

# CAPITAL EQUIPMENT<sup>1</sup> NEWS

For informed decision-making

FEBRUARY 2021

## UD TRUCKS EXPANDING OFFERING FOR URBAN AND INTER-CITY DISTRIBUTION



**EXTRA HEAVY COMMERCIAL VEHICLES:** Unpacking Volvo Trucks' record-breaking truck launch

**PNEUMATIC TYRE ROLLERS:** Wirtgen Group SA rolls in HP Series pneumatic tyre rollers

**EXCAVATORS:** Delivering more gains for the contractor

**GRADERS**  
MOTOR GRADERS: GROWING  
FUNCTIONALITY MAY  
ACCELERATE MARKET  
DEVELOPMENT

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UD TRUCKS



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# IS THE CAPITAL EQUIPMENT SECTOR IN FOR A GOOD YEAR IN 2021?

**T**hat 2020 will be remembered as a difficult year, particularly by many in the South African capital equipment space, is no overstatement. However, is there any reprieve in sight for the sector in 2021? Judging by the state of affairs and projections in key recipient markets of mining, construction and quarrying, the market is likely to enjoy a good run this year. By its nature, the capital equipment sector tracks the movement of these markets.

I recently had a chat with Nivaash Singh, co-head of mining and resources finances at Nedbank Corporate and Investment Banking, who regards the

current global commodities' position as "a bull sector within a bear market", representing a unique opportunity for the African mining sector and its related supply chains.

Under normal circumstances, believes Singh, the performance of the global mining sector, like most other sectors, tracks the movement of global GDP. This direct correlation has become well entrenched over the years, which is why, traditionally, when global GDP figures trend upwards, most mining counters follow suit. Of course, the opposite has also generally been the case and the mining sector has historically borne the brunt of periods of negative GDP growth.

While the overwhelming majority of industries and economic sectors have found themselves in rapid decline due to the COVID-19 pandemic, the mining sector has largely bucked the trend. In fact, mining and resources currently find themselves in what Singh terms "a bull market", seemingly immune to the widespread carnage being wreaked in most other sectors by the pandemic.

This bull run is expected to continue this year as precious metals such as gold and PGMs (platinum group metals) continue to tick upwards. Demand for critical metals such as copper, lithium, rare earths, tantalum and vanadium, among others, will continue to skyrocket to feed the insatiable appetite of high-tech device manufacturers, the renewable energy sector and the ever-growing battery market.

Meanwhile, construction activity in South Africa and elsewhere on the continent is expected to pick up significantly as governments prioritise accelerated infrastructure development as the path to quick economic recovery. Governments understand the importance of having a robust, multi-year project pipeline to get their economies back on track, and this will definitely give the capital equipment sector, a big boost.

To provide context, in June last year, the South African government hosted the Sustainable Infrastructure Development Symposium, where President Cyril Ramaphosa made promising commitments to prioritise infrastructure development to support structural transformation, creation of jobs and economic recovery. The symposium notably reflected on a number of projects that have been identified by the National Infrastructure Fund. The fund has finalised a list of projects worth R700-billion over the next 10 years.

Despite a toxic political environment, Zimbabwe is actually another market exhibiting noteworthy opportunity for capital equipment suppliers as the country is currently driving an array of key infrastructure projects. To give an idea, at least US\$122-million has already been spent under the Public Sector Investment Programme at the Gwaii-Shangani dam project to address perennial water challenges in Bulawayo, Zimbabwe's second largest city. Elsewhere, the Beit Bridge-Harare-Chirundu road project is ongoing. The 971-km project involves the dualisation, upgrading and tolling of the country's major highway. The estimated completion date is 2022 and the projected total project cost is US\$2,7-billion.

Projections also show that the quarrying sector, another key market for the capital equipment industry, is in for a good run in 2021. Speaking during a recent webinar attended by **Capital Equipment News**, renowned economist Dr Roelof Botha noted that nearly all major building and construction indicators show a V-shaped recovery, which translates into rising demand for construction materials such as cement, sand and stone.

In conclusion, I believe that as mining, construction and quarrying are carving out unique pathways to recover from the COVID-19 crisis, indications are that the capital equipment market is likely to enjoy a good sales run this year. 🌟



**Munesu Shoko – Editor**



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# ANYTHING BUT GENERAL CARGO

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# SCANIA



Through UD Trucks' expansion programme, the new Croner 4x2 PKE 280 truck-tractor will be classified as an extra heavy commercial vehicle, operating in the up to 350 hp lightweight truck-tractor segment.



## UD TRUCKS EXPANDING OFFERING FOR URBAN AND INTER-CITY DISTRIBUTION

**With the recent addition of two new models to the Croner range – the Croner LKE 210 freight carrier and the Croner 4x2 PKE 280 truck-tractor – UD Trucks Southern Africa is bolstering its offering for the competitive urban and inter-city distribution sector, writes *Munesu Shoko*.**

**U**D Trucks Southern Africa has brought to market two new additions to its Croner range to meet increased demand in the urban and regional logistics sector. Since its launch in 2017, UD Trucks' Croner range initially operated in the heavy commercial vehicle (HCV) segment only. Through UD Trucks' expansion programme, the new Croner 4x2 PKE 280 truck-tractor will be classified as an extra heavy commercial vehicle (EHCV), operating in the up to 350 hp lightweight truck-tractor segment. The new 15-tonne

LKE freight carrier will operate in the 8-tonne payload segment of the HCV segment.

Rory Schulz, UD Trucks Southern Africa's marketing and sales director, says the company is expanding its Croner range to improve its offering in urban and inter-city distribution. "In the competitive 8 to 9-tonne payload segment, we saw the need for a fuel efficient, high payload unit with good drivability and value for money. With the new model introductions, we are improving payload, fuel efficiency and adding more driver comfort, as well as extending service

**QUICK TAKE**



UD Trucks Southern Africa has brought to market two new additions to its Croner range – the Croner LKE 210 freight carrier and the Croner 4x2 PKE 280 truck-tractor

intervals," says Schulz. "With UD Trucks Telematics Services as standard and a region-wide dealer network, fleet owners are supported no matter where they operate."

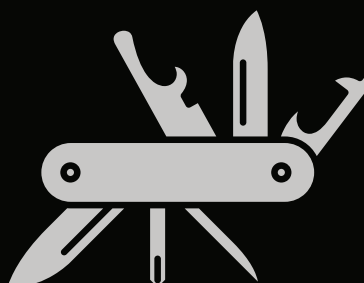
In 2017, **Capital Equipment News** was part of a media delegation that attended the global launch of the Croner in Thailand where the initial 13 variants were unveiled. Having introduced the 6x2 PDE280 freight carrier in 2020, the addition of these two models – the



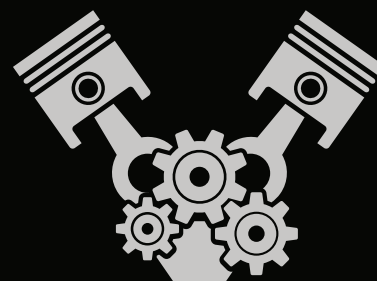
The LKE 210 has a low tare mass and optimised wheelbase of 5 500 mm for both volume and mass payloads.



In the competitive 8 – 9-t payload segment, UD Trucks saw the need for a fuel efficient, high payload unit with good drivability and value for money



The Croner LKE 210 freight carrier is a multi-purpose model for in-city or city-to-city distribution



The Croner 4x2 PKE 280 truck-tractor comes with a GH8, 8-ℓ engine and an Allison 3000 automatic transmission series, with an emphasis on urban and city-to-city distribution, as well as inter-regional haul

Croner LKE 210 freight carrier and the Croner 4x2 PKE 280 truck-tractor – brings the total of variants in this range to 16.

“The world has changed significantly during the past year, and so has the way we live our lives and run our businesses,” says Filip Van den Heede, MD of UD Trucks Southern Africa. “While adhering to government regulations, we also understand that there is a need to continue with

economic activities, and that is why we are more committed than ever to support the logistics industry in the country.”

#### Trucks in detail

The Croner LKE 210 freight carrier is a multi-purpose model for in-city or city-to-city distribution. It is powered by a GH5, 5-ℓ engine and is driven by an Allison 2500 series automatic transmission.

The 850 Nm of torque along with a good transmission ratio ensure the truck can quickly get to the 60 km/h mark in city, or to the 80 km/h where the law permits. The LKE 210 has a low tare mass and optimised wheelbase of 5 500 mm for both volume and mass payloads. All of this combine to provide a truck with class-leading payload productivity.

The automatic transmission has proved





"The world has changed significantly during the past year, and so has the way we live our lives and run our businesses. While adhering to government regulations, we also understand that there is a need to continue with economic activities, and that is why we are more committed than ever to support the logistics industry in the country."

