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JULY 2021



## FIRST LIEBHERR LTM 1230-5.1 CRANE IN AFRICA

**FLEET MANAGEMENT:** Fleet management and the great digital shift

**ASSET AND INSPECTION MANAGEMENT:** Eliminating the paper trail in asset and inspection management

**BACKHOE LOADERS:** Backhoe loaders: centre-mount or side-shift?





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# OEMs LEADING BY EXAMPLE IN REDUCING CARBON EMISSIONS

**T**he recent record temperatures recorded in Canada reminded most of us that climate is, in fact, the most critical issue of our time. Canada set its highest temperature on record after a village in British Columbia reached 46,1°C on June 27 this year. The temperature in Lytton, in the south of Canada's western province, surpassed the previous national high of 45°C, set in Saskatchewan in 1937.

In a recent chat to a climate expert, he advised me that all of us need to play a role in limiting global warming. While our actions in individual capacities may be tantamount to a drop in the ocean in the greater scheme of global carbon emissions, the most important thing we can do on climate might be the simplest: talk about

it now, which is exactly what I am doing in this month's editor's column.

At a time when emissions are of high importance, I am impressed by how original equipment manufacturers (OEMs) in the capital equipment space are facing up to the responsibility of reducing the environmental impact of their manufacturing, supply chain operations and, mostly, their products.

A case in point is Metso Outotec, which recently introduced its Planet Positive initiative, an all-encompassing approach to sustainability. Covering environmental, social and financial aspects of sustainability, Planet Positive's efforts enforce the company's purpose to enable sustainable modern life.

Sustainability is one of Metso Outotec's strategic priorities. The company is committed to limiting global warming to 1,5°C, with targets validated by the Science Based Targets initiative. The Planet Positive portfolio focuses on the most environmentally efficient technologies (>100) in the company's current portfolio, responding to the sustainability requirements of its customers in the aggregates, mining and metals refining industries. The customer requirements relate to energy or water efficiency, reduction of emissions, circularity and safety.

The Volvo Group's commitment to future generations is also well-known, and the company is doing its part in achieving the goals of the Paris Agreement. To provide context, at year-end 2019, the Volvo Group had reduced CO<sub>2</sub> emission per shipped volumes in its own freight transport system by 18% from a baseline in 2013. In the manufacturing operations, energy-saving projects totalling 170 GWh have been implemented since 2015. Together with an increased share of renewable energy, these have resulted in CO<sub>2</sub> emissions from the group's manufacturing operations being reduced by more than 35% between 2013 and 2019.

Thanks to improved fuel efficiency, customers using Volvo Group solutions have reduced CO<sub>2</sub> emissions by 34-million

tonnes cumulatively since 2015. The ambition is that Volvo Group will be a net-zero emissions company by 2050, at the very latest. In order to be transparent about its progress, the company has just committed to the Science Based Targets initiative.

The recent strides in electromobility are also a key indicator that capital equipment manufacturers are committed to saving the planet. On June 30, Mercedes-Benz Trucks, at a global virtual event attended by **Capital Equipment News**, celebrated the world premiere of its battery-powered eActros for heavy-duty distribution.

Speaking at the event, Karin Rådström, member of the Daimler Truck AG board, acknowledged that transport is a part of the problem when it comes to climate change. At the same time, OEMs can and will be part of the solution. The eActros and its dedicated services are a big step for Mercedes-Benz Trucks and for transport customers towards CO<sub>2</sub>-neutral transport.

The recent binding agreement between Volvo Group and Daimler Truck AG for a joint venture to develop, produce and commercialise fuel-cell systems for use in heavy-duty trucks also shows that OEMs are willing to put competition aside to save the planet. The Volvo Group and Daimler Truck AG will own equal interests in the joint venture, but continue to be competitors in all other areas such as vehicle technology and fuel-cell integration in trucks. Both companies' goal is to start with customer tests of trucks with fuel-cells in about three years and to be in series production during the second half of this decade.

I am of the view that OEMs have a responsibility to do their best to reduce carbon emissions at every opportunity, from their manufacturing activities, transportation in the supply chain and assembly through to finished vehicles. It is encouraging to see that the industry is taking accelerated action in the quest to stabilise global temperatures at 1,5°C above pre-industrial levels. ☀



Munesu Shoko – Editor



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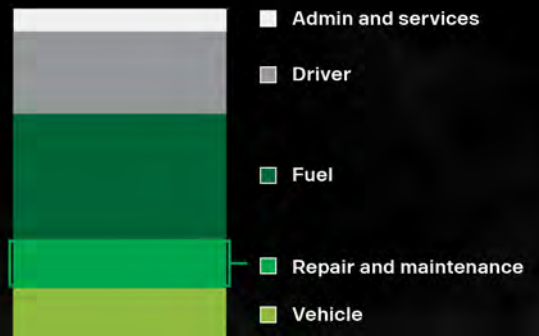


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# SCANIA



The first Liebherr LTM 1230-5.1 mobile crane was recently handed over to Allied Crane Hire at an exclusive event attended by *Capital Equipment News*.



## FIRST LIEBHERR LTM 1230-5.1 CRANE IN AFRICA

Allied Crane Hire has taken delivery of the first Liebherr LTM 1230-5.1 mobile crane in Africa. The five-axle crane scores with the longest boom in the 230 t class and a range of Liebherr's technological advancements such as the single engine concept, VarrioBallast and VarioBase support technology – features that were central to the crane hire specialist's buying decision, writes *Munesu Shoko*.



Allied Crane Hire has taken delivery of the first Liebherr LTM 1230-5.1 mobile crane in Africa

**H**eadquartered in South Africa, Allied Crane Hire is an established name in the crane rental industry in Africa. Founded some 24 years ago, the company provides specialist crane hire services across sub-Saharan Africa with





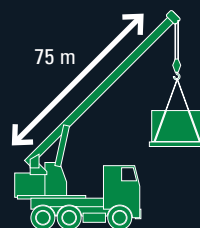
The Liebherr LTM 1230-5.1 is the first mobile crane specially designed on Liebherr's VarioBase.



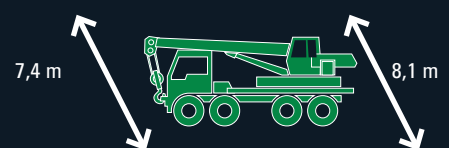
The LTM 1230-5.1 sets a new benchmark in the 230 t class with its 75 m telescopic boom.



The new crane will be deployed in mining and petrochemical applications



The LTM 1230-5.1 sets a new benchmark in the 230 t class with its 75 m telescopic boom, said to be one of the longest in this size class



The new LTM 1230-5.1 is the first to have an asymmetrical support base – with the width being 7,4 m at the front and 8,1 m at the rear

its fleet of over 80 mobile and crawler cranes. Key markets of focus include mining, petrochemical, wind and solar farms, as well as the construction industry.

Allied Crane Hire bought its first Liebherr Crane some 20 years ago, and never looked back. The latest addition to the company's

fleet is the Liebherr LTM 1230-5.1 mobile crane – the first of this model in Africa – which takes the company's complement of Liebherr cranes to 14. GM André Engelbrecht (Jnr) tells **Capital Equipment News** that the company has another LTM 1230-5.1 on order, which is due to be

delivered in April next year.

Engelbrecht is excited to be the first recipient of the LTM 1230-5.1 in Africa. Commenting on why the company opted for this specific model, he says, "We can't look past the German technology. It is actually the best there is! Many in the crane sector



The new LTM crane is the first to have an asymmetrical support base – with the width being 7,4 m at the front and 8,1 m at the rear.



“We can’t look past the German technology. It is actually the best there is! Many in the crane sector will agree with me that Liebherr has the best tech in the mobile crane game and keeps on developing. That’s what mostly stands out for us.”

André Engelbrecht, GM at Allied  
Crane Hire



“The length of the boom is one of the key highlights of the LTM 1230-5.1. Its predecessor, the LTM1200-5.1, also had one of the longest telescopic booms in this crane class at 72 m. The new LTM 1230-5.1 not only delivers an extra 3 m in length, but also an average of 20% greater lifting capacity.”

Francois Pretorius, sales  
representative – Mobile Cranes at  
Liebherr-Africa

will agree with me that Liebherr has the best tech in the mobile crane game and keeps on developing. That’s what mostly stands out for us.”

### Setting a new benchmark

The LTM 1230-5.1 sets a new benchmark in the 230 t class with its 75 m telescopic boom, said to be one of the longest in this size class. Allied Crane Hire will be deploying this crane in the mining industry, and the longer boom is one of the key reasons the company opted for this particular model. “The crane’s 75 m boom bodes well for mining applications where space is at a premium. It means that there is no need to fit any extra fly jibs on site,” says Engelbrecht.

In fact, Francois Pretorius, sales representative – Mobile Cranes at Liebherr-Africa, says the length of the boom is one of the key highlights of the LTM 1230-5.1. Its predecessor, the LTM1200-5.1, also had one of the longest telescopic booms in this crane class at 72 m. The

new LTM 1230-5.1 not only delivers an extra 3 m in length, but also an average of 20% greater lifting capacity.

“The LTM 1230-5.1 is the successor to the global success that was the LTM 1200-5.1. In its development work, Liebherr pursued the objective of increasing both the boom length and the lifting capacity of the predecessor model. The result: the LTM 1230-5.1 delivers an extremely long telescopic boom and sets new standards in lifting capacity. With lattice extensions, the maximum hook height has been increased by 10 m to 111 m,” he says.

Liebherr has a wide and variable range of lattice jibs for the new LTM 1230-5.1. The 11,5 to 22 m long folding jib can be mounted at an angle of 0°, 20° or 40°. The folding jib can be supplied with a hydraulic adjustment system as an option which allows it to luff with a full load between 0° and 40°. The pivot point for the folding jib can be raised using up to three straight 7 m lattice sections acting as telescopic boom extensions.

The maximum ballast for the new LTM 1230-5.1 is 72 t, the same as its predecessor, but as a result of Liebherr’s VarioBallast technology, which can be adjusted from 4,8 m to 5,7 m, the lifting capacity at great radii has been significantly increased compared to the LTM 1200-5.1 and the LTM 1220-5.2. VarioBallast enables the crane to deliver high load capacities with a small ballast radius, making it perfect for use on constricted sites.

In fact, VarioBallast was one of the key features that influenced Allied Crane Hire’s buying decision. Engelbrecht says mining and petrochemical sites are generally difficult in logistical terms, with a lack of space, time pressure and changing site





From left: Erik Benz, GM Mobile & Crawler Cranes at Liebherr-Africa; Francois Pretorius, sales representative – Mobile Cranes at Liebherr-Africa; Dieter Schmid, MD of Liebherr-Africa; and André Engelbrecht, GM Allied Crane Hire, and at the handover ceremony.

conditions, which often challenge the skill and experience of the crane teams. Flexibility is therefore required from both man and machine. “VarioBallast is a key feature for us, especially given that this model will be deployed in the mining and petrochemical sectors where space is always at a premium,” says Engelbrecht.

### VarioBase to the fore

The Liebherr LTM 1230-5.1 is said to be the first mobile crane specially designed on VarioBase. Liebherr placed the multi-award-winning VarioBase support technology at the centre of the structural steel construction when creating the concept for the new crane. The new LTM crane, says Erik Benz, GM Mobile & Crawler Cranes at Liebherr-Africa, is the first to have an asymmetrical support base – with the width being 7,4 m at the front and 8,1 m at the rear.

VarioBase is a unique system developed by Liebherr that is particularly effective for lifting operations in locations where space is restricted. It enables every individual crane support to be extended to any length, with the crane operation made safe by the load moment limiter within the LICCON control. The Variable Supporting Base ensures higher lifting capacities and a larger working range, even with a maximum support base, with the largest increases made in the operating ranges directly above the supports.

