



MODERN QUARRYING

QUARTER 1 | 2025

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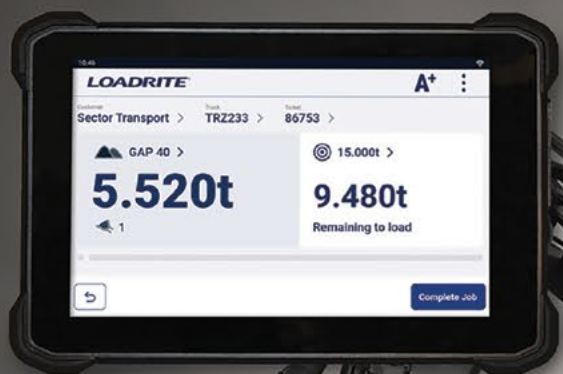
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In a milestone project, Pilot Crushtec International has commissioned its largest ever Pilot Modular plant. Supplied to produce five aggregate sizes for an existing customer in the Democratic Republic of Congo (DRC), the plant is designed to produce 350 tonnes per hour (tph), with a peak design capacity of 440 tph to account for peaks and troughs in day-to-day production.

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ASTEC EQUIPMENT REDUCES QUARRIES' COSTS AND INCREASES PRODUCTIVITY

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THE START OF A **NEW DAWN FOR QUARRYING?**

In the recent State of the Nation address, President Cyril Ramaphosa outlined how much infrastructure development in South Africa could assist with getting the rampant unemployment rate down and improving the basic living conditions of millions, and he announced various grand plans to set the country on a road to growth.

Data shows, shockingly, that the construction industry is half the size of what it was a decade ago. The construction sector's entire supply chain, one of the largest employers in South Africa, is suffering – from quarries, to cement production to civil engineers and builders.

Of course we have heard it before, this heralding of infrastructure development as a way to get the masses working, to improve living conditions and for South Africa's development to return to an upwards curve. The difference this time around is that his recent state

of the nation address comes on the back of the ANC's support dipping to far below a majority that forced to governing party to be in a government of national unity.

It is a misnomer that ANC voters habitually vote for the governing party, no matter the context. Research has shown that ANC voters voted for the governing party because, in general, the economy improved – insofar as their own lives were concerned. In the last election, its lack of support coincided closely with a decline in economic growth of the last few years. So, I suspect that this time around, he is more serious. If these plans fail over the next five years, then the ANC may become insignificant.

Ramaphosa said that the only way to arrest this decline is to make infrastructure development a strategic priority for government. He mentioned the role of airports, roads, railways, public transit systems, water, energy and telecoms infrastructure in driving such

economic growth as this will lead to increased productivity, job creation and improving the delivery of basic services.

Details of what this infrastructure development would entail, occupied a major part of his address. Measures include projects in water and sanitation, human settlements, renewable energy, recreation, heritage and maritime infrastructure. Obviously, there is also road rehabilitation, the refurbishing of state-owned buildings, and the upgrading of health facilities.

These measures may be good news for the quarrying industry as this industry feeds construction and is often the first industry to feel the effects of change – both increased production or decreased production.

This issue is being distributed at the Institute of Quarrying Southern Africa's annual conference in Durban (3 and 4 April) and focuses on all the core aspects of quarrying – crushing and screening, load and haul, drilling and blasting and conveying. The quarrying industry is hoping for the start of the next phase of development. It has invested in technology, safety, human resources and logistics and is ready to supply the construction industry with the aggregate needed to take this country forward. ●

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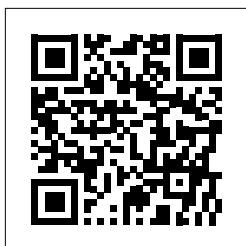
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THREE SOUTH AFRICAN CONSTRUCTION INDUSTRY **FORECASTS FOR 2025**

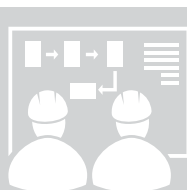
Key shifts within the infrastructure development landscape mean positive tailwinds for South Africa's construction industry, with R322,2-billion currently planned for public infrastructure projects in 2025 alone.

According to Roelof van den Berg, CEO of the Gap Infrastructure Corporation (GIC), this comes as technological advancements and evolving market dynamics drive important innovations, new streamlined regulations for public-private partnerships (PPP) cut project approval times, and government turns its focus to transforming South Africa into a "construction site".

"These changes mark the start of what former Finance Minister Tito Mboweni is said to have called the 'infrastructure years' – a period that could reshape the country's built environment more dramatically than any time in the past decade," he says.

"The benefit of this for communities could be exponential. Not only does it mean expanded service delivery, but the construction industry, as a major

SNAPSHOT



Building on the reported 82 strategic integrated projects (SIPs) valued at R437-billion currently under construction, the industry anticipates substantial increases in public infrastructure spending.