Filip Van den Heede, MD of UD Trucks Southern Africa



"In the competitive 8 to 9-t payload segment, we saw the need for a fuel efficient, high payload unit with good drivability and value for money. With the new model introductions, we are improving payload, fuel efficiency and adding more driver comfort, as well as extending service intervals."

Rory Schulz, marketing and sales director at UD Trucks Southern Africa

TALKING POINTS

to be a game changer in the distribution segment as it lowers costs and downtime, given that the traditional manual transmission is susceptible to wear-and-tear, especially to its clutch in the long run. The automatic transmission is also crucial for markets like South Africa where there is a documented shortage of drivers.

"The Allison automatic transmissions ease the job at hand for drivers who spend the day in the urban environment, facing long hours of traffic with multiple stops and cargo drops," explains Schulz. "The new generation torque converter with early lock-up also ensures a smooth and easy drive so driver fatigue is reduced, which means the driver can concentrate on situational driving. Additionally, the enhanced power shifts lead to more efficient fuel consumption, comfort, manoeuvrability and performance."

The Croner 4x2 PKE 280 truck-tractor comes with a GH8, 8-ℓ engine and an Allison 3000 automatic transmission series, with similar emphasis on urban and city-to-city distribution, as well as inter-regional haul. The powerful six-cylinder engine complements the truck's long haul and heavier load capacities.

"The work a vehicle does, and the resources required to do it, are essential to the success of any fleet," says Schulz. "Productivity to us means how much payload you can carry, at the highest possible legal speed, with as little fuel as possible. And the Croner certainly delivers on all these factors in a smart and modern

way, day in and day out."

UD Trucks' Croner range is assembled at its plant in Rosslyn, Gauteng, according to the company's global quality standards.

"When we originally launched the Croner range, we wanted to offer fleet owners trucks and solutions that maximise uptime and productivity. These new additions to the Croner family, are no exception," says Van den Heede. "We know how important it is to make every moment count in the transport business."

The new Croner range is also said to raise the bar when it comes to fuel efficiency; it is up to 5% more fuel efficient than its predecessor. Key to improved fuel efficiency is the new GH E engine series with common rail fuel injection technology. The regulation of fuel quantity and injection timing are electronically controlled via the Engine Control module.

With a maximum torque range of up to 1 050 Nm, the engines offer high torque over a wide speed range, translating into a broad economy band. The GH E engines are also able to operate efficiently without excessive revving outside the economy band, generating sufficient pulling power with less fuel consumption, which also translates into less component wear.

In the interior, the vehicle allows for a variety of fuel efficiency control features. The cruise control, for example, reduces driver workload on longer journeys and helps reduce fuel consumption by maintaining a constant speed.



The Croner 4x2 PKE 280 truck-tractor is suited for urban and city-to-city distribution, as well as inter-regional haul.

All Croner models also come equipped with an on-board fuel coach. It's clearly displayed at the centre of the instrument cluster to guide drivers to use optimal revs or reduce unnecessary acceleration in real time.

### New strategy

Globally, UD Trucks launched its new "Better Life" strategy that challenges the way it cares for people and the planet, by bringing sustainable transport solutions in line with the current transformation of the logistics industry.

"We believe the strategy will lead to a better life for all within the spheres we operate in," explains Van den Heede. "As a challenger and innovator, we are continuously challenging the status quo, and know that our products, service and people can have a positive impact on the world around us."

With the launch of the new Quon in 2019 with Euro 5 emission standards, the company entrenched this vision into practice. Since this launch, UD Trucks has secured the availability of Ad Blue, which helps reduce nitrous oxide emissions for Quon customers across South Africa,





which is proof of the company's Better Life strategy in practice.

### Volvo Group and Isuzu Motors strategic alliance

In December 2019, the Volvo Group and Isuzu Motors announced the signing of a non-binding Memorandum of Understanding with the intent to form a strategic alliance within commercial vehicles to capture the opportunities in the ongoing transformation of the industry. End October 2020, the binding agreement was signed. The alliance between the Volvo Group and Isuzu Motors is set to build long-term and robust relationship that will encompass but not be limited to:

1. Forming a technology partnership intended to leverage the parties' complementary areas of expertise within both well-known and new technologies and creating a larger volume base to support investments for world-class technology.
2. Creating the best long-term conditions for a stronger heavy-duty truck business for UD Trucks and Isuzu Motors in



The Allison automatic transmissions ease the job at hand for drivers who spend the day in the urban environment, facing long hours of traffic with multiple stops and cargo drops.

- Japan and across international markets by transferring ownership of the complete UD Trucks business from the Volvo Group to Isuzu Motors. This will accelerate growth by leveraging greater volumes and complementary capabilities, creating significant synergies for Isuzu Motors.
3. Exploring further opportunities for

even broader and deeper collaboration within the commercial vehicle businesses across geographical areas and product lines for future urban logistics solutions.

Final closing is expected during the first half of 2021. The transaction is subject to certain conditions, including approval from regulatory authorities. 🌐



# UNPACKING VOLVO TRUCKS' RECORD-BREAKING TRUCK LAUNCH

**In what is the biggest ever truck launch in the company's history, Volvo Trucks South Africa has unveiled four new-generation extra heavy commercial vehicles – the Volvo FH, FH16, FM and FMX – with a strong focus on the driver environment, safety and productivity, writes *Munesu Shoko*.**

**I**n what Marcus Hörberg, vice-president of Volvo Group Southern Africa, terms a big, forward-looking investment in the future of the company and, ultimately, the success of local transport customers, Volvo Trucks South Africa has brought in four new extra heavy commercial trucks to the local market.

To facilitate the local assembly of all the new models at the Volvo Trucks South Africa's plant in Durban, KwaZulu-Natal, the company invested more than R2-million in the upgrade of tooling and equipment in the plant. Amid the travel constraints brought by the COVID-19 pandemic, Volvo Trucks also invested in the installation of IT equipment and technology, which allowed the company's global experts to remotely support the South African team.

With a strong focus on the driver environment, safety and productivity, the range is said to address transport customers' needs today. Hörberg says an expected growing demand for

transport is putting pressure on the availability of skilled drivers globally. To help customers recruit and retain the best drivers, Volvo Trucks has focused strongly on developing the new trucks to make them safer, more efficient and more attractive working tools for qualified drivers.

"Our aim is to be our customers' ultimate business partner and helping them attract the best drivers in an increasingly competitive market," says Hörberg. "We are really proud of this big forward-looking investment in the future of our company, and ultimately, the success of our customers."

Safety is also a key design focus in the new truck range. Safety has been further improved with functions such as adaptive high beam headlights in the Volvo FH and Volvo FH16. The system improves safety for all road users by automatically disabling selected segments of the LED high beam when the truck approaches oncoming traffic or another vehicle from behind.

Driving is also facilitated by an improved Adaptive Cruise



The new Volvo FH, Volvo FH16, Volvo FM and Volvo FMX are now available in the local market.



By combining a powerful 16-l engine of up to 700 hp, with improved manoeuvrability, the latest safety technology and greater driver support, the new Volvo FH16 gives superior productivity for the most demanding transport tasks.



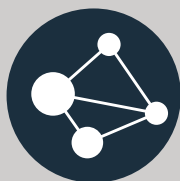
Volvo Trucks South Africa's launch of four new-generation extra heavy commercial vehicles – the Volvo FH, FH16, FM and FMX – is the biggest in the company's history



All the new models are locally assembled at Volvo Trucks South Africa's plant in Durban, KwaZulu-Natal



All the new models are equipped with a new driver interface for information and communication, aimed at making it easier to overview and manage different functions, creating less stress and distraction



The new Volvo FMX features the heaviest addition to Volvo's chassis range – a 38-t bogie that allows for a gross combination weight of up to 150 t

## Volvo FH

Volvo Trucks' new Volvo FH is made for a truck's most precious cargo – the driver. With a re-imagined cab, innovative safety features and a driver-focused working environment, the key aim of the new design is to give the driver a more productive, safe and comfortable life on the road.

The Volvo FH series has been a favourite among truck drivers for many years, especially for those who spend a good portion of their lives on the road.

"With the new Volvo FH, we are continuing our clear focus on designing trucks and offering services that can help drivers do an outstanding job," says Hörberg. "A good driver can make a huge contribution to a fleet owner's profitability. By launching this new truck, which prioritises the professional driver's productivity and comfort, we have taken an important step forward in helping our customers attract and retain the best drivers in the industry."