“VarioBase means that it is now possible to generate particularly high lifting capacities, mainly at the rear working area

over the 8,1 m wide supports – calculated in real-time by the LICCON controller. This new digitalisation facility has a major influence on the structural steel technology and enhances the customer benefit in the form of lifting capacity increases,” says Benz.

The support base overall is smaller than on the predecessor model LTM1200-5.1, explains Pretorius, despite the new crane’s significantly higher lifting capacity and longer boom. This brings the crane closer to the load. Liebherr designed the support base to have a trapezoidal shape. “At the rear the maximum support width to the side is 8,1 m and to the front 7,4 m. With a working range of 360 degrees, this means that we have almost no reductions in lifting capacity compared to a rectangular support base with a support width of 8,1 m to the front and rear,” says Pretorius.

The single-stage outriggers at the front are lighter. This weight reduction can be used to extend the boom length. Furthermore, the single-stage outriggers feature greater rigidity. The extended rear supports, together with Liebherr’s VarioBase deliver particularly high lifting capacities. “We call the combination of the trapezoidal and variable support base VarioBase Plus,” explains Pretorius.

### Single engine concept

The LTM 1230-5.1 also features Liebherr’s single-engine concept, which involves a mechanical shaft powering the superstructure. Gear shafts are routed from the distributor gear in the substructure via two mitre gears through

the centre of the slewing ring to the pump distributor gear in the superstructure.

“An add-on programme in the drive concept ensures that the machine is particularly fuel-efficient. This means that the complete pump drive can be disconnected automatically when the engine is idling and then reconnected by the intelligent controller in a matter of seconds when it is required,” explains Pretorius.

The six-cylinder Liebherr diesel engine in the undercarriage develops 400 kW of power and torque of 2 516 Nm, providing the LTM 1230-5.1 with all the power it needs. The power is transferred to the crane axles via the 12-speed ZF TraXon gearbox. The innovative gearbox delivers new functionalities and benefits for the operator and driver. ECOmode makes the vehicle significantly more comfortable and quieter due to the low engine speed. Furthermore, faster gearshifts ensure greater scope for off-road use. The crane driver also has the Hill Holder feature to assist with hill starts.

“Liebherr has also developed a special mode for mobile cranes in the load-sensing range to reduce the cost of crane operations while also reducing noise emissions. ECOmode minimises both fuel consumption and noise emissions when operating the crane superstructure. In these tough operating conditions, efficiency is a principal requirement for every machine that we run. The new crane features high performance, economy and flexibility, thanks to Liebherr’s consistent advanced development of successful technologies,” concludes Engelbrecht. 🌀



Scania driver training is flexible, which means it can be tailor made to suit each customer's driver training needs.

## REAPING THE BENEFITS OF OEM DRIVER TRAINING

**As commercial vehicle technology keeps progressing, fleet owners are putting their trust in OEM driver training programmes to keep their drivers up to date with the rapid pace of innovation. As a result, Scania Southern Africa has seen increased demand for its driver training services in recent years, writes *Munesu Shoko*.**

**A**lthough the training truck drivers initially received may have been sufficient for them to get a driver's licence, it surely did not cover the issues fleet owners want them to know in order for them to drive for the organisation. A good training programme thus enhances them with the knowledge and skills to be safe and economic drivers. While this is crucial for all new drivers, training must not stop there; all truck drivers should be provided with ongoing driver education.

For many years the transport industry did not have many positive things to say about drivers and the driver did not

receive much attention. It is, however, encouraging to see that this has changed over the years, reasons Johan Foley, Driver Training manager at Scania Southern Africa, and the vehicle fleet operator has now realised that the driver is an integral part of the transport company, its profitability and success.

"We believe that the driver should receive recognition as a valuable and professional employee of the organisation," states Foley. "The driver is the employee who has the most inconvenienced task to do, although they use the most expensive tools to carry out their duties."

The driver is the front line of any

organisation, adds Foley, and the one employee who sees the company's customers daily. They interact with customers more than any manager. The skills of the driver are, therefore, very important in maintaining the quality and level of service to the customer, and that is instrumental to the profitability of the organisation.

"The driver should have basic knowledge and an understanding of the mechanical aspects of a vehicle. This enables them to do valuable pre, post and on-route checks of the vehicle. This knowledge enables the driver to do defect reporting and to know if the defect was resolved as required," explains Foley.





Appointing the correct driver and applying regular training and development has several benefits for the transport operator.

These actions, he adds, will ensure that the vehicles are available and reliable to provide a service that exceeds the expectation of the customer. "It is also important that the driver is knowledgeable about the loading capacities of the vehicle as they are responsible for ensuring the load arrives in a good condition at the customer," he says.

Appointing the correct driver and applying regular training and development has several benefits for the transport operator. Firstly, a well-trained driver is fundamental to achieving reduced fuel consumption. "Fuel is such a high-priced commodity and the driver is an essential part in keeping the costs and usage low," says Foley.

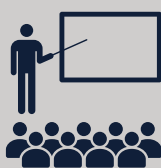
Secondly, he says, maintenance costs of the vehicle also depend on economical driving patterns. The more economically the driver applies their skills, the lower the maintenance expenses.

Driving behaviour also impacts tyre costs. Tyre costs, says Foley, can be reduced if the driver takes care and applies economical driving patterns. Additionally, good drivers result in satisfied customers as loads are delivered safely and on time.

"It is therefore important that organisations look at the welfare and wellbeing of the driver as they contribute a



Commercial vehicle operators now realise that the driver is an integral part of the transport company, its profitability and success



Based on the industry's understanding that a good driver is key to the company's bottom line, Scania Southern Africa has seen increased demand for its driver training services



Scania's training programme supports correct driving methods that reduce fuel consumption, maintenance and tyre costs



Scania driver training also contributes to safety, for example, through effective usage of brakes and retarders

QUICK TAKE



A well-trained driver is fundamental to achieving reduced fuel consumption.

large percentage to the profitability to the organisation,” says Foley.

### Increased uptake

Based on the industry’s understanding that a good driver is key to the company’s bottom line, Scania Southern Africa has seen increased demand for its driver training services.

“Driver training is high in demand,” says Foley. “One must realise that technology changes all the time and drivers are required to receive continuous training to keep pace with the changing technology. New drivers also enter the system and continuous training and development is required.”

COVID-19, however, has had a negative impact on driver training as social distancing has to be maintained. “Pre-COVID-19, we trained at least 90+ drivers per month. Training was scheduled daily using three trainers at various customer sites,” says Foley.

### Scania’s offering

Scania has various driver training offerings, but two of them are largely prominent in the local market. The two-day Scania driver product knowledge training programme entails familiarisation of the vehicle, on-road economical driver training and on-route training at customer

sites, which is the most requested of the services.

Scania also offers customer specific training requests. Scania driver training is flexible, which means it can be tailor made to suit each customer’s driver training needs.

The Scania Driver Training programme has a number of benefits. The most important ones, says Foley, are profitability and safety.

“Today’s organisations are focused on profitability and the training programme supports the correct driving methods that reduce fuel consumption, maintenance and tyre costs, and ensures increased availability of vehicles. These are all major contributors to increased profitability,” he says.

A key focus across industries today is safety. Scania driver training also contributes to safety, for example, through effective usage of brakes and retarders. Accidents are less likely to occur when drivers are well trained. Training can help make drivers more aware of situations they may encounter while on the road, such as bad weather conditions and other drivers behaving irresponsibly. A good training programme can help them understand how to respond to those conditions appropriately.

Driver training can also point out the

dangers of potentially bad driving practices such as driving while taking certain medications, using mobile devices and other dangerous distractions.

### Support tools

As part of its Driver Services, Scania offers Driver Coaching. “Driver Coaching can be seen as an ‘after’ training support tool. Scania offers the C300 system that assists in monitoring the driver’s performance. Once any irregularities are identified with the driver’s driving technique, they can be addressed timeously,” says Foley.

Most Scania customers in southern Africa include the C300 package with the purchase of their vehicles, which allows them to manage their drivers on their own.

Scania can also manage the driver and do coaching immediately. The benefit of this is that the driver can be contacted via cell phone and the trainer does not have to see the driver face to face. The training can be done via phone to correct the problems. If the problem is more serious, personal training can be arranged.

“Driver coaching paves the way to excellent driving habits, helping drivers to reduce wear and tear, stress and fuel consumption while increasing profitability and road safety,” concludes Foley. 🌟





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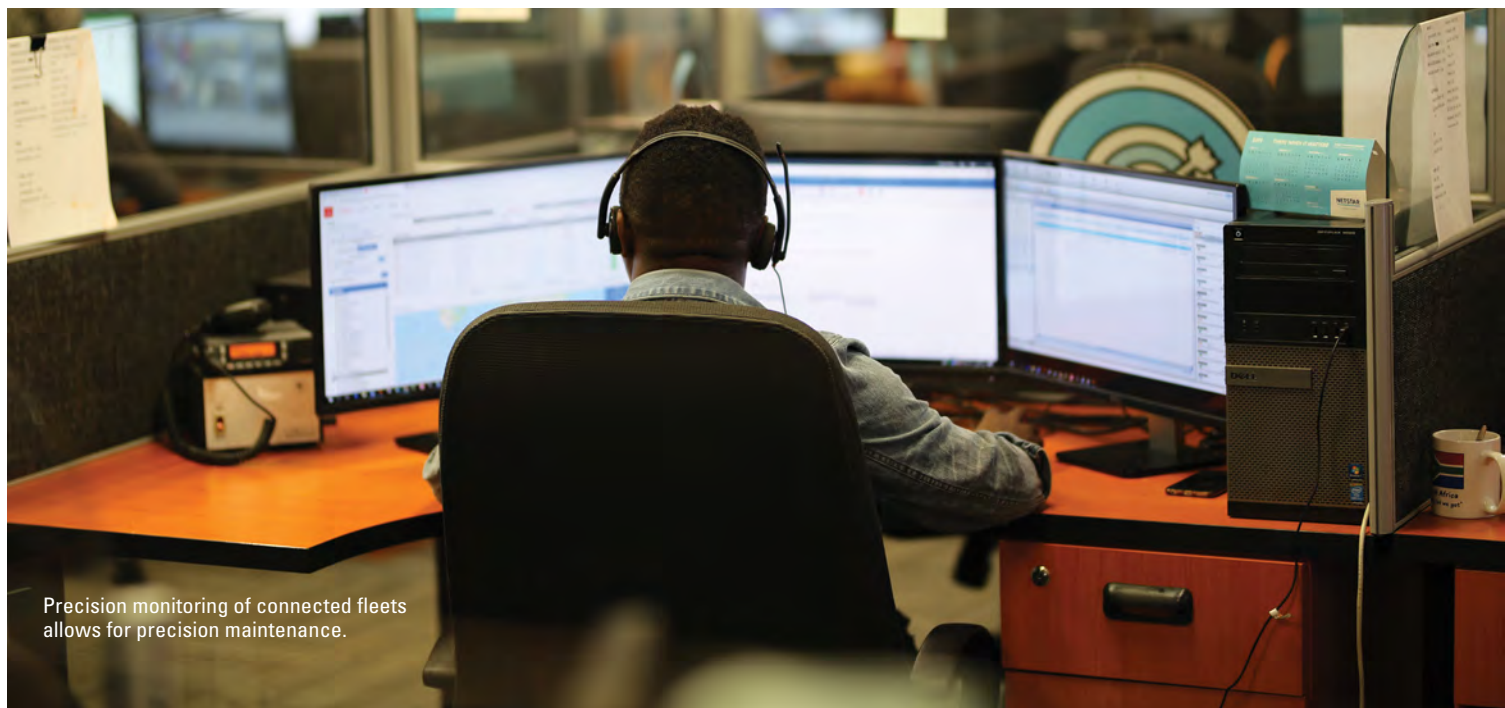
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Precision monitoring of connected fleets allows for precision maintenance.