Intense competition within the industry means that companies will have to rely more heavily on advanced tools and AI to streamline processes, optimise procurement, and protect profit margins.



Under the weight of global supply chain pressures, rising material costs, and persistent inflation, the construction industry will be compelled to move beyond incremental improvements, and embrace new levels of technology-driven efficiency.



Regulatory changes will mean fewer barriers, predictable timelines, a healthier project pipeline, and more stable deals – all translating into stronger incentives and better margins for private infrastructure developers.



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Roelof van den Berg, CEO of the Gap Infrastructure Corporation.

employer and economic contributor, will also thrive. A rapid influx of new projects supported and driven by public-private partnerships could act as the lever needed to accelerate economic growth."

Looking to the year ahead, Van den Berg points to three trends likely to shape and influence the industry:

Increased government investment and regulatory changes

Building on the reported 82 strategic integrated projects (SIPs) valued at R437-billion currently under construction, the industry anticipates substantial increases in public infrastructure spending, with significant implications for job creation and socio-economic development.

As outlined within the 2024 National Budget Speech, spending in the 2025/2026 financial year will strategically target specific developmental areas critical to progress. The top three areas of spending will be transport and logistics, with R115,1-billion allocated to strengthening port, rail, and road infrastructure; energy, with R70,5-billion; and water and sanitation infrastructure, with R57,6-billion.

Rises in public spending will be further complemented by the commitment reinforced in the recent Medium Term Budget Policy Statement (MTBPS), which promised far-reaching regulatory reforms to reduce complex red tape, stimulate infrastructure investments, and expedite project rollouts.

Additionally, the Budget Facility for Infrastructure (BFI) will shift from one annual window to continuous evaluation, ensuring a more regular and predictable pipeline.

"These changes mean fewer barriers, predictable timelines, a healthier project pipeline, and more stable deals – all translating into stronger incentives and better margins for private infrastructure developers, as well as greater value for public sector clients," notes van den Berg.

Purpose-built homes for solar, and EV integration

In terms of innovations, the growing affordability of solar systems, and the rising emphasis on environmentally-friendly energy solutions, it's likely that there will be a strong demand for "green" homes.

"In response, next year will likely see a more pronounced shift toward integrating renewable energy systems directly into the design and construction of new homes," he states.

"Instead of owners adding solar panels and electric vehicle (EV) chargers after the fact, developers will increasingly integrate these features from the project's outset. Expect dedicated wiring conduits, pre-installed charging ports in garages, inverters hidden in utility rooms, and roof angles optimised for peak solar capture."

Additionally, as electric vehicles (EVs) enter the mainstream, forward-thinking developers will anticipate the charging needs of future residents. Integrated EV infrastructure in new builds will accelerate South Africa's EV market by removing key adoption barriers – if a buyer knows they can charge at home without expensive retrofitting, opting for an EV becomes simpler

and more cost-effective, making these homes more attractive to buyers.

Technology-driven efficiencies in construction

Under the weight of global supply chain pressures, rising material costs, and persistent inflation, the construction industry will be compelled to move beyond incremental improvements, and embrace new levels of technology-driven efficiency.

Statistics South Africa's latest construction input price index (CIPi) reveals, for example, that while total costs rose an average of just 3,4% year-on-year in October 2024, a number of essential materials and inputs have seen substantial increases in expense. Construction pipes, tubes, and fittings surged 13,9% year-on-year, bricks by 7,9%, electrical components by 11,4%, and plants and equipment by 7,7%.

"Intense competition within the industry means that companies will have to rely more heavily on advanced tools and AI to streamline processes, optimise procurement, and protect profit margins. This shift will be crucial in delivering projects faster, more affordably, and with greater reliability," explains Van den Berg.

For instance, firms can integrate digital procurement processes and logistics, automate operations with drones and machine-led fabrication, incorporate prefabricated components, and upskill teams to leverage real-time data analytics. These measures will reduce waste, accelerate delivery, enhance on-site safety, and enable continuous refinement of project strategies, helping South African developers meet intensified market demands more efficiently and cost-effectively than ever before.

"Ultimately, the general outlook for 2025 is optimistic and we expect enormous opportunities for the industry. Some risks remain, but if construction businesses and infrastructure developers remain agile and innovation-focused, we may see a new boom in the industry with enormous benefits for the country as a whole," he concludes. ●

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AI DRIVING EFFICIENCIES IN MINING

The mining industry is currently undergoing a significant transformation, spurred by the Fourth Industrial Revolution (4IR). This era of advanced connectivity, analytics, automation and manufacturing technologies is poised to revolutionise the sector at nearly every stage of its value chain. From production to processing, adopting AI and automation unlocks efficiencies and redefines operational standards.