The attention given to drivers is most obvious in the updated interior working environment. Their workspace is centred on a modernised dashboard, which features a fully digital 12-inch high resolution instrument display and includes an open storage space with motion-sensor controlled lighting. The instrument display allows the driver to choose up to four different screen views, depending on the driving situation and the information they

Control (ACC) for speeds down to zero km/h and Downhill control that automatically activates the service brakes when extra brake force is needed to maintain constant downhill speed.

"Safety is in the Volvo DNA and the safety features of our new truck range reflect our commitment to increasing safety for all road users," states Hörberg.



"Safety is in the Volvo DNA and the safety features of our new truck range reflect our commitment to increasing safety for all road users."

Marcus Hörberg, vice president of Volvo Group Southern Africa



With increased front axle loads of up to 20 t and a 38-t bogie, the new Volvo FMX is built for tough conditions in the construction and mining sectors.

prefer to have displayed.

Using various driveline and chassis configurations, the new Volvo FH can be tailored to suit a wide range of applications and enable significant fuel and carbon (CO<sub>2</sub>) emission savings. In long-haul operations for instance, the new Volvo FH with the updated D13A engine with Torque Assist can deliver fuel savings of up to 3%.

Volvo Torque Assist is intended to reduce fuel consumption by providing more efficient driving when the cruise control is disabled in long haul operations. These innovative functions will help drivers save fuel even when cruise control is not activated. I-Cruise, Volvo Trucks' intelligent cruise control, is still the best way to optimise fuel consumption, but sometimes it might not be applicable.

Volvo Torque Assist is designed to give more fuel-efficient driving by automatically adapting the truck's torque and acceleration to the road topography, the load and speed changes. Another supporting function keeps the amount of injected fuel constant after the engine's 'green range' has been passed. The slightly compromised performance is compensated by improved fuel economy.

The pedal map has also been recalibrated. A less sensitive pedal creates a smoother torque development, which, in turn, makes the truck easier to control.

The software also gives a more significant result with heavy loads, many slope changes or large speed variations, while drivers transporting lighter loads with constant speed on flat roads will save less fuel.

In many European markets, the Volvo FH is available with the Euro 6 compliant gas-powered LNG engine that offers fuel efficiency and performance on par with that of Volvo's equivalent diesel trucks, but with a far lower climate impact.

The gas engine, which is currently being tested in SA, can run on either biogas, which cuts CO<sub>2</sub> by up to 100%, or natural gas which reduces CO<sub>2</sub> emissions by up to 20% when compared with Volvo's equivalent diesel trucks. This relates to emissions from the vehicle

during usage, known as tank to wheel.

Productivity, another important customer priority, is further optimised on the Volvo FH due to its capacity for increased front axle loads, as well as tag and pusher axles with improved steering angles to reduce tire wear and improve manoeuvrability.

The truck is also available with Tandem Axle Lift, enabling the rear axle to be disengaged and raised when the truck is not loaded, reducing the fuel consumption.

### Volvo FM

The new Volvo FM is packed with improvements to the driver environment and innovations that deliver a higher level of comfort, safety and productivity.

"Trucks form an integral part of our everyday life," says Hörberg. "That is why, with the launch of the new Volvo FM, we are introducing a versatile working tool that is also the ultimate workspace for drivers – one of the most important assets in the transport industry."

Spacious and with exceptional visibility, the new Volvo FM heavy duty truck is designed to be the ultimate workplace on wheels, in all segments. The variety of available driveline and chassis configurations means the new Volvo FM can be tailored to deliver higher productivity and fuel savings in a wide range of applications.

"For every societal beat and logistical need, the new Volvo FM is a truck that will keep our world in motion," says Hörberg. "Around urban areas, over long distances, picking up containers in ports, navigating construction sites, maximising chemical payloads – the Volvo FM is up to any task. It's probably our most versatile truck model."

"The new Volvo FM is the versatile work horse of our range – agile and fit to serve its purpose of being spacious, safe and comfortable for drivers," says Eric Parry, product manager at Volvo Trucks South Africa. "We have also achieved very good visibility using a lowered door line, new rearview mirrors and a passenger corner camera."

In addition to the improved visibility for drivers, other safety advances on the new Volvo FM include Downhill Cruise Control, which sets a maximum speed to help prevent unwanted acceleration when travelling downhill, and Adaptive Cruise Control (ACC) that now works at all speeds down to zero km/h.

The Electronically controlled Brake System (EBS), which is a prerequisite for safety features such as Collision Warning with Emergency Brake and Electronic Stability Control, now comes as standard on the new truck. Volvo Dynamic Steering, with the





The new Volvo FM is packed with improvements to the driver environment and innovations that deliver a higher level of comfort, safety and productivity.



The Volvo FH series has been a favourite among truck drivers for many years, especially for those who spend a good portion of their lives on the road

safety systems Lane Keeping Assist and Stability Assist, is also available as an option.

The Volvo FM also features a road sign recognition system displayed in the instrument display to alert the driver. The system is able to detect signs such as overtaking restrictions, road type and speed limits.

### Volvo FH16

Like the other new launches, the new generation Volvo FH16 is geared to give customers enhanced productivity. It achieves this through a combination of new safety features, a driver-centric working environment and innovative technologies.

"Our new flagship Volvo FH16 is a genuine premium product that can handle the most demanding applications and local operating conditions, while giving customers and drivers the best of everything," states Hörberg. "It makes no compromises between power and fuel efficiency, comfort and style."

The interior of the new Volvo FH16 has been designed specifically with drivers in mind, and updated with new accent colours and quality trim. The upgraded dashboard includes practical new storage spaces and a fully digital 12-inch high resolution instrument display. The driver can select between four different screen views, depending on the driving situation and information they would wish to have displayed.

Increased front-axle load capacity, and tag and pusher axles with better steering angles, improve both the manoeuvrability and productivity of the new Volvo FH16. A new 38-tonne bogie is also available for especially demanding operations.

By combining a powerful 16-litre engine of up to 700 hp, with improved manoeuvrability, the latest safety technology and greater driver support, the new Volvo FH16 gives superior

productivity for the most demanding transport tasks.

### Volvo FMX

The all-new Volvo FMX comes with an entirely new cab, increased payloads and innovative safety features. With increased front axle loads of up to 20 t and a 38-t bogie, the new Volvo FMX is built for tough conditions and demanding assignments.

"Some tasks need to run smoothly even when the conditions are challenging. The Volvo FMX is Volvo Trucks' most robust construction truck to date and it will make the toughest assignments easier – whether there is a road or not," says Hörberg. "The range is tailor-made to our customers' business requirements, and the demanding local conditions it will be up against."

Construction industry customers, adds Hörberg, are facing ever-increasing demands to improve in areas such as sustainability, cost efficiency, safety and productivity

"With the launch of the new Volvo FMX, we are supporting these customers by creating robust trucks and innovative services to assist in making their operations easier, safer and more profitable," says Hörberg. "Regardless if a fleet is operating in a mine or service busy construction sites, the Volvo FMX is a precision tool customers can count on."

The new Volvo FMX features the heaviest addition to Volvo's chassis range – a 38-t bogie that allows for a Gross Combination Weight (GCW) of up to 150 t. In addition, the front air suspension option has been updated, allowing for front axle loads of up to 10 t, or 20 t for double front axles.

For trucks with a steered tag or pusher axle, the steering angles have been increased, resulting in better manoeuvrability and reduced tyre wear. All these improvements add up to greater productivity and cost efficiencies for construction transportation tasks. 🌟





The Hamm HP series replaces the GRW series worldwide, effective end of 2020.

# WIRTGEN GROUP SA ROLLS IN HP SERIES PNEUMATIC TYRE ROLLERS

**Latest on Wirtgen Group South Africa's arrival lounge is a totally new generation of HAMM pneumatic tyre rollers, the HP Series. The range – which replaces the famous GRW line – boasts an array of innovative features, and key among them are the water and additive sprinkler system and the flexible ballasting system, writes *Munesu Shoko*.**

**W**irtgen's HAMM brand is a household name in the road construction industry and has once again proven its prowess with the launch of its HP Series range of

pneumatic tyre rollers. In the 1960s, HAMM, said to be a pioneer in the compaction sector, launched its well-known GRW range. The machine concept of the pneumatic tyre roller was revolutionary at that time, and HAMM has continued to develop

these machines up to the present day. Now, a good 50 years later, the compaction specialist is again launching a new generation of this roller type: the HP Series. It replaces the existing GRW Series worldwide, effective end of 2020.





HAMM has developed a common platform for all model variants in every market throughout the world.