# FLEET MANAGEMENT AND THE GREAT DIGITAL SHIFT

**The fleet management industry is evolving and developing new trends to improve efficiency and control costs. We approached Netstar for an insight into the developments in this industry and solutions available to the fleet owner. By Mark Botha.**

**W**hen asked to identify some of the key trends in the fleet management industry of late, Netstar CTO Francois Stols says it is impossible to discuss industry trends without mentioning the outbreak of the COVID-19 pandemic.

"Fleet management has been central to keeping supply chains operational so that society can continue to function. To adhere to COVID-19 protocols, logistics must be minimal- or zero-touch by nature. Sensors, monitors, cameras and other telematics technology have become crucial to monitoring and minimising surface transmission of the virus."

He says South African Police Service (SAPS) statistics show an increase in crime during the pandemic, including a rise of 24,6% year-on-year on 2021 in the number of truck hijackings in the country. Tracking and stolen-vehicle recovery tools have therefore become indispensable, as have tools to monitor driver behaviour.

"Another emerging trend is for managers and owners to have direct sight

of their fleet data. Intuitive, user-friendly dashboards allow managers to track their own vehicles in real time, to spot deviations from planned routes, and to take immediate action."

Safety compliance will remain a strong trend as it affects people's lives. Driver and passenger compliance with road-safety rules and COVID-19 regulations is also increasingly tech-driven.

He says Netstar monitoring technology installed on Public Utility Transport Corporation (Putco) buses saw a reduction in accidents from 61 in 2016/17 to 18 by the end of 2019, and that Putco also reduced accidents by 70% and damage claims by 36%.

"We are also seeing an increase in insurance companies embracing technology and encouraging their clients to do the same. Internet of Things (IoT) technology allows for the sharing of information wirelessly. This data can be used to incentivise driver behaviour and to optimise premiums and claims, in addition to its traditional role in stolen vehicle recovery."

Stols mentions the emergence of "a new understanding" of fleet vehicles as OEMs and telematics companies come to see the vehicle as a connected hub where centralised, high-speed connectivity in the vehicle allows the employer to push content such as training modules, webinars, email or online meetings.

"Drivers parked overnight at truck stops can video-chat or even complete e-learning courses."

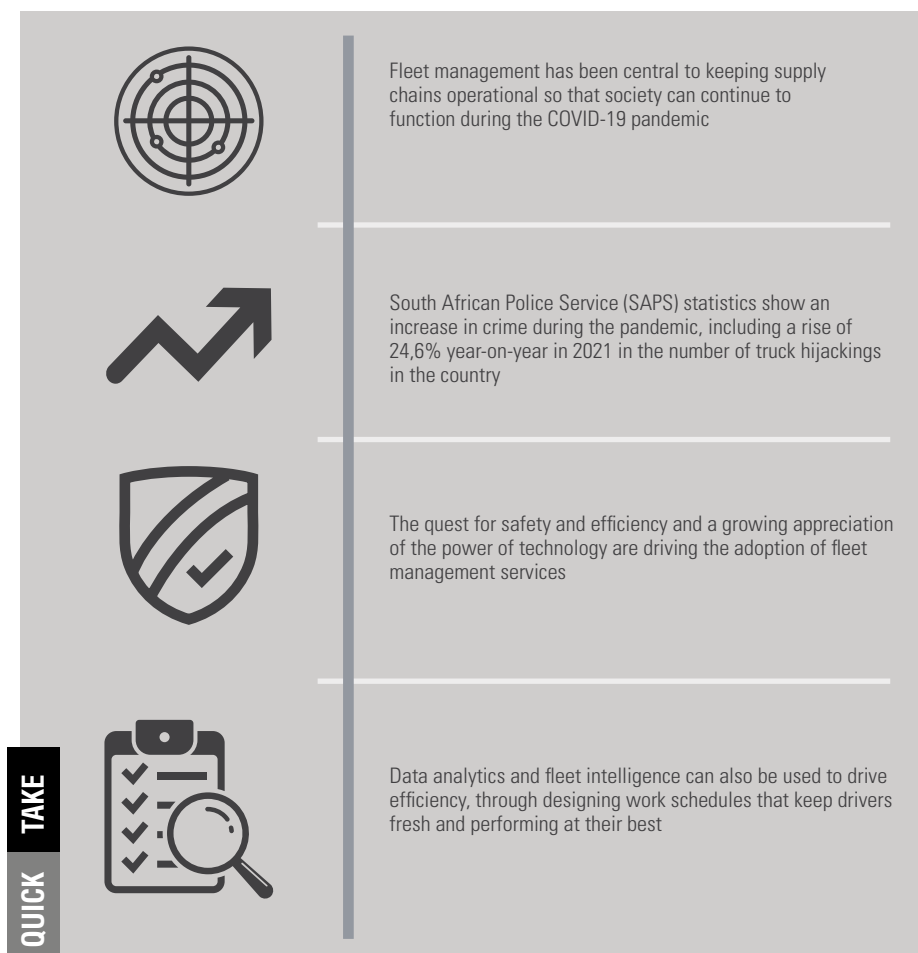
He identifies as another trend the "massive" amounts of data being generated by telematics and the IoT.

"This means that telematics companies are increasingly entering the big data space. Telematics data can be leveraged to improve efficiencies, but it also comes with huge storage and data security responsibilities."

## Industry growth

According to Stols, the quest for safety and efficiency and a growing appreciation of the power of technology in achieving these are the main drivers for this adoption of tech-driven fleet management services.





"Telematics and the IoT generate vast amounts of data about vehicle movement and driver behaviour to make long distance driving safer. Artificial intelligence (AI) enhances our ability to process this data and apply it to enhance driver safety."

He says the Arrive Alive road safety campaign has found that driver exhaustion causes over 20% of long-distance accidents. Technologies such as in-cab and road-facing live monitoring camera systems use both AI and data interpretation to help curb driver fatigue, among others.

"Data analytics and fleet intelligence can also be used to drive efficiency, through designing work schedules that keep drivers fresh and performing at their best. With the precision monitoring of connected fleets, precision maintenance can also be used to improve profitability." He says pre-trip checklists can be entered digitally and the data communicated to headquarters in real time.

Data can also be used to refine efficiencies. A vehicle operating in an area with high dust content, for example, can provide data on oil viscosity that can help other vehicles to operate better in those conditions.

"Insurance companies also benefit from

the increased amount of data provided by technology, as it provides a more accurate understanding of risk. Data can also be used to incentivise safer behaviour and to reduce premiums when there is measurable improvement."

### Considerations for fleet owners

To Netstar executive for Sales Lindile Xoko, business owners' choice of fleet management tools is driven by the primary challenges the business faces at the time. He notes the importance for fleet solutions to be easily scalable "across dozens, or even hundreds of vehicles".

"At Netstar, our OEM-approved wireless add-on accessories make installation quicker, less intrusive, and easier to scale up."

He says cost remains a consideration but that, as a rule, vehicle tracking and fleet intelligence solutions easily pay for themselves in the form of safety and efficiency savings.

### Solutions on offer

Netstar's fleet-tracking option for business customers includes stolen vehicle recovery, with real-time, dot-on-the-map visibility and protection of business vehicles and drivers.

This package includes a fitment

certificate for insurance; real-time signal jamming detection; driver monitoring and rating; impact detection; a wireless panic button; job scheduling and app-driven tracking and logging.

"Our cloud-based fleet management option for businesses works from any desktop or smart device, providing all the essential information for running a fleet cost-effectively and productively," says Xoko. "It comes with our fleet-management software for operational efficiency and cost savings, including driver compliance, service scheduling and maintenance and fuel-cost management; smart geofencing; alert management; automated reports; CO<sub>2</sub> usage reports and violation reports."

The cloud-based Netstar fleet management option for commercial fleet customers works from any device, providing all the essential information for running a cost-effective, productive small-to-medium sized fleet.

It provides stolen-vehicle recovery; an insurance fitment certificate; signal jamming detection; driver monitoring and rating; impact detection; scheduling, and app-based tracking and logging. It is dashboard driven and provides automated reports and insights around service scheduling, maintenance, alarms and alerts, CO<sub>2</sub> usage and violations.

The Netstar ProFleet management solution, says Xoko, offers desktop and web-based software providing risk mitigation and fleet management for a compliant, safe and secure commercial transport operation.

"It provides all the Netstar Fleet Management features as well as our ProFleet Management Software-as-a-Service (SaaS), which includes CAN bus reporting; OEM dependant fuel profiling; route, Green Band and cold-start management; advanced driver identification and a stolen-vehicle recovery backup device."

### New developments

He says the near future holds new safety technologies including sensors that provide lane-departure warnings, pedestrian and vehicle-collision warnings, as well as eye- and face-sensor technology to detect fatigue.

"These technologies' most powerful application comes to the fore when they are integrated into manager dashboards, with full fleet-intelligence insights. Fleet owners will then be able to spot trends in their fleets."

Stols says long-haul drivers tend to become sleepy, but if fleet intelligence



"Telematics and the IoT generate vast amounts of data about vehicle movement and driver behaviour to make long distance driving safer. Artificial intelligence enhances our ability to process this data and apply it to enhance driver safety."

Francois Stols, CTO at Netstar



"The near future holds new safety technologies including sensors providing lane-departure warnings, pedestrian and vehicle-collision warnings, as well as eye- and face-sensor technology to detect fatigue."

Lindile Xoko, Netstar executive for Sales

indicates that most drivers become tired on a certain stretch of road or after a certain period driving, owners can make systemic interventions with bigger impacts.

"Driver monitoring has already shown significant measurable results. The Netstar-Putco partnership improved passenger and driver safety materially by reducing accidents and by enhancing COVID-19 compliance through a network of onboard cameras."

He says the rising crime rate, hijackings and vehicle theft during COVID-19 lockdowns pose another threat to driver safety. Vehicle tracking technology combined with data analysis and crime reports can facilitate responses to driver alerts almost immediately, enabling fleet owners to plan the safest possible routes or to reroute drivers in real time.

"On an industry level, we are seeing closer cooperation between vehicle manufacturers and technology companies in optimising the safety, efficiency and quality-of-life advantages of the connected vehicle."

As an example, Netstar, has partnered with Toyota to share connected technology, while other partnerships also on the cards. 🌐

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The SP931 is suited for construction, refuse and dump trucks. It offers a wide lug pattern for extra-long tread life and enhanced traction under the toughest conditions with a strong casing design for stone damage protection. Only intended for short-haul and off-road applications.

## SP925A

The SP925A is designed for drive-axle use and suited for construction, dump truck and mining usage. A special tread compound offers improved cut and chip-resistance and deep tread grooves improve off-road traction. Stone ejectors reduce stone trapping and stone drilling into the casing, improving retreadability. Only intended for short-haul and off-road applications.

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To help lifting equipment asset teams control this critical data from a central point, Yale Lifting Solutions has launched Lifting Connect, a cloud-based tracking system that takes the paper trail out of asset management and inspection.



Keeping track of lifting equipment, tools and machinery, as well as the related mandatory legal inspections, have traditionally been done manually, calling for extensive paper trail. To enable real-time, accurate and efficient asset management, tracking and inspection, Yale Lifting Solutions has developed Lifting Connect, a digital, cloud-based tracking system that vastly reduces human error, writes *Munesu Shoko*.

Lifting equipment, explains Ashley Davis, Group Services & Marketing manager at Yale Lifting Solutions, must be inspected at regular intervals in accordance with OEM & DMR legal requirements, maintenance schedules and procedures to ensure safety for all working on site. The results of each inspection must be recorded properly in a register, detailing the inspection date, when the next inspection is due and any defects which are, or could become, a danger to



The biggest advantage is that asset managers can now access all records about a specific item online, with all the required information at their fingertips

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"Lifting Connect incorporates an ID to each asset, through tags, laser-engraved barcodes or RFID tags which are scannable using a specialised barcode reader or RFID scanner."