At the production level, autonomous vehicles enhance safety while delivering greater precision, improving efficiency. AI-driven systems provide businesses with enhanced control and monitoring capabilities in the processing phase. These technologies optimise performance, reduce energy consumption, provide safer operations and improve output quality.

The South African perspective

Zamani Ngidi, Business Unit Manager for M&A and Cyber Solutions at Aon South Africa, highlights a unique challenge in the South African mining context. Mining rights are often negotiated within communities where job creation is a key part of the agreement. This dynamic can sometimes conflict with the narrative of automation. Nevertheless, the analytical capabilities of AI can significantly benefit mining operations in several ways:

- Minimised maintenance downtime: AI analytics can pre-

dict equipment failures, assess machinery conditions, and schedule maintenance to prevent disruptions.

- Optimised supply chains: AI enhances logistics and demand forecasting, streamlining supply chain management.
- Enhanced human capital management: AI aids in recruiting, onboarding and training employees). Determine whether to retain or transfer specific risks.
- Leverage technology and data to enhance risk management.

Embracing the future

"As the mining sector prepares for the next frontier of technological advancements, digital tools and sophisticated data analytics will be crucial for staying ahead of current and future risks," says Zamani. "With the pace of change accelerating, technology – if harnessed and managed correctly – can serve as a catalyst for businesses to achieve their growth ambitions." ●

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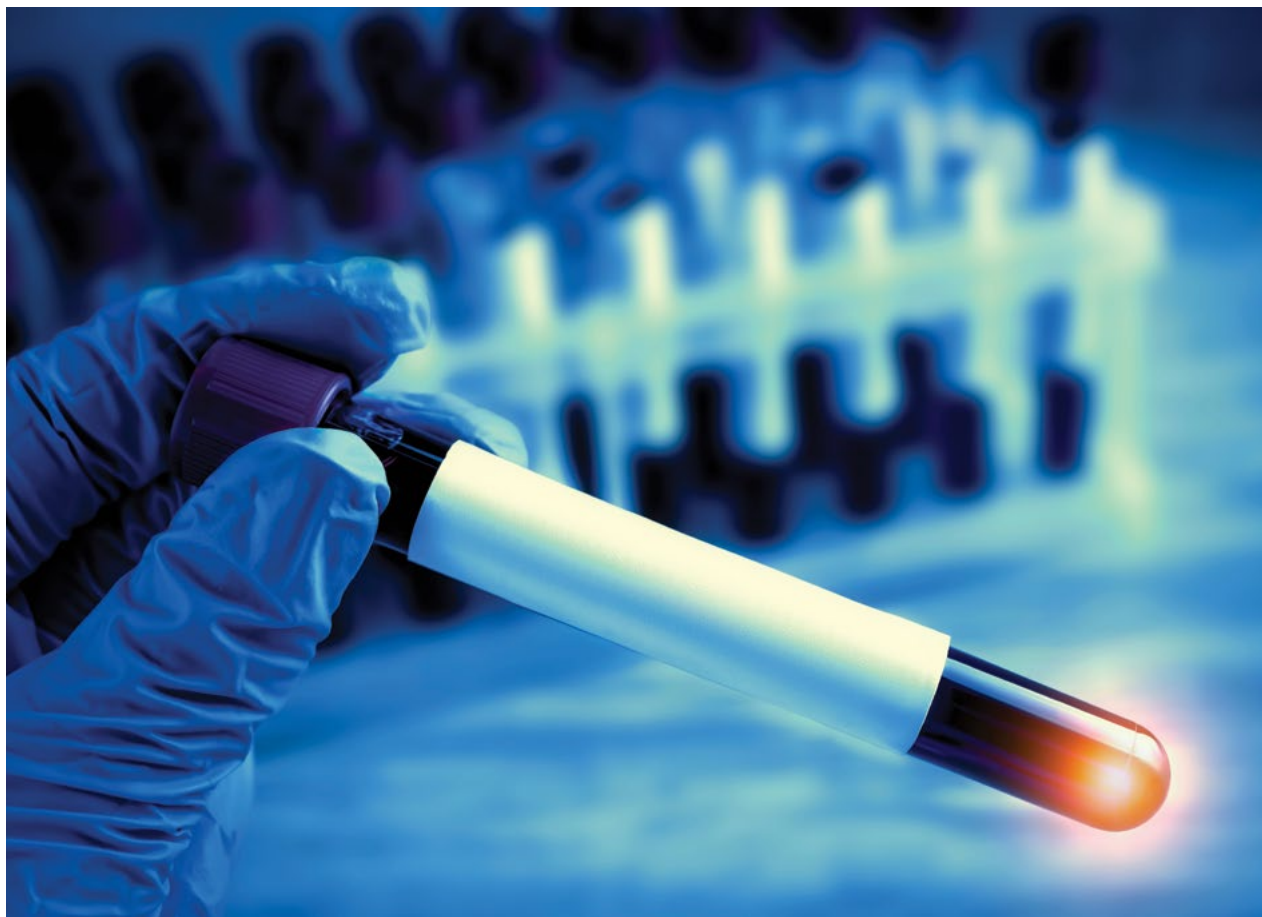
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THE ROI OF BREATHALYSER TESTING **IN THE WORKPLACE**