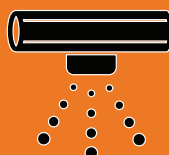
## QUICK TAKE

Wirtgen Group South Africa has introduced its HP Series, a totally new generation of pneumatic tyre rollers from its HAMM brand

The first units have arrived in southern Africa and the first HP 240 has already been sold to a contractor in Zimbabwe

A key innovation is the flexible ballasting which comes as standard. With this feature, the operating weight is quickly adjustable to suit the asphalt type, layer thickness and application

HAMM has optimised the additive sprinkler system for the new HP Series due to the profusion of special asphalts that tend to be difficult to process



For the HP series, HAMM has developed a common platform for all model variants in every market throughout the world. For the local market, three models are available: the HP 180 with operating weights from 8 t to a maximum of 18 t; the HP 240 with operating weights from 8,5 t to a maximum of 24 t; and the HP 280 with operating weights from 10 t to 28 t.

The first units of the Hamm HP Series have arrived in southern Africa. Waylon Kukard, sales manager at Wirtgen Group South Africa, tells **Capital Equipment News** that the company has already sold the first HP 240 to a contractor in Zimbabwe, which he believes is testimony to the immediate interest in the new range. The first HP 180 and HP 280 units are available in stock at Wirtgen Group SA's Pomona, Gauteng facility.

### Key features

One of the key talking points on the new series is the operator platform, which comes with first-class field of vision. As is customary with HAMM, the new HP Series pneumatic tyre rollers offer a modern, spacious operator platform or panoramic cabin with maximum visibility



"Previously, the additive concentrate was mixed with water and then filled into a separate tank on the roller. On the new machines, the additive concentrate is simply filled without premixing. The dosage from the large additive tank with level monitoring can be controlled from the operator platform in various addition levels."

Waylon Kukard, sales manager at  
Wirtgen Group South Africa



The HP 280 has operating weights between 10 t and 28 t.

over the machine and the construction site. In this respect all models comply with the new ISO 5006-2017 operator's field of view standard which is markedly stricter than the previous provisions.

In terms of machine design, HAMM is sticking with the proven asymmetrical frame concept in the HP Series. This is not only a hallmark, it is also a quality advantage because it follows the track offset between the front and rear wheel sets and always allows a clear view of the outer flanks of the front and rear wheels.

Clarity and an unimpeded overview also prevail on the operator's platform. For example, on all models the operation is designed to be totally language-neutral and is easy to learn. The minimal number of switches on the operator's platform is intelligently arranged. User guidance is assisted by the unambiguous colour-coded grouping. Drive control is via a joystick ergonomically positioned on the armrest. Numerous other details in the driver's cab ensure optimal comfort and a healthy working posture for the driver.

Another key innovation is the flexible ballasting, which comes as standard. With this feature, the operating weight is

quickly adjustable to suit the asphalt type, layer thickness and application. Here, the HP Series offers considerable latitude with its variable ballasting concept. For example, prefabricated ballast bodies made of steel or normal or heavyweight concrete can be inserted into or removed from the large ballast compartments between the wheel sets using a forklift truck, for example. This can be carried out in the user's workshop or on the construction site.

HAMM offers various ballast body kits for this purpose, allowing different weights to be achieved. Because the ballast spaces are located in the centre of the machine, the weight is always evenly distributed over both axles – perfect conditions for optimum compaction quality. Additional ballasting of up to 17 t is possible, depending on the basic weight.

HAMM has also optimised the additive sprinkler system for the new HP series due to the profusion of special asphalts that tend to be difficult to process. High-quality compaction of these construction materials calls for sprinkling of the pneumatic tyres with an additive.

"Previously, the additive concentrate

was mixed with water and then filled into a separate tank on the roller. On the new machines, the additive concentrate is simply filled without premixing. The dosage from the large additive tank with level monitoring can be controlled from the operator platform in various addition levels. The roller doses and mixes the additive during the compaction in accordance with the specification. This also brings about an increase in quality because HAMM avoids separation of the additive-water mixture by virtue of the design. And last but not least, swapping from water to additive can easily be done at any time directly from the operator platform," explains Kukard.

### More features

The HP Series also scores in terms of safety. Drivers can always reach the brake pedal quickly and reliably because it is an integral part of the seat-operating unit on all HP Series models. This makes for the maximum possible operational safety because the brake is always easily accessible, irrespective of the seat position. This aspect is especially important, particularly for heavy rollers



As is customary with HAMM, the new HP Series pneumatic tyre rollers offer a modern, spacious operator platform or panoramic cabin with maximum visibility over the machine and the construction site.





weighing well over 20 t.

The new HP Series pneumatic tyre rollers are visually identifiable by the large, newly designed water tank. Like the diesel tank, it is generously dimensioned so that the machines have sufficient capacity for a full working day without stopping to refill. For this reason alone, the rollers are highly productive.

HAMM also offers a supplementary water tank with a volume of 1 500 ℓ for all HP series models. It may be used as a water reservoir for the sprinkling system, but also serves as an easily quantifiable, flexible supplementary weight. Operation of the supplementary tank is easy because it is connected to the basic water tank by means of interconnecting pipes. To facilitate fast refilling, the developers have provided a C-pipe connection to complement conventional filling. It enables the entire tank to be filled in around three minutes. A pump is also fitted to allow complete discharge.

When it comes to maintenance, the developers have also attached importance to efficiency and safety. For example, all daily maintenance items are situated on the right-hand side of the engine. Engine

access has also been intelligently and safely designed on the HP Series: the steps are integrated in the outer contour and are opened outwards in one easy operation. Because they visually protrude in this position, the operator cannot forget to retract the steps on conclusion of the maintenance work.

### Positive outlook

Commenting on the state of the market, Kukard says there seems to be a bit more optimism in the construction industry compared to the last couple of years. The road construction industry, he says, will be crucial to the economic turnaround of South Africa.

"To resuscitate the economy from the current COVID-19 influenced downturn, the government has prioritised infrastructure projects. We, however, feel that we are still a couple of months away from experiencing the turnaround, but the optimistic feeling in the market is a welcome change from the difficult years we have faced. As Wirtgen Group South Africa, we are well positioned to support our valued customers in line with our 'Close to our Customers' motto," concludes Kukard. 🌟



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The Next Generation Cat 395 excavator offers 10% more production.



# DELIVERING MORE GAINS FOR THE CONTRACTOR

**Caterpillar has launched its Next Generation range of Cat large excavators – the Cat 345 GC, Cat 374 and Cat 395 with a design focus on delivering more gains for the contractor through high production, more durability, fuel efficiency and low operating costs, writes *Munesu Shoko*.**

**A**t a recent virtual press launch attended by *Capital Equipment News*, Caterpillar unveiled its Next Generation Cat large excavators. With a 42 200 kg operating weight, the Next Generation Cat 345 GC excavator is designed to deliver a balance between performance, reliability and low-cost operation. The excavator can increase fuel efficiency (cubic metres/tonnes per unit of fuel) by up to 25% and lower operating costs by up to 30% compared to the 349D2. In addition, the new model incorporates significant engineering advances for safety and operator convenience.

With an operating weight of 71 700 kg, the Next Generation Cat 374 excavator offers contractors high production, two times more structural durability, and up to 20% less maintenance costs than its predecessor, the 374F.

With an operating weight of 94 400 kg, the Next Generation Cat 395 excavator offers contractors up to 10% more production, two times more structural durability and up to 20% less maintenance costs than its predecessor, the 390F.

## **Next Generation Cat 345 GC**

The 345 GC is available with a number of boom and stick combinations, including a 6,9 m reach boom with a choice of 2,9 m or 3,35 m sticks. The 6,5 m mass excavation boom can be paired with either a 2,5 m or 3 m stick.

The 345 GC's fuel efficiency comes primarily from electronically controlled main pumps and valve to ensure more work gets done with each unit of fuel. Plus, two operating modes help contractors more actively manage fuel consumption: Smart mode automatically matches engine speed and hydraulic power for the highest fuel efficiency as working demands change; Power mode delivers maximum productivity in high-demand applications such as truck loading and trenching.

Extended maintenance intervals and easy access to consolidated filter locations combine to lower maintenance costs. Hydraulic, air, and fuel filters have increased capacity for longer life: service intervals for fuel filters extend from 500 to 1 000 hours and from 2 000 to 3 000 hours for the hydraulic return filter.





The 374 offers up to 20% less maintenance costs than its predecessor, the 374F.

## QUICK TAKE

With a 42 200 kg operating weight, the Next Generation Cat 345 GC excavator is designed to deliver a balance between performance, reliability and low-cost operation



With an operating weight of 71 700 kg, the Next Generation Cat 374 excavator offers contractors high production, two times more structural durability, and up to 20% less maintenance costs than its predecessor, the 374F



With an operating weight of 94 400 kg, the Next Generation Cat 395 excavator offers contractors up to 10% more production, two times more structural durability, and up to 20% less maintenance costs than its predecessor, the 390F



The new Cat hydraulic return filter on the 374 and 395 has a 3 000-hour service life – a 50% increase over previous filters



The 345 GC's overall efficiency is further enhanced with telematics technology. Product Link, the 345 GC's on-board telematics system, automatically and accurately collects machine information, including location, hours, fuel usage, idle time, maintenance alerts, diagnostic codes, and machine health – all of which can be viewed online through web and mobile applications.