**Ashley Davis, Group Services & Marketing manager at Yale Lifting Solutions**



With data securely stored in the cloud, asset managers can access real time inspection and tracking once the system has been synced.

those working on site.

"In the lifting industry, all the equipment has to be inspected, be it quarterly, bi-annually or annually, depending on the type of equipment, and these inspections have to be 100% traceable," explains Davis.

"Currently, this is still done on paper. These inspections, which should be available for scrutiny by auditors or any other interested parties, are kept in a register that is held somewhere in the building. Should anyone need to refer back to an inspection, they have to physically dig out the old inspection certificates or records of inspection from these files." This can be daunting, says Davis, and in the worst case scenario, the paper trail can be misplaced or lost.

To help lifting equipment asset teams control this critical data from a central point, Yale Lifting Solutions has launched Lifting Connect, a cloud-based tracking system that takes the paper trail out of asset management and inspection. Currently, the technology caters for 23 lifting asset types, including hand-powered and power-driven lifting devices, lifting tackles, cranes, mono rail beams, forklifts, vehicles (passenger), fire extinguishers and certain power tools.

The cloud-based tracking system was developed by a local team of industry experts under a strategic partnership. Yale

is an OEM and industry leader in lifting equipment manufacturing, supply, service and repair. The company has been using cloud-based software for the past nine years for its internal and external inspection as well as for certification.

One of the development partners, a long-term partner of Yale Lifting Solutions, is an industry leader in integration of various ERP, asset management software and cloud-based workforce solutions. Another Long term partner- is an industry leader in asset management and RFID technology and implementation of mobile and fixed reader RFID equipment.

### Lifting Connect in detail

All lifting equipment, with the exception of few items such as shackles and eye bolts, among others, are marked with unique serial numbers at the time of manufacture. If not fitted with serial numbers, batch numbers are normally an option. If not, the supplier has options to mark the item in many different ways before supply, and that in essence becomes the asset number.

Effective February this year, Yale is laser-engraving all lifting equipment where possible with 2D codes containing the serial number in addition to existing factory-fitted name plates and ID tags. All shackles, explains Davis, will be laser-engraved with a serial number before they are supplied to customers. All other equipment will be fitted with barcoded ID tags or unique numbered Lifting Connect tags as per customer requirements. Meanwhile, RFID tags are available on customer request.

"Lifting Connect incorporates an ID to each asset, through tags, laser-engraved barcodes or RFID tags which are scannable using a specialised barcode reader or RFID scanner," he says. "This links to an android-based app that allows for the input of asset-specific inspection information that is stored and is downloadable into different formats, including Excel, CSV, Print or PDF."

Lifting Connect also caters for generic

electronic form capturing and examples include time sheets, near miss reports, risk assessments, leave forms, planned task observations and more.

The asset type and inspection forms, which are fully customisable, are designed around current legislation – OHSA and DMR requirements, MHSA requirements, SANS & International Standards, as well as Best Practice, among others.

### Benefits abound

Stored in a secure and customised cloud where no additional server or software is required, data is backed up continuously and access to information for all assets on the customer's database can be done via a web portal where users can access various documents including asset history, asset inspection history, inspection certificates, legal status, current location and last inspection date, among others.

"The legal retention for all inspection certificates, for example, is 10 years. With Lifting Connect, customers are able to keep this information safely on the cloud and track inspection history of the asset even well after 10 years. There will be hundreds of records kept under the asset and this is easily traceable than when using a paper trail," says Davis.

With data securely stored in the cloud, asset managers can also access real time inspection and tracking once the system has been synced. The data is easily searchable and can be filtered according to the user's specific needs.

"The biggest advantage is that asset managers can now access all records about a specific item online, with all the required information right at their fingertips. One doesn't need to leave their desk to find a file that is 10 years old or even pick up a phone to instruct someone to bring it for audit purposes," says Davis.

The system's ease of use is unmatched. If one, for example, wants to view all their past equipment, they can sort by legal status, which allows them to see all the passed and failed items and the action taken afterwards.

"If I know that my legal inspections have just been completed, I am already aware via the dashboard that there are failed items. As a manager or responsible person, it's my job to lock the failed items away. I can decide whether to discard (if repair is out of question), or to send them to the OEM for necessary repairs. The legal status will be updated in the system based on the action taken and the information is there at your fingertips. This is a new era in asset management and inspection," concludes Davis. 🌀



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A side-shift backhoe loader can dig along walls or structures.

# BACKHOE LOADERS: CENTRE-MOUNT OR SIDE-SHIFT?

**The debate over centre-mount versus side-shift backhoes is ongoing, with some in the industry preferring the superior lifting capacity of the former and others attracted to the greater lateral reach offered by the latter. This feature highlights the differences between the two, their applications, advantages and disadvantages, and sheds light on some of the models available in the market. By Mark Botha.**

**T**he primary difference between the centre-mount (or centre pivot) and side-shift backhoe, according to Mahindra South Africa CEO Rajesh Gupta, lies in the placement of the swing post.

"On a centre-mount backhoe, the swing post is mounted in the middle, at the centre of the H-frame while, on the side-shift version, the swing post can be moved to either side of centre, allowing the backhoe arm to move exactly as required by the operator.

He says the centre-mount backhoe is suited to "a very specific operation" where the work is clearly defined and the area is well controlled.

"The side-shift backhoe, by contrast, is the backhoe of choice if the environment is bound to change and where the work is more demanding. Think, for instance, of working on hilly ground or doing corner trenching, where there is some difficulty to manoeuvre."

Revaro Construction Operations manager Lourens Ackerman agrees, saying the

central position of the swing post on centre-mount backhoes is a fixed position from where the stabilisers swing out and down from the sides of the frame.

"A side-shift backhoe is designed with the backhoe's kingpost mounted on a carrier. This carrier can slide from one side to the other along a frame, with rails that include stabilisers mounted on both sides, which extend vertically."

He says the choice between using a centre-mount or side-shift backhoe should be based on the nature of the project: "Consider the type of trench you plan to dig or the space constraints in which you will be doing the work."

Griffiths Makgate, C&F sales manager Africa and Middle East at John Deere, adds that the stabilisers on centre-mount machines "open wide and protrude beyond the width of the machine".

"On side-shift machines, the backhoe moves sideways and the stabilisers are positioned vertically. Their width matches that of the machine."

## Applications

While the centre-mount backhoe is more suited to well-defined and controlled work areas, says Mahindra's Gupta, side-mount backhoes are better suited to complex environments or to where the machine is called upon to work in "varying conditions".





Operators appreciate the low maintenance costs on Mahindra's EarthMaster.

Makgate notes that, while both backhoe types work well in construction, centre-mount machines are not preferred in confined spaces due to the width of their stabilisers.

"However, both types are suited to agricultural applications as there are no restrictions apart from steep or uneven ground."

Revaro Construction workshop and equipment parts manager Kobus Hartzenberg says backhoe loaders are "very common" and can be used for a wide variety of tasks, including construction, small demolitions, transportation of light building materials, excavation, landscaping and breaking asphalt.

"Their relatively small frame and precise control make backhoe loaders very useful and common in urban engineering projects such as construction and repairs in areas too small for larger equipment.

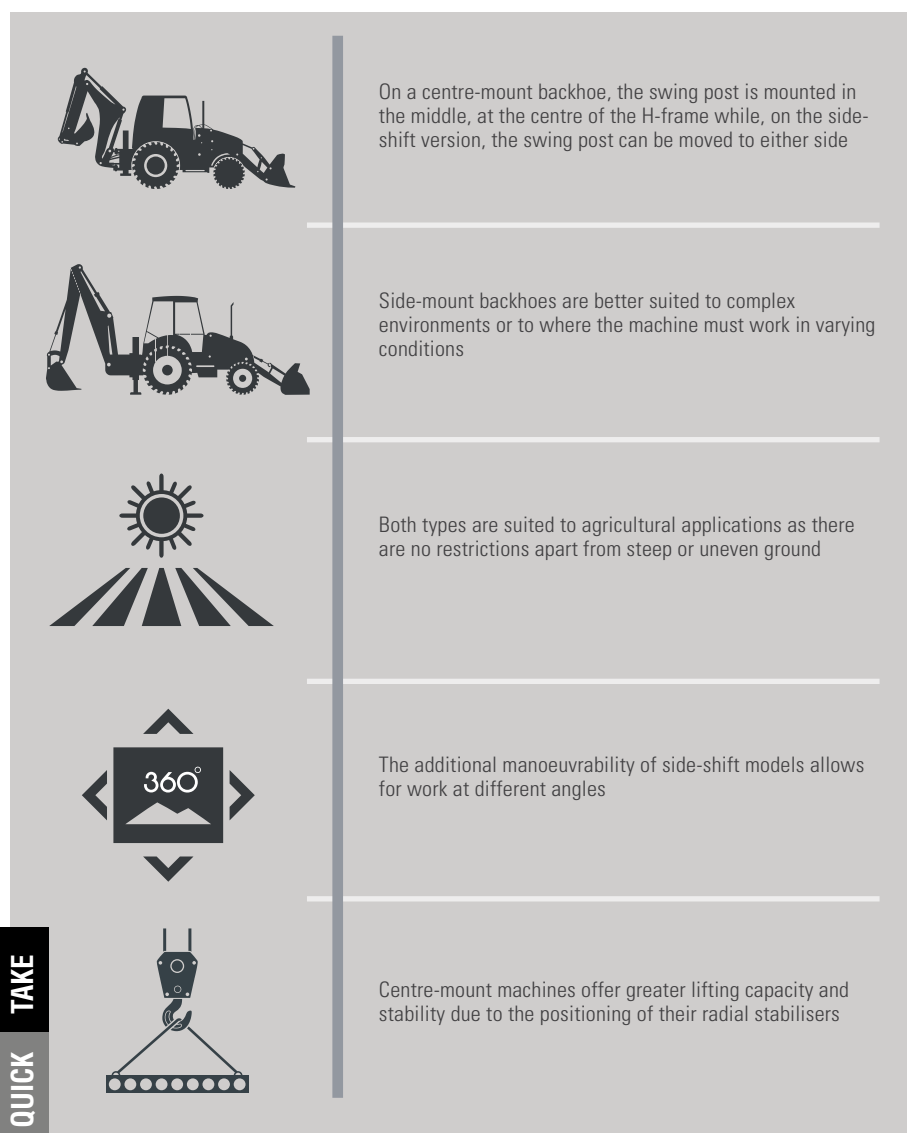
He, too, stresses that centre-mount, tractor-loaded backhoes work well on construction sites with unrestricted space, but adds that their side-shift counterparts are suited to sites "where you may have to dig a trench next to a wall, for example".

### Advantages and disadvantages

Gupta includes among the advantages of the centre-mount backhoe the stability offered by these machines, both while being driven and during operation.

"You can often dig deeper with centre-mount backhoes and their digging performance remains consistent, thanks to the fixed mounting. This fixed design also provides greater breakout and digging force as opposed to side-mounted backhoes."

He says the fact that the arm is mounted at the centre of the A-frame allows for



greater lifting capacity and ensures more stability when loaded. Centre-mount backhoes will also offer lower operating costs in many applications.

In more complex operations such as corner trenching, however, the centre-mount backhoe will be less effective than the side-shift version, which can work comfortably in



"Centre-mount, tractor-loaded backhoes work well on construction sites with unrestricted space."

Kobus Hartzenberg, Construction Workshop and Equipment Parts manager at Revaro



"Side-shift backhoe loaders offer greater lifting capacity and stability due to the positioning of the radial stabilisers. Variable working angles relative to a position on the backhoe loader arm also improve vision when working in trenches."

Lourens Ackerman, Construction Operations manager at Revaro



"You can often dig deeper with centre-mount backhoes and their digging performance remains consistent, thanks to the fixed mounting. This fixed design also provides greater breakout and digging force as opposed to side-mounted backhoes."

