, a plant shutdown could provide a window for asset upgrades and modernisation. Remote training or applied technologies could be used to upskill an idled workforce that is staying home. And in a changing landscape, it might make sense to integrate a key supplier into your operations, or a competitor might be a target for acquisition – or for a strategic partnership.



Assessing how digital technologies and analytics can be used to increase resilience and efficiency is paramount.

6. Re-platform for a digital world

Assessing how digital technologies and analytics can be used to increase resilience and efficiency is paramount: remote operations, data science-based optimisation, automation, robotics and more. First, understanding the tangible business applications is crucial. Second, re-platforming core technologies to support a digital future does not require a wholesale change.

Many existing systems are critical to daily operations, and re-platforming all at once introduces an unacceptable level of operational risk. What is required is not only a replacement of the technology, but also the interwoven business processes and policies. And a pivot of skill sets across the workforce to be adept at using new technologies, platforms and services. 🌐

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