VisionLink provides online access to Product Link data, which allows contractors to make informed decisions that help increase productivity, lower costs, simplify maintenance and improve job site safety and security. Subscription options, including cellular or satellite (or both) reporting, allow customers to configure telematics data to specific requirements.

The 345 GC's cab environment is designed to reduce effort. All controls are in front to eliminate twisting in the seat. The ISO-certified, sound-suppressed ROPS cab is sealed and pressurised; large glass areas enhance all-around visibility. Narrow pillars at the front corners of the cab further contribute to forward visibility. A standard rearview camera extends rearward visibility.

Most machine settings are controlled through the high-resolution 203 mm touchscreen monitor, and a jog dial and shortcut keys are positioned on the right console. In addition, joystick function can





"A key to production is our new dedicated hydrostatic swing circuit. The circuit enables regenerating swing brake energy and independent management of cylinder oil flow. What that means for owners and operators is higher operating efficiency and smoother, more predictable performance when multitasking with the excavator."

**Brian Abbott, worldwide product manager for Caterpillar large excavators**

The 345 can increase fuel efficiency by up to 25% and lower operating costs by up to 30% compared to the 349D2.



be customised through the monitor to match operator preference, including operating pattern and response rate. All preferences are saved with the Operator ID and restored at log in.

The 345 GC uses a keyless push-button engine start for added security, requiring Operator ID codes that can be entered manually via an optional Bluetooth key fob or smart phone app. Convenience features include Bluetooth integrated radio, USB ports for charging and phone connectivity, 12-volt DC outlets, an AUX port and ample storage.

To promote safety, many of the routine maintenance checks for the 345 GC can be performed at ground level with access to the air pre-cleaner, fuel water/separator, fuel tank and water/sediment drains and coolant level check. Access to the engine compartment is facilitated with handrails, antiskid surfaces and recessed bolts. Locks are used for the tool/storage box, fuel door, hydraulic fill, and fuel drain compartment. A ground-level secondary

engine shutoff is provided in the event of an emergency. Scheduled oil sampling ports are easily accessed, and an available electric refuelling pump is equipped with an automatic shutoff.

### Next Generation Cat 374

"A key to production is our new dedicated hydrostatic swing circuit," says Brian Abbott, worldwide product manager for Caterpillar large excavators. "The circuit enables regenerating swing brake energy and independent management of cylinder oil flow. What that means for owners and operators is higher operating efficiency and smoother, more predictable performance when multitasking with the excavator."

Three modes of operation are available: Power, Smart, and ECO. Power mode is maximum power at all times. ECO mode lowers engine speed and cycle times while maintaining breakout force. Smart mode takes the guesswork out by automatically

matching engine and hydraulic power to digging conditions, reducing fuel consumption and optimising performance. Engine speed automatically lowers when hydraulic demand decreases, further reducing fuel usage.

The cooling system features a new on-demand fan that's designed to operate only when required, saving fuel and ensuring maximum efficiency. An available auto reverse function assists with cleaning debris from the cooling cores – another plus for enhanced efficiency.

"An additional key to production is simple, easy-to-use technology," adds Abbott. "We make it available as standard equipment. In fact, the 374 has the industry's most comprehensive offering of factory-installed technology in its size class – all to take an owner's operating efficiency to a much higher level."

Cat Payload helps operators increase loading efficiency with on-the-go weighing; real-time payload estimates can be calculated without swinging to help prevent overloading and underloading trucks. The monitor's USP port lets operators download results from a single shift all the way up to 30 days of work with no need for an internet connection or VisionLink subscription.

Cat Grade with 2D gives operators visual guidance to grade via the standard touchscreen monitor so they can make more accurate cuts. The system is readily upgradable to Cat Grade with Advanced 2D or Cat Grade with 3D for enhanced accuracy. Advanced 2D includes an additional touchscreen monitor to enable in-field design. 3D adds GPS and GLONASS positioning for pinpoint accuracy. The 374's built-in communication technology makes it easier than ever to connect to 3D services like Trimble Connected Community or Virtual Reference Station.

Auto Hammer Stop prevents unnecessary wear and tear on the attachment and machine. A warning message appears on the monitor after 15 seconds of continuous firing; the hammer will automatically stop after 30 seconds of continuous firing.

Optional Work Tool Recognition saves time and energy when changing attachments. A simple shake of an attached tool confirms its identity and automatically adjusts the hydraulic system to the parameters the operator set for that specific tool.

The optional Cat PL161 Attachment Locator is a Bluetooth device that makes finding attachments and other gear quick and easy. The excavator's onboard Bluetooth reader or Cat App on a smart phone will locate the device automatically up to a distance of 91 m.



No matter how hard the work, the 374 is built to do it. Booms, sticks, and frames are twice as strong as those on the previous model – all to give owners reliable performance for the life of the machine. Booms have increased top and bottom plate thickness; sticks have increased side, bottom and bracket plate thickness; and frames have increased base frame and counterweight mounting plate thickness.

Additional reinforcements are built into the car body, track link, track rollers and boom, stick, and bucket cylinders to ensure long-term, trouble-free performance.

Extended and synchronised maintenance intervals contribute to the 374's lower long-term costs. The new Cat air filter with an integrated pre-cleaner and primary and secondary filters provides double the dust-holding capacity of the previous design.

The new Cat hydraulic return filter has a 3 000-hour service life – a 50% increase over previous filters. Fuel system filters are synchronised for service at 1 000 hours – a 100% increase over the previous filters.

The fuel system's water and sediment drains and hydraulic system's oil level check are positioned close together at ground

level, making routine maintenance faster, easier and safer.

### Next Generation Cat 395

"We increased swing torque and stick force by 10%," says Brian Abbott, worldwide product manager for Caterpillar large excavators. "These increases enable contractors to use larger buckets for much greater productivity."

Like the 374, a key driver to the 395's production is a new dedicated hydrostatic swing circuit – a feature said to be found only on larger Cat mining shovels like the 6015B. The circuit enables the excavator to regenerate swing brake energy and independently manage cylinder oil flow.

The cooling system features a new on-demand fan that's designed to operate only when required, which helps save fuel. An available auto reverse function assists with cleaning debris from the cooling cores, which enhances operating efficiency.

Simple, easy-to-use technology helps operators and owners get the most out of their Cat excavator. "The 395 has the industry's most comprehensive offering of factory-installed technology in its size class," says Abbott. "Our goal is taking

an owner's operating efficiency to a much higher level."

Lift Assist is a new safety feature that helps prevent the excavator from tipping. It quickly calculates the weight of the actual load being lifted and compares it to the excavator's rated capability. Visual and auditory alerts show and tell the operator if the excavator is within a safe working range.

Whether equipped with a bucket or hammer, standard 2D E-Fence prevents the excavator from moving outside operator-defined points. This helps protect the machine and other objects from damage and reduces the risk of fines related to zoning or underground and aboveground utility damage. It also helps prevent operator fatigue by reducing overswinging and digging.

The 395 offers a choice between a Deluxe and Premium cab. Performance-enhancing features like the front-facing control panel, keyless pushbutton start and large touchscreen monitor with jog dial keys come standard.

"In this size class, production is the most critical contractor requirement. The 395 delivers that and so much more," concludes Abbott. 🌩️

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The Linde range of forklifts from Eazi Access.

# SELECTION, PURCHASE AND MAINTENANCE OF FORKLIFTS

Forklifts are crucial to materials handling. Selecting the most productive, cost-effective forklift for the job at hand requires specialised insight. Besides size and power source, choosing a forklift also requires the buyer to consider a number of factors which impact total cost in the long run. By *Mark Botha*.

**A**ccording to Jozua Coetzee, business development manager: sales and aftermarket for the Linde brand at materials handling solutions provider Eazi Access,

potential buyers should pay special attention to the environment in which their forklifts will operate.

"It is paramount to select the forklift solution suited to your choice of power source, be it diesel, liquid petroleum,



QUICK TAKE





The forklifts in the Eazi Access rental fleet are available in a range of operating weights, capacities and dimensions.

Selecting the right forklift for the job at hand is “critical” as such a purchase can be an investment for the next 10 years, if not longer

The choice between purchasing new forklifts and rental depends on the client’s financial policies and cashflow and the application in which the forklifts will be used

Failure to carry out frequent fork inspections can result in snapped forks, or dropped loads, which is not only expensive, but also dangerous

It is critical that fork inspections be carried out frequently by trained personnel, with the aim of detecting damage, wear and tear or deformations that might impair the safe use of forklifts on site

natural gas, lead-acid or lithium-ion batteries, or even hydrogen. With our Linde Material Handling forklift range, the driving parameters are all the same with the active braking system. This ensures safe operating conditions with braking and stopping being the default parameter,” he says.