Rajesh Gupta, CEO of Mahindra South Africa



"While both backhoe types work well in construction, centre-mount machines are not preferred in confined spaces."

Griffiths Makgate, C&F sales manager Africa and Middle East at John Deere



The side-shift backhoe is suited to trenching in tight spaces.

can be folded back across the width of the vehicle, allowing for easier transport to site and easier movement on site than with the fixed-arm backhoe."

He says the additional manoeuvrability is thanks in part to the larger number of moving parts, which in turn may require additional maintenance when compared to a centre-mounted backhoe.

Revaro's Ackerman says these machines offer greater lifting capacity and stability due to the positioning of the radial stabilisers.

On the side-shift backhoe, he says the movement of the arm enables the operator to work in confined or reduced spaces.

"Variable working angles relative to a position on the backhoe loader arm also improve vision when working in trenches," he says. "These machines also feature vertical stabilisers, so enabling a smaller working area."

He says the boom and arm of the backhoe can be folded over the width of the machine for better transport or movement on site.

"The maintenance of a backhoe with a movable boom is comparable to that of centre-mount backhoes, except for the additional points located in the sliding mechanism," he says.

John Deere's Makgate cites as an advantage of the centre-mount backhoe the improved stability afforded by 'butterfly' stabilisers while trenching or craning with the rear excavator.

Disadvantages include a wider stance that encroaches beyond one lane of street traffic and the fact that centre-mount backhoes cannot perform offset digging as the rear structure can limit visibility.

"Transporting these backhoes by road can cause the machine to 'porpoise' or bounce, as the rear structure cannot be tucked up close to the tractor."

He says the advantages of the side-

confined spaces or any outdoor area where manoeuvring is difficult.

"This, of course, is thanks to the fact that the arm can swing from side to side and work all around the vehicle."

He says the additional manoeuvrability of side-shift models also allows the backhoe operator to work at different

angles. He says the additional manoeuvrability is thanks in part is not only allows different types of trenching, but also gives the operator greater visibility.

"The side-mount backhoe has greater lateral reach than its fixed-arm counterpart. This backhoe's boom and arm





Mahindra's four-wheel drive, side-shift EarthMaster.



The 315SL side-shift backhoe from John Deere.

shift backhoe include the ability to dig along walls or structures, the fact that these machines only take up one traffic lane during street repairs, digging or trenching, and the fact that they can undertake offset digging as they provide better visibility.

"With side-shift machines, the operator can dig square trench boxes without re-positioning the machine. You can also tuck the rear structure up close to minimise bouncing on the road."

He says the vertical stabilisers on side-shift machines provide reduced stability,

and that the rear frame is situated too low to the ground and can therefore "drag through the terrain".

### Ranges


Gupta says Mahindra's EarthMaster has been available in South Africa for three years and has found favour with many types of operator who appreciate the low maintenance costs and ease of operation.

"The 90 HP EarthMaster VX90 with four-wheel drive is both a backhoe and a loader and offers several bucket options.

According to Hartzenberg, Revaro offers backhoe loaders in four sizes: 60; 76; 96 and 100 hp.

"All these models are four-wheel drive, with side-shift booms, which makes for a more versatile machine.

"We also offer our backhoe loaders with the optional quick hitch feature to simplify the process of changing attachments. This saves time and makes the machine more diverse." He says Revaro also offers a variety of attachments for use in construction and agriculture. 🌱



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The Powerstar FT5 M4 and FT10 M4.



## EVER STAR INDUSTRIES LAUNCHES NEW FT5 M4 TRUCK RANGE

**On June 15, 2021, Ever Star Industries launched its new Powerstar FT5 M4 medium commercial vehicle, and showcased its Powerstar FT10 Max chassis cab truck at the Steyn City Equestrian Centre in Chartwell, Johannesburg, reports *Mark Botha*.**

**S**peaking at the launch, Ever Star Industries senior head of sales and marketing Rodney Selesnick said the FT5 is the second model in the Foton M4 medium to large truck range, and that it is the net result of cooperation between Foton and Daimler-Chrysler.

"We developed the FT5 to be in direct competition with its Japanese counterparts," he says. "It is by no means an entry-level vehicle but a powerful, well-spec'd truck offering significant benefits over its competitors."

The FT5 was put through an effective total of 1,6-million km in road tests under various conditions.

"This is a no-nonsense, highly effective and well-constructed vehicle that drives like a large SUV while its many applications make it perfect for various industries," says Selesnick.

He describes the FT5 as the result of a partnership between Chinese truck

manufacturer Foton, Cummins, ZF, Wabco and Daimler-Chrysler.

"With these partnerships and the might of Foton behind it, the FT5 series offers the best of European and Chinese integration and build quality."

Selesnick says the M3 range is very reliable but that the M4 "takes it to the next level" as it is in direct competition to Japanese trucks in the same class.

The FT5 M4 has the same driveline, engine, gearbox and braking system as the M3 series, but features improved ergonomics and safety features in the cab, a new chassis configuration and an improved wheel track, to simplify driving.

He says the FT5 features direct integration of current fleet management systems and tracking devices, "so that the owner does not have to add sensors and have different relays for data on fuel consumption, harsh braking, over-speeding or heavy cornering".

The truck is also earmarked for integration of automatic manual transmission (AMT), which is currently in the final stages of testing.



"We developed the FT5 to be in direct competition with its Japanese counterparts. It is by no means an entry-level vehicle but a powerful, well-spec'd truck offering significant benefits over its competitors."

**Rodney Selesnick, senior head Sales and Marketing at Ever Star Industries**





The newly-launched Powerstar FT5 M4.

| QUICK TAKE   |  |
|--|--|
| The FT5 is the second model in the Foton M4 medium to large truck range  |  |
| The FT5 M4 has the same driveline, engine, gearbox and braking system as the M3 series   |  |
| The truck features direct integration of current fleet management systems and tracking devices                                 |  |
| The FT5 is earmarked for integration of automatic manual transmission (AMT), which is currently in the final stages of testing |  |

“This testing will be complete and this component will be added to the vehicle’s driveline by around the latter half of 2022.”

## Safety

The M4 series has an active braking system by WABCO, featuring disk brakes to provide high braking efficiency.

In terms of vehicle crash safety, the series, which has a frontal impact energy of 44,1 kJ, meets the ECE R29 regulatory requirements, and features safety belts with pretensors and

hinged and strengthened steel plates and anti-collision beams.

## Cab

Dashboard information content includes mileage; time; fuel consumption; gear position; malfunction code; screen light adjustment and maintenance information.

The cab provides increased visibility and features double-sealed cab doors to improve soundproofing.

The M4 series’ electrically adjustable dipped headlights with a light strength of 50 000 candela feature a daylight function which makes the vehicle more visible during adverse conditions such as misty conditions on the road.

## Chassis

The chassis is pre-drilled and the top (upside) rail has no rivets for easy refitting.

According to Selesnick, some 35% of the current chassis is of a completely new design, while the remaining 25% has been upgraded.

Load-bearing is increased by a high-strength steel chassis and a two-piece driveshaft and leaf springs with standard rear stabiliser bars.

## Engine

The FT5 M4 has a four-cylinder Cummins ISF3,8 engine with a displacement of 3,761 ℓ, and a power output of 115 kW and maximum torque of 500 Nm.

Fuel consumption based on the ISF3,8 engine amounts to 13,5 ℓ for long-haul travel; 14,85 ℓ short-distance, and 14,86 ℓ per 100 km for city travel.

Maintenance on the engine is at 15 000 km intervals or annually, and engine oil changes require 4,5 ℓ of oil. The FT5 has a two-year, unlimited kilometres warranty.

Accelerator response under idle load is 0 – 100 km/h in 23,2 seconds and 0 – 100 km/h in 48,5 seconds under full load.

Selesnick says a payload advantage of some 600 kg on the FT5 stems from the weight of the engine, improved chassis design, and the lightweight transmission.

## Transmission

Power transmission on the FT5 is via a ZF six-speed Ecolite manual gearbox featuring a light aluminium alloy shell and optimised gear ratio for reduced fuel consumption, as well as an updated helical tooth design for ease of operation.

This lightweight vehicle also features an aluminium alloy fuel tank, air cylinder and power steering pump. The body meets the requirements of the ECER 29 regulations.

The chassis cab of the FT5 M4 sells at R380 000 while the van body retails at R469 000, VAT-exclusive. 🌐



Brent Light, EIE Group national manager: Toyota Counterbalance, in front of an electric Toyota forklift.

# LITHIUM-ION A BOOST FOR ELECTRIC MATERIALS HANDLING EQUIPMENT

**Most South African materials handling operations still rely on fossil-fuel burning equipment today, but the situation is changing with the introduction of lithium-ion battery technology and a shift in mindset in the market towards electrically powered equipment. We approached EIE Group for an update on the development, advantages and applications of this game-changing technology. By Mark Botha.**



**"The majority of South African materials handling companies currently still use fossil-fuel burning equipment, but the industry is moving – we are seeing a marked trend of more electric units coming into the country."**

**Brent Hean, CEO of EIE Group**

**B**rent Hean, CEO of industrial equipment solutions provider EIE Group, loosely divides the materials handling equipment (MHE) market into the counterbalance forklift and the warehousing sectors.

These two sectors, he says, are characterised by the energy storage methods employed by each.

"Seen this way, the warehousing sector is characterised by the use of electric equipment, yet internal combustion (IC) machines still make up some 60% of the materials handling market in South Africa."

He says that, in terms of the counterbalancing market (excluding the warehousing sector), this figure rises to almost 77%, which means that the "vast majority" of traditional forklifts currently sold locally are internal combustion machines burning either diesel or liquid-petroleum gas.

"The majority of South African materials handling companies currently still use fossil-fuel burning equipment, but the industry is





An electrically powered Toyota four-wheel electric forklift from EIE Group.

moving – we are seeing a marked trend of more electric units coming into the country.

“On the counterbalance side, we are seeing a roughly 2% decrease in internal combustion machines entering the country, and a corresponding increase on the battery-operated side. So, the industry is moving predominantly towards electric forklifts.”

He says this is driven mainly by three factors including changing legislation in sectors such as the food industry, where greenhouse-producing machinery is no longer permitted.

The second factor, says Hean, is a mindset shift whereby corporates are becoming more ‘green conscious’ and are evaluating their supply chains and reducing their carbon footprints.

The third and final factor pertains to storage trends in industry as companies move away from traditional internal combustion equipment and focus on the warehousing sector to reduce their carbon footprints.

### Toyota Counterbalance

EIE Group national manager: Toyota Counterbalance Brent Light says Toyota has “always” focused on developing environmentally friendly products: “In terms of traditional, internal combustion machines, the focus has been on developing machines with very low emissions in compliance with all European emission standards. Toyota also has a full range of electric equipment.”

He says this range has in recent years seen major advancements which have made the solution much more capable of taking over some of the traditional IC applications.

[Subhead] Benefits to customers

The change in mindset towards greener solutions has resulted in customers

### QUICK TAKE



It has taken some time for the capacities of lithium-ion batteries to become cost-effective but they have now become a reality



The capital outlay for lithium-ion batteries is currently higher than that for lead-acid, but these prices will shrink in time



Important advancements on lithium-ion technology have resulted in lithium solid-state technology



EIE Group is involved in developing hydrogen cells for the materials handling market, through cooperation with Exxon Mobil

becoming more educated on the subject.

“Customers no longer look at the finished product only,” says Light. “They now look at the entire supply chain.”

He says the internal logistics processes in many industries are a major producer of carbon emissions for these industries.

“The ability to cut emissions from materials handling equipment has an effect on producers’ carbon footprints, especially in areas such as the fast-moving consumer goods (FMCG) industry where transport and internal logistics form a large portion of the carbon footprint.”

Toyota Counterbalance is also reducing its customers’ operating cost as electric equipment has far fewer moving components, so lowering maintenance and servicing requirements.

“Electric equipment also eliminates many operating costs in terms of the fuel and additional lubricants needed for internal combustion equipment. Electrical MHE provides a net capital saving to the customer over its lifetime.”

### Lithium-ion

The introduction of lithium-ion battery technology has been a major talking point in the industry and has recently started to play a major role in materials handling.

“It has taken some time for the capacities of lithium-ion batteries to become cost-effective but they have now become a reality,” says Light.

He says these batteries have made electric equipment even more viable for the more challenging applications traditionally taken on by diesel equipment.

“This makes it easier for our current internal combustion customers to make the switch to electric equipment.”

The introduction of lithium-ion batteries has also removed some of the difficulties around using lead-acid batteries.

“The challenges with lead-acid are long charging times, the need for dedicated charging areas, the need for battery exchange and the elimination of battery gassing during charging.”

Lithium-ion also eliminates battery maintenance as these batteries require no servicing or maintenance.

“This technology has simplified the customer’s experience of electric equipment and has made it more viable for us to replace internal combustion equipment,” says Light.

According to Hean, the capital outlay for lithium-ion batteries is currently higher than that for their lead-acid counterparts, but these prices will shrink in time.



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He says advances have been made over the last year in terms of the recyclability of lithium-ion batteries, notably in Germany where companies are recycling between 90 and 95% of their lithium batteries.

"Those batteries contain valuable cobalt and nickel that can be reclaimed. It is key to EIE Group that they don't go to landfill, and to have a sustainable solution to recycle them. Local company EnviroServ is actively working on a sustainability plan."

Light says a 'green' future in the materials handling equipment industry will include "short-term" technologies that will reduce carbon footprints in the industry.

"Important advancements on lithium-ion technology are constantly being made and have led to lithium solid-state technology, which offers many improvements to today's lithium-ion. These include longer run time and shorter charging times."

He says the content of some of the less sustainable metals in lithium-ion batteries has also been reduced.

### Going off-grid

The final step in eliminating a customer's carbon footprint is for them to go off-grid and, once again, lithium-ion technology has a role to play, this time in its guise as second-life lithium-ion: "Once you've replaced a set of batteries," says Light, "they can have a second life in backup storage. Secondhand batteries can act as a battery bank for backup and power storage with a solar installation, for example."

Hean says a local supplier of lithium-ion batteries already has twelve solar sites in South Africa which are used to charge these batteries.

"We, too, are looking at providing our customers with solar charging stations where they can charge their electrical equipment and not be fully reliant on grid power. This will be an intermediary phase before we develop and supply solutions such as hydrogen fuel cells.

"Some of our corporate clients have over 30 units on site. It would make perfect sense for them to have a space in their factories where they can recharge their forklifts using solar energy, so mitigating the risk posed by the current, unreliable power supply. Such charging stations would also provide another 'battery' for energy storage."

### Hydrogen fuel cells

He says EIE Group is currently "very much involved" in developing hydrogen cells for the materials handling market, through cooperation with Exxon Mobil which specialises in solutions such as fuel cells.

"South Africa is probably four to five years away from implementing this technology, but other countries may get there sooner."

Toyota, says Light, regards hydrogen fuel cells as the "ultimate goal" from a green perspective.

"Toyota Japan is currently in the testing phase of its hydrogen fuel cell forklift trucks," he says. "This technology is very far along the development phase and the first results are looking extremely positive."

He says investment on a large scale is needed for hydrogen fuel cell technology to "make sense in any economy".

"We need infrastructure investment in hydrogen production facilities. This investment is currently very high from a capital cost perspective. Realistically speaking, we won't see this as a popular trend in the South African market for the next five or so years, which is why lithium-ion batteries continue to play a major role in the industry for Toyota." 🌱





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## ELECTRICITY + CONTROL



Accessible on multiple platforms

The Potain IGO 50 from Crane & Hoist Equipment SA during erection.



## SELF-ERECTING CRANES: ADVANTAGES, APPLICATIONS AND THEIR ROLE IN THE SA MARKET

The self-erecting or 'bottom-slewing' crane offers advantages including reduced siting costs, ease of mobility, a small on-site footprint and excellent reach and lifting capacity. For this feature, we approached two local distributors for their take on the applications, benefits and market uptake in South Africa of these cranes. By *Mark Botha*.



"Often, clients prefer self-erecting cranes due to their reduced establishment cost and the ability to move them easily on site."

Jared Terry, Tower Cranes sales manager at MMS Mobile Cranes

The self-erecting tower crane, says Crane & Hoist Equipment SA operations manager Danie Roos, is a compact and easy to erect crane which can be transported to site behind a truck or on a low bed.

"Its compact design allows the crane to be easily erected on multiple positions on construction sites without preparation of large concrete bases." He says these cranes are erected and dismantled via remote control.

"This process is controlled automatically by hydraulic cylinders. The hydraulic system unfolds the mast and jib sections into the final operating position of the crane."

Jared Terry, Tower Cranes sales manager at MMS Mobile Cranes, adds that self-erecting or bottom slewing cranes do not require mobile cranes to be erected.

### Applications

He lists as applications for these cranes small to medium projects such as residential construction, structural steel installation and concrete pouring on smaller construction sites.

Roos says the Potain tower crane range offered by Crane & Hoist Equipment SA is well-suited to a variety of applications on these projects.

"These cranes range from the smaller models such as the IGO 13 with its lifting capacity of 1,8 t and a hook height of 15,8 m, which is suited to housing projects, to the larger IGO T130 with a lifting capacity of 8 t and hook height of 36,2 m, which accommodates the lifting requirements of most construction sites with ease.

### Industry uptake

Terry says self-erecting cranes are well accepted in the South African market: "Often, clients prefer these cranes due to the reduced establishment cost and the convenience of being able to move self-erecting cranes on site with ease."

Roos agrees: "Construction companies who own tower- and self-erecting cranes enjoy the versatility of this type of crane, which affords them more lifting options when planning projects."

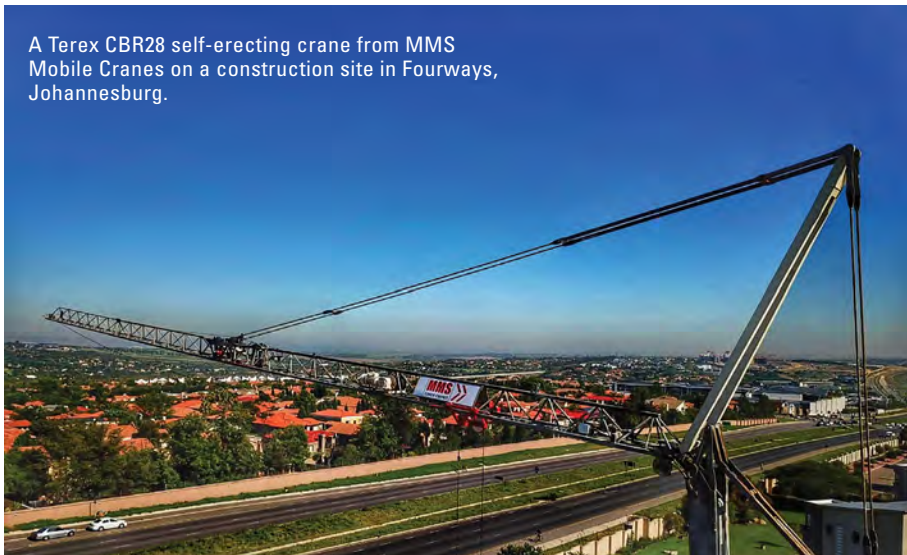
### Key benefits

He says the self-erecting crane is compact and easy to transport while offering advantages including quick and simple erection and dismantling; radio remote control which allows their operation from the optimal position in terms of safety; reduced power consumption, operating and transport costs, as well as both mechanical and electrical dual safety systems.

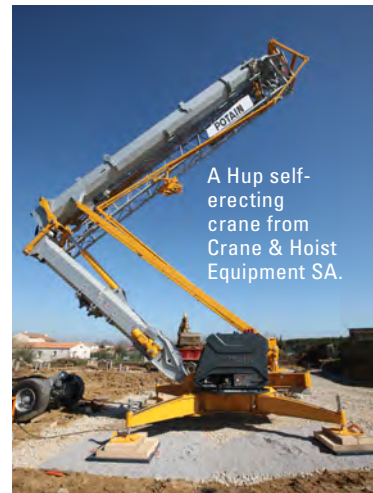
"Self-erecting cranes offer flexibility



A Terex CBR28 self-erecting crane from MMS Mobile Cranes on a construction site in Fourways, Johannesburg.



A Hup self-erecting crane from Crane & Hoist Equipment SA.



and compatibility with all types of site using the various possible jib positions and combinations,” he says.

Terry notes that the cost of ownership and of establishment and de-establishment is so affordable “because you generally do not require a mobile crane”.

### Ranges

He says that, as the authorised distributor of Terex Tower Cranes in South Africa, MMS Mobile Cranes’ range of self-erecting cranes for sale or rental ranges from 18 m reach (the Terex Comedil CBR18) up to 40 m reach (the Terex CSE40), with capacities up to 4,4 t.

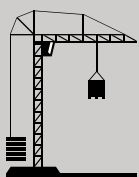
“The new CSE range includes advanced electronic control which makes possible the Terex Power Plus (TPP) function, among others. The TPP function essentially increases the capacity of the crane by 10% if required for specific lifts.”

He says the newer Terex tower cranes come standard with the T-Link telematics system.

“This allows either MMS Mobile Cranes or the factory to view faults on the crane from a remote location. T-Link also acts as a ‘black box’, allowing you to access information about hoisting speed, slewing direction and wind speed during the lifespan of the crane.”

Crane & Hoist Equipment SA is a distributor of the Potain range, which currently offers 17 different models of self-erecting tower crane, covering a wide range of lifting requirements.

“These cranes are known around the world for their lifting power, reliability and innovative designs,” says Roos. “Potain builds over 60 types of tower crane for a variety of job sites ranging from high-capacity top-slewing cranes for infrastructure projects; luffing jib cranes used in the construction of skyscrapers; topless cranes and Hup self-erecting cranes for residential construction. 🌐



Its compact design allows the self-erecting crane to be easily erected on multiple positions without large concrete bases



Self-erecting cranes do not require mobile cranes to be erected



The self-erecting crane is compact and easy to transport while offering quick and simple erection and dismantling, as well as radio remote control



With self-erecting cranes, both cost of ownership and establishment and de-establishment costs are affordable

TAKE

QUICK



“Tower- and self-erecting crane owners enjoy the versatility of these cranes, which affords them more lifting options.”

**Danie Roos, Crane & Hoist Equipment SA operations manager**

The new offering ups the ante for self-erecting cranes with improved capacity and reach over previous models.



# GETTING THE BETTER OF SPACE CONSTRICTED SITES

Potain has launched the Igo T 99, a telescopic mast self-erecting crane ideal for construction sites with space constraints. The crane, with a high lifting capacity of 6 t, a reach of 48 m and a height under hook in horizontal jib position of up to 38,5 m, offers improved reach and capacity from a compact footprint, writes *Munesu Shoko*.

**A**t a recent virtual event attended by **Capital Equipment News**, Manitowoc Cranes unveiled its new Potain Igo T 99. The new offering ups the ante for self-erecting cranes with improved capacity and reach over previous models, but from the same compact footprint that the Igo series is known for worldwide. The impressive capacity and reach from this compact crane will enable customers to bid for and complete more jobs, as its travel and on-site dimensions make the crane easy to transport and ideal for jobsites with tight working conditions.

The Igo T 99 features a 6 t maximum capacity and maximum reach of 48 m. With the jib extended to 45 m, it can lift 1,5 t at the tip. And when it's configured with 48 m of jib, it can lift 1,2 t. The new crane features plenty of vertical reach, too. Its height-under-hook reaches 38,5 m at

horizontal, and when the jib is raised to 30°, it can reach 56,5 m.