### The right machine for the job

He says selecting the right forklift for the job at hand is “critical” as such a purchase can be an investment for the next ten years, “if not longer”.

“Ensure that you buy the right forklift for the job and not just something generic that will ‘more or less’ fit the application; rather wait a month or two for the proper equipment to be manufactured. Alternatively, rent the forklift most appropriate for your environment.”

Forklifts are manufactured in various variants, each adapted to different applications such as warehousing; stacking; order picking; transportation; heavy and explosion-proof trucks; corrosive environments; smelters and the beverage industry.

Eazi Access’ Linde Material Handling vehicle range is unique. It comprises of 77 series with up to 382 model variants and around 10,000 equipment options. Based on this modular system, Linde manufactures the vehicles and fleets tailored precisely to the needs of each user in terms of transport, storage, picking and stacking.

The JCB rough terrain forklifts (RTFL) from Eazi Access’ rental range, for instance, provide handling solutions for re-handling applications ranging from docks to yards, construction and forestry.

“The JCB RTFLs within Eazi Access’ rental fleet are available in a range of operating weights, capacities and dimensions,” says Coetzee. “Their JCB Synchro Shuttle transmission provides fast, smooth, directional change and a choice of mast height, attachments and carriage types adapts the machine to your needs while their side-shift function provides accurate materials placing.”

The JCB models RTFL 930, RTFL 940-4 and RTFL 950-4 have maximum lift capacities of 3 000, 4 000 and 5 000 kg respectively.

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Forklifts should never carry loads exceeding the forks' load capacity.



A TCM forklift from Criterion Equipment.



"It is paramount to select a forklift solution suited to your choice of power source, be it diesel, liquid petroleum, natural gas, lead-acid or lithium-ion batteries, or even hydrogen."

**Jozua Coetzee, Eazi Access business development manager: sales and aftermarket**



"It is important never to carry loads that exceed the fork's specific load capacity. The weight capacity of every fork attachment is indicated on the side of the fork shank or face."

**Heinrich Frederick, Pretoria branch manager, Criterion Equipment**

specifications and relevant legislation and regulations, and is supported by our network of technical experts."

The company also offers operator training in compliance with legislation, and places qualified machine operators on the sites where its machines are used. Site supervisors and qualified personnel, too, are made available to provide assistance on the ground, says Coetzee.

### Fork maintenance

The metal fork attachments used on forklifts may seem indestructible, but they eventually wear out, just like any other machine component, says Heinrich Frederick, Pretoria branch manager at Criterion Equipment, sole distributor of TCM forklift trucks in southern Africa.

He says failure to carry out frequent fork inspections can result in snapped forks, or dropped loads, which is not only expensive, but also dangerous.

"It is important never to carry loads that exceed the fork's specific load capacity. The weight capacity of every fork attachment is indicated on the side of the fork shank or face."

He says forks are constantly subjected to abrasion, which can reduce the thickness of the fork blades. Abraded blades can compromise the fork attachment's lifting capacity. To prevent friction on the fork tips, operators should be encouraged to lift the fork attachment when the forklift is in use and when driving on site.

"It is critical that fork inspections be carried out frequently by trained personnel, with the aim of detecting damage, wear and tear or deformations that might impair the safe use of forklifts on site. With the correct

### Forklift rentals

Coetzee says the choice between purchasing new forklifts or opting for rentals depends on aspects such as the client's financial policies and cashflow, as well as the application in which the forklifts will be used.

"Forklifts used in light applications will invariably have a longer lifespan and should rather be purchased than rented. Those on the lookout for flexibility should investigate the available rental models," says Coetzee.

"At Eazi Access, we realise that our

equipment plays a critical role in our clients' businesses. We therefore review global best practices continually in order to ensure that our equipment, support and training are in line with all international regulatory and safety requirements."

The company cooperates with major industry bodies to set and promote conformance with standards in the industry. It also offers other reputable brands such as JLG and Magni.

"Our rental fleet is serviced and maintained within manufacturers'





Forklifts used in light applications tend to have longer lifespans and should be purchased, rather than rented.

use of the appropriate measuring tools, it is easy to carry out fork inspections on-site efficiently and accurately."

He says just 10% fork wear can reduce load capacity by 20%, at which point the forks must be replaced.

To ensure that every fork adheres to acceptable standards, Criterion Equipment recommends the use of three tools: a measuring card, used to measure the thickness of the fork's heel and shank/face; a fork calliper to measure the fork thickness, angle of the fork bend and the latch space, as well as a Vernier calliper, which measures the thickness of the fork shank/face.

"During inspections," says Frederick, "it is vital to ensure that the fork's shank ("face") and blade ("heel") angles do not exceed 93° outwards and 87° inwards. If this is the case, or if there is a bend in the fork toe, the fork must be replaced – never bend or weld forks back into place. Check the entire surface of each fork for cracks and also inspect the thickness of the fork tip."

In the case of worn-out fork tips, the fork should be replaced or re-machined. Frederick says the fork heel is one of the first components of the fork to wear out and should therefore be checked thoroughly to make sure it is of the same thickness as the rest of the fork blade.

"It is also important to check the latches that attach the fork to the carriage in order to prevent it from moving around while driving the machine. Fork latches are the only components that are welded onto the fork." 🌀

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A Caterpillar 140G grader rebuilt by KH Plant.



# MOTOR GRADERS: GROWING FUNCTIONALITY MAY ACCELERATE MARKET DEVELOPMENT

**The grader market in South Africa is faced with a reduction in construction projects, yet the functionality and importance of these machines are predicted to accelerate growth in the global market. *Capital Equipment News* approached two players in this field for their take on the local grader market. By Mark Botha.**

**M**otor graders reduce labour requirements while “improving overall fuel efficiency”, according to a global industry analysis and forecast of the grader market by research company Transparency Market Research.

The analysis, based on the forecast period 2019 – 2027, also acknowledges the importance of graders in applications including ground and soil levelling, the removal of dumps and debris, and “establishing foundation pads in native soil”.

While it was found that these activities can be performed more efficiently and at lower cost, the study states that “the importance of motor graders is starkly increasing and therefore helping in the overall development of the market”.

The research also concluded that the functionality of motor graders will “accelerate the growth of the global market in coming years” and that these machines are “one of the most vital choices for multiple industries, especially at the site of mining, construction and building”.

We turned to KH Plant, a rebuilder of Caterpillar





An SDLG grader from Babcock Equipment.

## QUICK TAKE

The importance of motor graders is starkly improving and therefore helping in the overall development of the market

Motor graders are one of the most vital choices for multiple industries, especially at the site of mining, construction and building

There is a significant reduction in construction projects across the industry, but it seems that the farming community is now procuring its own graders

The market for older, renewed graders is healthy in South Africa as these machines are relatively simple to service



graders, and Babcock Equipment, a distributor of SDLG graders, for their take on the local grader market.

### Local market

"There is a significant reduction in construction projects across the industry, but it seems that the farming community is now procuring their own graders," says KH Plant director Klaus Haiml. This, he says, is mainly the result of government "not maintaining the roads and infrastructure in the farmland areas".

He says the market for older, renewed graders is "healthy" in South Africa as these machines are relatively simple to service, and because of the simplicity of the technologies they feature.

Babcock Equipment GM Sales Lance Mannix agrees: "Government has been holding back on the road and infrastructure spend for some time now," he says. "When this changes and government releases funds for road and civil contracts, SDLG will be in the position to provide the G9220F grader to meet local contractors' requirements."

### Customer feedback

With motor grader OEMs placing the

The farming industry is procuring graders amid a slowdown in local construction projects



"The market for older, renewed graders is healthy in South Africa because of the simplicity of the technologies they feature."

Klaus Haiml, director of KH Plant



"Government has been holding back on the road and infrastructure spend for some time now. When this changes and government releases funds for road and civil contracts, SDLG will be in the position to provide the G9220F grader to meet local contractors' requirements."

Lance Mannix, GM Sales and Equipment at Babcock

The SDLG G9220F grader from Babcock features an electronically controlled Deutz engine with variable power and three power curves to match its ZF transmission. Corresponding power modes are selected according to the load and, says Mannix, achieve "optimum performance and fuel efficiency".

The G9220F also features a no-spin limited slip differential and a heavy-duty roller chain drive balance box to enhance the overall tractive force and the flatness of surface operated by the blade.

The SDLG G9290 grader offers a blade pull force of 14 850 kg and blade down force of 10 879 kg, and is powered by an SDLG SD130B Stage III diesel engine with 211 kW output, supplied by Volvo.

The SDLG G9220 features a 164 kW Dalian Deutz engine, in combination with a ZF power shift transmission, while the SDLG G9138, with a basic operating weight of 12 100 kg, is designed for light-duty work.

### Rebuilds

Haiml says the KH Plant grader rebuild centre is focused on restoring older, popular models to new.

"These graders are sold at much-reduced cost," he says. "Throughout our 35 years of experience in the grader rebuild industry, it has been evident that,

needs for the customer at the forefront of grader development, SDLG has taken customer feedback seriously and kept simplicity and reliability in mind when designing the G9220F motor grader, says Mannix.

"The operator environment is designed with safety and productivity in mind. The cab is ROPS and FOPS certified, with large glass areas for optimal visibility, an adjustable steering column and air conditioning for operator comfort."



SDLG has taken customer feedback seriously and kept simplicity and reliability in mind.



designed to keep our rebuilt graders performing as well as they do when they leave our facility."

### Efficiency

"SDLG graders are based on proven and reliable technologies, making for well-balanced machines with excellent blade down force," says Mannix. "Every G9220F grader is now fitted with wet-type inboard brakes for added safety and reliability, and they are equipped with tandems, ready for the job."

The SDLG G9220F features a 15% oscillation to keep the blade level for the best grading result. It is also equipped with no-spin differential, heavy-duty bearings and chain drive and, according to Mannix, the SDLG tandem provides exceptional traction and reliability.

He describes the G9220F's maintenance access as "excellent", with large side doors and easy-to-reach greasing points for fast and efficient daily maintenance.

Rebuilt Caterpillar graders from KH Plant are also easily serviceable, but Haiml notes the importance of improving on regular replaced parts and components.

"Additional protective components are also manufactured and fitted to ensure durability," he says. ☺



Inside the KH Plant remanufacturing facility.

on the African continent, older models are preferred over newer, electronically-enabled graders.

The company specialises in restoring Cat 140G, 140H and 140K motor graders, which are sold with extensive warranties and after-sales support.

"We focus on restoring the graders to original factory specification, without the addition of 'comfort' upgrades. Our motor graders are rebuilt to OEM specifications, which ensures that they match the performance and reliability of new machines."

He says KH Plant has rebuilt over 950 Caterpillar graders using precision engineering to meet the highest technical standards. In South Africa, these machines are priced at up to 60% less than their new counterparts.

"Our after-sales service and product support are

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## COMANSA introduces new flat-top cranes

COMANSA has added two new models to its successful 21LC series, as an evolution of the 21LC550 model, with two options: 20 and 25 tonne (t) maximum load, which can be assembled with ranges of between 30 and 80 m with configurations every 5 m, allowing a maximum point load of up to 4,95 t.

Both models incorporate an optional boom configuration that allows the total range to be extended to 85 m at the tip. Compared with the 21LC550 model, load capacities are on average 16% higher for the 21LC600 and 23% higher for the 21LC650.

The first of the new features in these models is that they have a shorter, modular counter-jib, ranging from 24,4 to 16,4 m and having up to five possible configurations. The concept has a precedent in models 21LC750 / 21LC1050 / 21LC1400 and offers greater adaptation to the work configuration in reduced spaces.

Another of the strong points of these models is the improved access to the turntable and the rotating part: the cathead has been redesigned to facilitate the passage of lifting cables, including a welded ladder that allows access to the highest part without the need for the cab platform. Access to the cab platform is now direct via the turntable thanks



As a standard feature, both crane models offer the double trolley system with automatic changeover.

to the folding ladder, preventing falls while working on the upper level and also being easier to transport.

As a standard feature, both crane models offer the double trolley system with automatic changeover (called DT in the data sheets), and incorporate, as a novelty, the optional availability of single trolley (ST) which simplifies maintenance work while increasing load capacity in short boom lengths.

The height, which is self-supporting with

a built-in base, can reach up to 85,8 m.

Also, the tower sections are 2,5 m<sup>2</sup> for both models.

Taking advantage of the launch of the new cranes, a new climbing cage is presented: J3A-11, which follows the concept of the J3-20, with greater length and distance between rollers, a saving in scale recovery time, thanks to the auxiliary hoist included, which can also be transported in standard containers or trucks. 🌀

## Cranes enjoy a good lift in 2020

2020 will be remembered as a difficult year, particularly by many in the South African engineering manufacturing space. But there were companies that came through it strongly.

One of them was Condra, which reported steady sales of overhead cranes, hoists, end-carriages and other components throughout the year into central Africa, South America, North America and Europe.

As 2020 kicked off, the company delivered its first fully automated crane to Lonmin's Marikana mine. The complete automation of the 16-t, 16 m-span double-girder electric overhead travelling grabbing crane represented a significant technological step forward for Condra, which now offers automation across its product range as an alternative to traditional pendant and remote control.

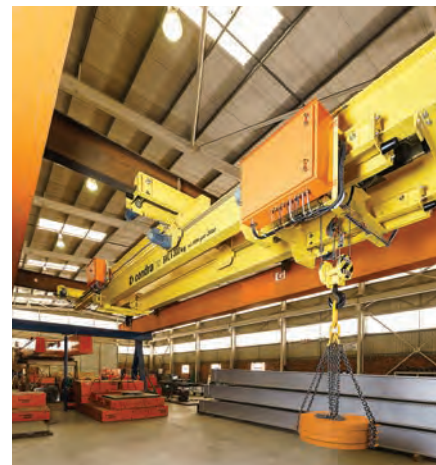
The automated Marikana crane features remotely programmable variable speed drives fitted throughout, delivering maximum speeds of 10 metres per minute on the lift, and 20 and 40 m per minute on the cross-travel and long-travel respectively. Pre-programmable control of the four long-travel motors enables precise crane positioning accurate to within 5 mm.

The Marikana crane delivered, intermittent refurbishment work materialised as a result of customers wanting immediate cost savings over buying new, and needing production to continue with an as-new machine already familiar to operators without need for retraining.

Besides its own machines, Condra refurbished competitors' cranes and a small number of overhead units originally made by companies now closed. All quotes for refurbishment included the option of technical upgrade.

Despite the advantages offered by refurbishment, orders for new cranes remained significantly high. Although prices are higher than refurbished equivalents, new cranes promise lower operating costs, reduced projected overall lifetime costs and more efficient operation resulting from increased speeds, lower weights and lower electricity consumption. Modern hoists are as much as 50% lighter than they were 30 years ago, and the consequent reduction in crane weight reduces the rate of wear on the overall factory structure.

In April, Condra began manufacture of a technically complex maintenance crane for



Condra enjoyed a good sales run in 2020.

a dragline excavator house, where working space is severely constrained by dragline motors, gearboxes and large hydraulic cylinders. Overcoming these restrictions, the crane's 12,5-t hoist was designed as a beam changing machine with an interlock to prevent the hoist from leaving it unless the crane is securely connected to the selected beam. An anti-derailment limit switch prevents hoist movement until beams are locked together. 🌀



## Bell launches 20-t Kobelco excavator

Bell Equipment, the exclusive distributor of Kobelco excavators in southern Africa, has bolstered its 20-t excavator offering with the introduction of the new 10th generation Kobelco SK220XD.

"The SK220XD-10 is loaded with features not usually found in 20-t machines; features that make this model well-matched to Africa's tough mining and construction sites," says Stephen McNeill, Bell Equipment's marketing and alliance partner manager.

"The SK220XD-10 has a rated power output of 118 kW at 2 000 rpm and a maximum torque of 592 Nm at 1 600 rpm. Like the current SK210 and SK260, it is fitted with a four-cylinder Toyota Hino engine, which has performed exceptionally well in our construction, mining and forestry industries. Bell has sold about 150 Kobelco machines with this engine since 2017."

Kobelco has always focused on hydraulic efficiency as the key to achieving maximum power output and low fuel consumption on its excavators. Reducing friction in the system means less energy is wasted and more work gets done with less fuel used.

McNeill explains that this has been taken a step further with the 10th generation by introducing new hydraulic technology, the Arm Interflow System. "When lowering the boom, the system uses the downward force



The SK220XD-10 has a rated power output of 118 kW at 2 000 rpm.

generated by the boom's weight to push fluid to the arm cylinder. Essentially the machine is using gravity to generate hydraulic energy, which means there is less demand on the hydraulic system and engine. Improved hydraulic efficiencies improves fuel burn and on the SK220XD-10 Kobelco claims a 19% higher fuel saving in ECO-mode compared to S-mode on the SK210LC-8.