For maximum versatility on the jobsite, the Igo T 99 can work with six different jib lengths, and these include 31,7 m; 32 m (in a folded jib position); 33,8 m; 40 m; 45 m and 48 m. Three additional mast sections can be added to the crane, providing seven working heights that range from 20,5 m – 38,5 m.

### Keeping things compact and easy

Transport to the jobsite is made easy by the Igo T 99's compact dimensions. It has a total transport length of just 15,65 m and height of only 4 m when fitted with 80 km/hr axles. It is compatible with all current Potain Igo and Igo T transport axles which adds versatility for customers with more than one Igo in their fleet.

The Igo T 99 features a compact footprint and ability to



Transport to the jobsite is made easy by the Igo T 99's compact dimensions.



Scan QR Code to learn more about the new Potain Igo T 99.



work on constricted jobsites that previous generations of Igo cranes are known for. Its footprint measures only 4,5 m x 4,5 m when erected, and a new unfolding mechanism enables the crane to be erected in narrow spaces close to buildings. This mechanism requires less ground area because the crane deploys from the top after the base is already erected. Levelling the Igo T 99 is as simple as adjusting a support screw, and the crane can be powered from both 480 v 60 hz and 400 v 50 hz power sources.

With Potain Smart Set-Up software, operators can fully erect and decommission the crane using only its remote control. A large, colour screen shows step-by-step progress through an intuitive interface and optimised ergonomics make it comfortable to use. Operators also use the remote for lifting functions. An Operator Control Function enables the pre-programming of three driving profiles so users can customise crane behaviour to their preferences.

For operators that want to operate from a cab, they have their choice of an Ultra View or Ultra View Light Cab. Cab access is compliant with the latest standards and offers a comfortable and productive work environment. These cabs utilise the user-friendly Manitowoc Crane Control System (CCS) that has become standardised across a variety of Potain cranes.

### High-performance and profitable operation

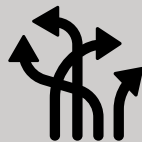
During operation, the Igo T 99 is quick and productive. High-Performance Lifting (HPL) technology delivers high-speed hoisting even when working at maximum load and various speeds can be selected by the operator to match the current operation. With a permanent four falls, there is no need to change the rope reeving on the jobsite.

A newly designed electrical cabinet door opens from the top for maintenance access, providing handy weather proofing for technicians. The electrical cabinet also includes convenient, dedicated storage for the remote-control transmitter and battery charger. Manitowoc's CraneSTAR Diag tool ensures the Igo T 99 stays up and running, flashing warning indicators for working hours, greasing level, troubleshooting, maintenance and much more.

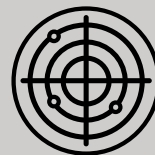
"The newly launched Potain Igo T 99 from Manitowoc is a highly versatile telescoping self-erecting crane with streamlined transport options and easier-than-ever setup and operation," says Rémi Deporte, self-erecting product manager. "This crane will enable customers to take on more jobs and achieve a higher return on their investment." 🌟



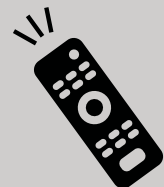
The Potain Igo T 99 is a versatile telescoping self-erecting crane with a 6 t capacity and a 48 m reach



Its 38,5 m height under hook makes the crane ideal for a variety of jobsites



Compact transport dimensions, a compact footprint and an innovative unfolding procedure ease travelling to jobsites and erecting cranes in tight quarters



Potain Smart Set-Up technology, remote-controlled operation and an ergonomic Ultra View Cab ensure the crane is simple to operate in a wide variety of scenarios



A vibrating screen before refurbishment by Haver & Boecker Niagara.

# GIVING CAPITAL EQUIPMENT A NEW LEASE OF LIFE

**A growing trend in industry at present is to turn to equipment rebuilds to extend the useful lifetime of mission-critical assets. We approached Haver & Boecker Niagara and the Catkom Group of Companies for their take on the advantages of rebuilt equipment, the selection of rebuild service providers and for a closer look at some of the rebuild programmes available in this market. By Mark Botha.**

**“W**e are living in strange times and customers are looking for options to save money in their operations,” says Haver & Boecker Niagara sales manager Ricco Britz. He says equipment rebuilds can result in significant savings – up to 40% in some cases – by giving equipment a new life rather than replacing it entirely.

“When rebuilds are completed on a

periodic and planned basis, they can be an extremely beneficial business decision for equipment owners.” Hendrik Jacobs, a director at the Catkom Group of Companies, agrees: “Budgetary constraints may be the single biggest reason for this growing trend in the market to rebuild equipment.”

He says manufacturers often apply excessive pricing structures and under-deliver on services.

“Why pay more for new plant equipment when you can expect huge savings for refurbished components and

machines, built to zero-hour specifications?

He says another contributing factor to this trend relates to turn-around time as having refurbished components in hand to swap with worn parts reduces downtime drastically while increasing the availability of the machine.

## Why rebuild?

The primary benefit of rebuilding equipment, says Britz, are potentially huge cost savings.

“A rebuild may cost only a fraction of what it would take to replace the equipment outright,” he says. “In addition, choosing a rebuild generally means less downtime and, therefore, a reduction in lost production. For example, a standard vibrating screen rebuild may take some four weeks to complete, compared to the up to 16 weeks required when buying new equipment and having it delivered and installed.”

Catkom Group of Companies director Phillip Venter says his company’s rebuild programme includes a complete strip-down to the bare frame; non-destructive crack testing; the repair of components to OEM specifications using OEM parts; replacement of electrical harnesses and hoses; testing; sign-off prior to delivery; on-site commissioning and a specialist on



site to assist with putting the machine into production.

"Our products are rebuilt to manufacturers' manuals and so ensure adherence to OEM specifications. It is offerings such as this that make equipment rebuilds so attractive in the market," he says.

Britz says the advantages to the fleet owner of equipment and component rebuilds include the fact that rebuilds contribute to achieving maintenance and other indicators for the client. This, he says includes helping with production targets, cost of product quality and with mitigating safety issues and environmental impacts.

To Jacobs, the benefits to the fleet owner include more manageable forecasts for scheduled equipment rebuilds, to minimise downtime and production loss.

"Another huge benefit is the fact that repair costs can be discussed with the service provider and, therefore, managed, while new units have rigid, fixed prices."

### Selecting a service provider

"When considering a rebuild, prospective clients should look for a service provider with engineering know-how and the ability to assess the best options for equipment rebuilds accurately," says Britz.

He says the service provider should have a reliable supply of parts available to provide the equipment and materials needed for the project promptly.

"Also ensure that they have a reputation for quality service, such as technical assistance, parts availability, refurbishment services, and more."

Operations should also evaluate the condition of the facilities where the rebuild is to be done.

"Ensure that the service provider has a detailed plan for the rebuild, with the necessary procedures required for each step of the process outlined. Finally, consider whether the service provider offers services in a sustainable way."

"Be sure that the work premises of the equipment rebuilder in fact meets the requirements to perform machine and component remanufacture and be on the lookout for aspects such as on-site testing capabilities, adherence to OEM standards, the warranty offered, ISO registration and processes, as well as the projected turnaround time required to complete the rebuild," says Jacobs.


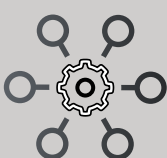
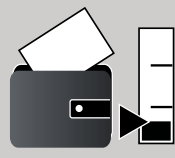

He says the relevant repair information, including service and repair manuals and part prints should be available on site and quality checks should be conducted upon assembly.

### Programmes on offer

Haver & Boecker Niagara offers rebuild



A vibrating screen after refurbishment by Haver & Boecker Niagara.

|  |  |
|--|--|
|   | <p>Equipment rebuilds can result in significant savings of up to 40%</p>   |
|   | <p>When considering a rebuild, prospective clients should look for a service provider with engineering know-how and the ability to assess the best options for equipment rebuilds accurately</p> |
|   | <p>A rebuild may cost only a fraction of what it would take to replace the equipment outright</p>  |
| <div> <p>QUICK TAKE</p> </div>  | <p>The service provider should have a reliable supply of parts available</p>   |

programmes on all its vibrating screens, as well as on non-Niagara brand models, says Britz.

"We provide the option to rebuild sub-assemblies and components such as exciters and vibrating units separately, without the need for the client to send in the complete unit."

He says the company also evaluates the dynamic behavior of the equipment

and provides "extensive diagnostic testing services", including its Pulse Vibration Analysis service, which measures the health of vibrating screens and detects potential problems timeously, before they lead to further damage to the machine and production.

"Similarly, we also offer our Pulse Condition Monitoring system, which provides 24/7 machine vibration monitoring,



A Cat 777D off-highway truck under refurbishment by Catkom.



A Cat D9 dozer stripped down to its frame at the Catkom refurbishment centre.

and alerts the client should problems arise, allowing them to address problems right away."

Following the rebuild, the company provides full reports on machine functionality and offers long-term agreements on rebuilds, including fixed prices for services and wear parts.

"A common vibrating screen rebuild will start with a deep on-site inspection to check the machine's condition, followed by a report including estimated rebuild costs, timelines and more."

He says the next step in the process is to clean the entire machine. This is followed by the

disassembly of the structural parts and complete X-ray and ultrasonic tests on individual structural components for cracks or damage invisible to the naked eye. Parts that cannot be refurbished are replaced.

"The machine is then re-assembled, and we perform a shop test for at least six hours to ensure that it meets OEM performance requirements. Lastly, we provide the customer with a data sheet and a data book which outlines all tests performed, as well as their results."

Venter says Catkom offers complete zero-hour component and machine rebuilds to OEM standards; component change-out and repairs on machines, as well as partial repair options discussed with the client and field service including 'man-on-site' assistance, where required.

"We have a variety of service exchange units rebuilt to zero-hour specifications, and offer fast turnaround time and competitive pricing for genuine parts and components. We also have an on-site dynamometer for engines and transmissions."

In addition, Catkom undertakes complete machine rebuilds where all components are removed, rebuilt and assembled under one umbrella, making the company a 'one-stop shop'.

"We are currently doing 'repair and return' work for various customers in South Africa and abroad. Our strength lies in our skilled employees, and in providing extra service to breach the gap between the end-user and the OEM."

He says the nature of Catkom's business is to purchase equipment, to rebuild it to OEM standards, and then to re-market the equipment to end-users in various industries.

The company's used spares division supplies OEM parts for components in remote areas, as well as on-site backup components for its customers.

"We also conduct pre-planning with our customers for scheduled maintenance change-out programmes, to ensure that components are available when needed," he says. 🌀



"A rebuild may cost only a fraction of what it would take to replace the equipment outright."

Ricco Britz, sales manager, Haver & Boecker Niagara



"Our products are rebuilt to manufacturers' manuals and so ensure adherence to OEM specifications. It is offerings such as this that make equipment rebuilds so attractive in the market."

Phillip Venter, director, Catkom Group of Companies



"Budgetary constraints may be the single biggest reason for the trend to rebuild equipment."

Hendrik Jacobs, director, Catkom Group of Companies



# LUBRICATION BASICS

**Friction and lubrication are concepts that most people understand, but probably rarely think about. Yet both are central to various aspects of everyday life. Callum Ford, national marketing manager at Lubrication Engineers (LE) South Africa, believes that a foundational understanding of friction, lubrication and viscosity will help anyone working with machinery or mechanical equipment to keep it in good working condition, protect its longevity and ensure optimal efficiency, saving on costs and energy usage.**



**"T**here are various types of friction," he says. "Dry friction is the result of movement of one solid body across another, such as a log being dragged on the ground or a piston sliding up and down in a cylinder. Friction is essentially the resistance to motion that's caused by the rubbing and interlocking of tiny projections on the surfaces of all solid bodies. While it's obvious that the surface of the log is rough, the piston's metal surface looks very smooth until you look at it under a microscope."