"The SK220XD-10 also offers improvements to both the fuel and hydraulic filtration systems with a view to increasing du-

rability and longevity of an already reliable machine. This makes them even more suited to our harsh South African conditions."

Structurally the machine is much stronger. The SK220XD-10 has a 1 m<sup>3</sup> heavy-duty bucket, designed and manufactured by Bell Equipment with South African conditions in mind. The boom and arm, which take the greatest punishment, are reinforced with thick steel plate for a more robust attachment while long, solid rock guards prevent damage to the arm. ☼

## Volvo creates business area dedicated to electromobility

The new Volvo Energy business area will strengthen the Volvo Group's business flow of batteries over the lifecycle as well as the customer offer for charging infrastructure. At the same time, the environmental impact from electric and hybrid electric commercial vehicles and machines will be reduced by giving used batteries a second life in different applications.

"There is a great and growing interest for electric vehicles and machines among our customers. This is of course very positive as it accelerates the transition towards more sustainable transport solutions. Our ambition is to offer our customers the most competitive solutions when it comes to electrification, including batteries and charging infrastructure. With Volvo Energy, we are taking a holistic view of the entire life cycle, which benefits both our customers' business and society as a whole," says Martin Lundstedt, President and CEO.

Already today, the Volvo Group's offer of electric vehicles and machines ranges from city buses and trucks for waste management, construction and urban distribution to compact excavators and loaders. The

roll-out of additional, electric vehicles and related services will continue with high pace and later this year, it will also include, for example, heavy-duty trucks for regional transports or construction.

Volvo Energy will be a business area with full profit and loss responsibility. It will have both an internal role, providing batteries and charging solutions to the Volvo Group's other business areas, and an external role, offering used, remanufactured and refurbished batteries to customers for use across different applications. Volvo Energy will also carry the Group's responsibility for hydrogen infrastructure solutions for fuel cell electric vehicles. Collaborations with various business partners and actors across the ecosystem will be key.

Commercial vehicle batteries will be used for many years in the vehicle before they need to be replaced or remanufactured/refurbished. However, if completely new batteries are fitted to the vehicle, the used ones will generally still have considerable life left to offer, which makes them ideal for energy storage purposes in for example buildings or in green energy production.



Joachim Rosenberg, member of the Volvo Group Executive Board.

Repurposing these batteries therefore mean that natural resources are conserved.

Joachim Rosenberg, member of the Volvo Group Executive Board and chairman of UD Trucks, will head the new business area. Starting in February 2021, he will lead the effort to create Volvo Energy while also continuing to run UD Trucks and preparing the transfer of UD Trucks ownership to Isuzu Motors as part of the previously communicated strategic alliance between the Volvo Group and Isuzu Motors. ☼

## Booyco ready for global leap in mining vehicle safety

Responsible mining companies the world over are moving steadily towards safety Level 9, and Booyco Electronics is at the forefront of fit-for-purpose proximity detection and collision avoidance technologies that comply.

Driven by leading global mining houses, the Earth Moving Equipment Safety Round Table (EMESRT) has been engaging with key original equipment manufacturers to improve the safety of equipment in mining operations. According to Bennie Smith, general manager engineering at Booyco Electronics, the company has developed technology that meets Levels 7, 8 and 9 of EMESRT's safety best practice guidelines.

While Level 7 alerts a mobile machine operator and a pedestrian when they are close, Level 8 goes beyond this to an advisory function, showing the direction in which the vehicle or pedestrians are moving and advising the operator to slow down or stop.

"Level 9 – currently the highest level of safety – takes it a step further by introducing an intervention engineering control measure," says Smith. "This automatically instructs the machine – or the vehicle's onboard control system – to slow down, or to perform a safe or emergency stop."

He highlights that all mines globally are expected to meet Level 9 safety measures by the end of 2025. However, South Africa



Responsible companies are moving steadily towards safety Level 9 in PDS technology, and embracing local OEM Booyco Electronics' solutions.

is moving faster, and has led the world by adopting the EMESRT guidelines in its latest mine safety regulations. These were expected to become law by the end of 2020, requiring local mines to be compliant.

"Having been developing and adapting proximity detection systems (PDS) for South African conditions since 2006, Booyco Electronics is now a world leader in PDS technology certified to Level 9 safety," he says. "We have successfully tested all our equipment with the Vehicle Dynamics Group at Gerotek, which is globally recognised for third party testing,

verification and certification."

Boasting the largest footprint of installed PDS systems and technicians in South Africa, Booyco Electronics has seen its equipment applied in surface and underground mines, and in both hard rock and coal applications.

"This has positioned us well to respond to the EMESRT safety best practices for mines to implement by 2025," says Smith, "As a result, we have been receiving a growing volume of enquiries from across Africa, North and South America, Europe and Australia."

## WearCheck adds non-destructive testing to its offering

Advanced field services, transformer chemistry testing, reliability solutions – these are some of the extra services offered by condition monitoring specialists, WearCheck, in addition to traditional used oil analysis following recent expansion.

The company's advanced field services (AFS) division incorporates specialist monitoring techniques such as rope testing, technical compliance and non-destructive testing (NDT).

Adri Ludick, NDT manager for WearCheck, outlines the benefits and details of various non-destructive testing techniques. "The NDT approach features a variety of testing techniques through which the properties and condition of a component or system are evaluated without causing any permanent damage to it. NDT is typically used in critical component assessments, machine condition assessments and inspection of ancillary equipment such as main vent fans, compressors, mills, pumps and conveyors.

"WearCheck's NDT team delivers quality assurance and quality control of new as well as refurbished components.

"Our main array of NDT tests includes eddy-current-, magnetic-particle-, liquid penetrant-, radiographic-, ultrasonic-testing and visual inspection," he says.

The main advantage of NDT methods is that they do not permanently alter the test object undergoing inspection, making NDT a valuable tool that can save both money and time in a condition monitoring programme.

Ludick explains some of the test methods in more detail. This detects surface defects, such as early-stage cracks, on metallic machine components, and is used across a wide range of industries, from aerospace to beer brewing.

During the testing process, a high frequency electric current (an eddy current) is induced into the material, then the response of that eddy current field is measured. The information is processed to yield a profile of the component.

Defect-free material has a very specific "fingerprint", therefore, when the test results are compared to this, the presence of defects can be assessed.

When it comes to cracks, the earlier they



WearCheck senior technician, Jaco Venter, conducting NDT.

can be detected, the less potential damage they can cause to the component. Eddy-current testing can detect crack initiation at extremely early stages.

An advanced option is the phased array eddy current testing, which creates a 3D picture of the component, giving a more visual insight into anomalies.



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# GETTING THE RIGHT TOOLS FOR MINING TO GO DIGITAL

The astute application of digital tools is the key to continuously improving efficiencies on underground mines, according to Niel McCoy, business line manager for automation and digitalisation at Sandvik Mining and Rock Solutions.



Sandvik OptiMine is a powerful suite of digital tools for analysing and optimising mining production and processes.

McCoy says that the choice of digital tools needs to be based on each operation's key performance indicators (KPIs). This is because the solutions that are implemented will be focused on monitoring and managing those KPIs. He then recommends a phased approach to introducing digital tools to an operation.

"The starting point is always machine telemetry and basic production or productivity reporting," he says. "From there, the solutions can be expanded."

Sandvik Mining and Rock Solutions has extensive global experience in designing and implementing digital tools, including equipment health monitoring and process management. Its AutoMine automation offering operates on 59 mining sites globally, while its OptiMine suite of digital solutions is active on 66 connected sites. The 'My Sandvik' customer portal, a web-based digital hub, serves 214 sites and

its Newtrax technology in wireless IoT connectivity is operating on 115 sites.

"Monitoring equipment health through My Sandvik Digital Services Solutions allows users to draw down telemetry data from their equipment in real time," he says. "The data is automatically compiled into the required report format for quick analysis and response."

## Second aspect

The next aspect to be addressed is the actual management of the process being monitored, he says. This is where Sandvik's Task Management and Scheduler – part of its Optimine suite of digital solutions – can be applied.

"This allows a tablet to be fitted to an item of equipment so that an underground operator can accept tasks and provide real-time progress reports on those tasks," he says. "The more advanced the equipment, the more data can be extracted and communicated automatically without operator intervention."



Niel McCoy, business line manager Automation & Digitalisation at Sandvik Mining and Rock Solutions.

The solutions allow for data to be recorded on equipment's key operations – such as the weight of loads in a loader bucket. Telemetry on the equipment gives valuable insights into the equipment's availability and performance – so that management can respond.

"When starting digital journeys, the focus must be on improving current operations," says McCoy. "This means getting work started on time, for instance, before moving onto optimisation efforts. Most digital implementations will battle if the starting point is trying to increase productivity before getting the basics right." 🌟





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