Fluid friction is when solid surfaces are separated by means of a fluid. Fluids cause very little friction because they are composed of easily separated smooth particles. When a fluid lubricant is used between two solid surfaces, these particles fill up the spaces between the projections and, in effect, smooth out the solid surfaces. The particles of a fluid resist being sheared or separated to some degree, and this resistance to being separated is called fluid friction.

"This condition exists when one surface remains stationary and the other moves, as in the case of shafts and bearings," says Ford. "Parts of the oil are trapped by the roughness on the stationary surface, and another part is trapped by the roughness on the moving surface. As the two surfaces move, the many particles in between are forced to separate

The first rule of lubrication is: use the lightest possible weight of oil.

or to shear. The thicker or more cohesive a lubricant is, the greater the fluid friction or oil drag, or the greater the resistance to flow. Resistance to flow is also the definition of viscosity. Therefore, the thicker or more cohesive a lubricant is, the greater its viscosity. To reverse the definition is to say that the heavier an oil is, the greater its fluid friction."

## Stick to metal

In addition to being cohesive, an oil has to be adhesive. It must stick to metal or have the ability to wet metal. This combination of cohesion and adhesion in oil is what makes it resist being squeezed out of a bearing. The two determine whether or not the lubricant will maintain an unbroken oil film between rubbing surfaces.

Ford says that the first rule of lubrication is: use the lightest possible weight of oil. In other words, the best lubrication and the least amount of fluid friction will come from the thinnest oil that has sufficient film strength to carry the load. "Viscosity should be the first consideration in choosing a lubricant for a particular application," he says. "Viscosity should be suited to the speed and load so as to result in the least amount of friction."

Heavy oils develop greater pressure than light oils and will support greater loads. Increased viscosity is due to larger molecules, greater attraction between molecules and greater difficulty in separating from each other or sliding past each other. If a thinner oil is used, then an increase in load can be tolerated if there is also an increase in speed.

## Prescribing lubricants

When mineral oil is heated, it becomes thinner – its viscosity decreases. This must be considered when prescribing lubricants, particularly when operating temperatures fluctuate.

"We express this viscosity/temperature relationship by the term 'Viscosity Index', which is a way of comparing the viscosity/temperature relationships of lubricating oils," says Ford. "If this is all sounding complicated, it's because it can be. When selecting a lubricant for a particular application, we also need to consider things like what type of additives you should consider for the best results. That's why we'd suggest speaking to a lubrication specialist who can ensure that not only are your lubrication requirements met, but that the product recommended will help to protect your equipment and keep it running well for as long as possible." 🌀

Iveco SA has launched the new Iveco Daily Hi-Matic in South Africa.



## SETTING NEW STANDARDS IN THE VAN SEGMENT

The Iveco Daily Hi-Matic range is finally available in the South African market following the arrival of the first units in September 2020. The award-winning range ushers in a new era in the van segment with its Hi-Matic transmission – the first eight-speed fully automatic gearbox to be offered in this vehicle range – offering drivers and fleets best-in-class flexibility, efficiency, fuel economy and driving comfort. *Capital Equipment News’* Munesu Shoko recently put the new vehicle through its paces and filed this report.

**W**hen you spend the majority of your working day behind the wheel, you want your on-board conditions and driving experience to be as comfortable and smooth as possible. That was our experience when Iveco South Africa afforded us a two-day

test drive of the new Daily. Throughout its 40-year history, this vehicle has continuously been upgraded to provide a first-class environment, raising drivers’ driving experiences to the highest levels in the industry.

While there are several features that are key to the unparalleled driving comfort, the Daily’s exclusive Hi-Matic

8-speed automatic transmission stood out for us. In fact, explains Elvis Mutseura, product marketing manager at IVECO South Africa, the new Hi-Matic transmission represents the first eight-speed automatic to be offered in a vehicle range of this size class. It is already found on premium cars manufactured by Iveco’s sister group companies, Jeep and Maserati, as well as other high-end cars made by global brands such as Bentley and Rolls Royce.

“The automatic transmission is a game-changer in this market segment,” explains Mutseura. “This is the first time an 8-speed automatic gearbox is being offered in this size class. Having eight speeds makes it easier to operate the engine in its optimum operating range. Hi-Matic changes gears quicker and more precisely than the traditional six-speeds, needing just 200 milliseconds to complete a gear shift. The self-



“The automatic transmission is a game-changer in this market segment. This is the first time an 8-speed automatic gearbox is being offered in this class size. Having eight speeds makes it easier to operate the engine in its optimum operating range.”

Elvis Mutseura, product marketing manager at IVECO South Africa





The Daily's entire steering system has been redesigned to give drivers the on-board experience of a passenger car.

| QUICK  | TAKE |
|--|------|
| The first units of the new Daily arrived in South Africa in September 2020   |      |
| The new Hi-Matic transmission represents the first eight-speed automatic gearbox to be offered in a vehicle range of this size class   |      |
| The Hi-Matic offers an average of 4% reduction in fuel consumption and a 4 kg weight saving versus the previous generation Agile gearbox                                     |      |
| The Daily offers one of the widest line-ups in the industry – from 3,3 tonnes all the way up to 7 tonnes of gross vehicle weight, with cargo volumes from 7,3 m³ up to 19 m³ |      |

adaptive shifting strategy of the Hi-Matic automatically chooses the shift control logic between 20 different programs.”

Mutseura believes the game-changing automatic transmission has been key to the quick uptake of the new Daily in the local market. The first stock to arrive in the country late last year has already been

sold out. The Daily Hi-Matic has been well received in emergency medical services where drivers must perform under significant conditions of stress.

### Three modes

The Daily Hi-Matic operates in three main modes, allowing it to be mission-

matched to its primary application – with options comprising Urban, Regional and International.

The Daily Hi-Matic Urban is perfect for those who have to face town and city centre traffic on a daily basis, delivering maximum driveability and comfort thanks to a self-adaptive shifting strategy which adjusts the gear shifting control logic, choosing between 20 different programmes.

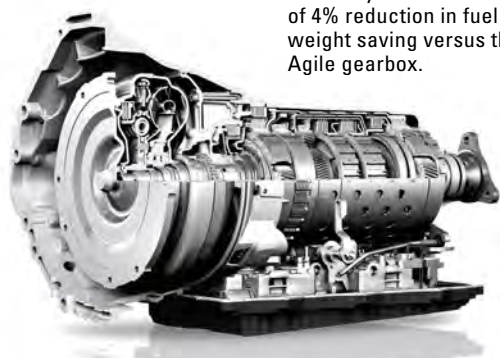
For ultimate flexibility, the Daily Hi-Matic Regional offers outstanding performance, with a choice between Eco mode, offering smooth and low speed gear changes which are carried out to keep fuel consumption to a minimum, or Power mode, which carries out gear changes at higher speeds for enhanced performance. There is also a third option – manual mode – which permits sequential shifting via the gearstick.

Completing the line-up is Daily Hi-Matic International, featuring a double overdrive gear ratio and turbine-torsional-damper torque converter to guarantee improved fuel efficiency on long journeys at high average speeds.

Iveco says the Hi-Matic has been proven the best in its class with a score of 8,5 using the SAE ranking benchmark, which measures every aspect of performance from hill starts to sequential gear change comfort. It has also been praised under testing for its exceptional flexibility, efficiency and fuel economy.

### Cost savings

A combination of the Hi-Matic transmission and other features such as Eco-switch function that changes the engine mapping when less power is required, as well as the aerodynamic improvements and the new



The Daily Hi-Matic is said to offer an average of 4% reduction in fuel consumption and a 4 kg weight saving versus the previous generation Agile gearbox.

The automatic transmission is a game-changer in the van market segment.



220 A (12 V) alternator, results in significant fuel savings, says Bupance Gaveni, product analyst at Iveco South Africa.

In fact, the Daily Hi-Matic is said to offer an average of 4% reduction in fuel consumption and a 4 kg weight saving versus the previous generation Agile gearbox.

The vehicle further scores with up to 10% savings in maintenance costs. "Constant innovations and longer oil change intervals deliver significant savings of up to 10% in maintenance costs. In addition, the bigger oil sump designed for long distance missions extends service intervals up to 30 000 km," says Gaveni.

The three-piece bumper is another cost-saving design employed by Iveco on the new Daily. Bumpers, says Gaveni, are easily damaged on urban missions and in busy traffic, and the cost of repairing them can build up. The modular three-piece design means that fleet owners don't always have to replace the entire bumper; in 90% of cases, only the damaged section is replaced, with consequent savings on repair costs.

### Endless opportunities

The Daily, says Mutseura, is the most versatile range in this size class, with one of the widest line-ups in the industry. There is extensive selection of bodywork solutions that meet each customer's transport requirements, from panel van to semi-

windowed and windowed van.

"The Daily offers one of the widest line-ups in the industry. It is the only van line that ranges from 3,3 tonnes (t) all the way up to 7 t of gross vehicle weight (GVW), with cargo volumes from 7,3 m<sup>3</sup> up to 19 m<sup>3</sup>. The Daily is therefore one of the most versatile commercial vehicle in its class. Whatever the application – be it urban multi-stop deliveries such as parcel or courier services, or heavier transport work like moving furniture – it can be customised to perfectly match the application at hand and business requirements," says Mutseura.

There are also a number of wheelbase choices from 3 000 mm to 4 100 mm and three roof heights, allowing operators to select a specification to ideally suit their application.

Meanwhile, the Hi-Matic transmission can be specified on New Daily van and chassis cab models from 3,5 to 7,2 t, and with engine options including the 106 hp and 126 hp 2,3-l engine, as well as on 3-l engines at 170 hp (light-duty & heavy-duty variants) and 205 hp.

The towing strength of the previous generation Agile transmission has been retained, with the ability to tow loads up to 3 500 kg and guaranteeing optimal acceleration even from a standing start on an incline, assisted by the Hill Holder system (an anti-rollback function for uphill starts) that comes as standard with all New Dailys.

### The driver in mind

With Iveco's understanding that a comfortable driver is a productive one, the new Daily has a special design focus on comfort. Studies also prove that a comfortable driving environment contributes to driver concentration and improved road safety.

The Daily's entire steering system has been redesigned to give drivers the on-board experience of a passenger car. One can make both axial and angular adjustments to the steering wheel and set up the perfect driving position for better comfort and ergonomics. The smaller, leather multifunctional steering wheel puts a wide range of controls at the driver's fingertips and leaves ample leg room, adding to the overall comfort.

The new Daily offers a user-friendly infotainment system with a 7" screen, DAB radio, Driving Style Evaluation, voice recognition, Tom Tom car and truck navigation system and rear camera. The new full LED lights significantly improve visibility and obstacle perception by 15% with a much sharper beam that carries further. With their long life, LED lights also add to the vehicle's overall total cost of ownership gains.

The Daily also makes significant advances in safety with a range of safety features. For example, the steering wheel controls improve road safety by allowing the driver to use their phone without taking his eyes off the road or his hands off the steering wheel.

Iveco's Electronic Stability Programme (ESP) is always on and enabled. A microcomputer monitors the signals from the ESP sensors and checks 25 times a second, whether the driver's steering input corresponds to the actual direction in which the vehicle is moving. If the vehicle moves in a different direction, ESP detects the critical situation and reacts immediately – independent of the driver. It uses the vehicle's braking system to stabilise the vehicle. With the selective braking interventions, ESP generates the desired counteracting force, so that the vehicle reacts as the driver intends. ESP not only initiates braking intervention, but can also reduce engine torque to slow the vehicle.

With the Trailer Sway Mitigation function, the vehicle detects the presence of a trailer and adjusts the ESP control logic appropriately to maintain control of the trailer. This is achieved by a combination of individual brake application to the four wheels and regulation of engine output. 🌟



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