Alcohol abuse in the workplace poses a significant threat to safety, productivity, and overall company morale. Oftentimes, the reason companies want to start testing is because they've had an incident or noticed employees coming in potentially intoxicated. By Rhys Evans, Managing Director at ALCO-Safe



While employers may suspect there's an issue with alcohol abuse, they typically don't grasp the full extent until testing begins. In large companies, the number of positive results is often higher than expected, with repeat offenders identified – sometimes leading to a high number of dismissals. This issue is far more prevalent than many businesses realise, given the high rates of alcohol abuse among the South African population.

Implementing breathalyser testing programmes can effectively mitigate these risks, creating a safer and more efficient work environment. By identifying and addressing alcohol-related issues proactively, businesses can reduce the likelihood

of accidents, injuries, and associated legal liabilities, ultimately leading to substantial cost savings.

The high cost of alcohol-related incidents

The financial consequences of alcohol-related workplace incidents can be staggering. Accidents, injuries, and property damage not only result in direct costs but also lead to increased insurance premiums, lost productivity, and potential legal battles. With 20% to 25% of injuries in the workplace involving employees under the influence of alcohol, it's clear that this should be an area of concern for businesses, not just those in high-risk industries. By implementing breathalyser testing programmes, businesses can proactively address this issue, reducing the risk of such



Rhys Evans, Managing Director at ALCO-Safe.

incidents and the associated costs.

Quantifying the benefits in more than Rands and cents

While the financial advantages of breathalyser testing in the workplace are undeniable, the benefits extend



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far beyond mere monetary savings. By reducing accidents, enhancing productivity, and fostering a positive work environment, breathalyser testing programmes contribute to a company's overall success and well-being.

The workplace becomes safer, with reduced accidents and injuries. Regular testing helps identify employees who may be under the influence before they cause accidents, significantly reducing the risk of workplace injuries. This not only saves on medical expenses and lost wages but also fosters a safer and more secure environment for all employees.

The workplace also becomes more productive. Alcohol abuse can lead to increased absenteeism, affecting productivity and morale. By addressing alcohol-related issues, businesses can improve employee attendance and create a more focused and productive work environment. This in turn boosts morale, as a workplace free from the negative impacts of alcohol abuse is characterised by increased job satisfaction and higher productivity. Beyond the bottom line, breathalyser testing can contribute to a positive company image, as a company that prioritises employee safety and well-being projects a positive image to stakeholders, including customers, investors, and the community. Furthermore, investing in employee

safety and well-being demonstrates a company's ethical commitment to its workforce, which makes it easier to attract and retain top talent.

The importance of a fair and transparent workplace policy

From a legal standpoint, breathalyser testing is one of the most effective means to mitigate risk. Where alcohol-related incidents can result in costly legal battles, breathalyser testing programmes provide evidence of a company's commitment to safety, mitigating the risk of legal liabilities and associated costs.

The successful implementation of breathalyser testing programmes depends heavily on having a well-defined and transparent workplace policy on alcohol consumption in the workplace. This policy should clearly outline the company's expectations regarding alcohol use, the consequences of violating these expectations, and the procedures for conducting alcohol testing.

A fair and transparent policy helps to promote a culture of safety by sending a strong message to employees that the company values their safety and well-being. A well-defined policy helps to ensure that alcohol testing is conducted fairly and consistently across the organisation, while assisting in the provision of due process by outlining the procedures for conducting tests, challenging

results, and addressing any disciplinary actions.

Invest in safety today, reap the rewards tomorrow

To ensure accurate and reliable testing results, it is essential to invest in high-quality breathalyser equipment and consult with experienced providers. These experts can assist in developing effective testing policies, training employees, and ensuring compliance with relevant regulations.

While the initial investment in breathalyser equipment and related services may seem costly, the long-term benefits in terms of cost savings and improved safety can far outweigh the upfront expenses.

Implementing breathalyser testing programmes in the workplace is a strategic decision that can yield significant benefits. By reducing the risk of accidents, injuries, and legal liabilities, businesses can improve safety, enhance productivity, and ultimately achieve substantial cost savings. However, the success of these programmes depends on the development and implementation of a fair and transparent workplace policy on alcohol consumption. By investing in quality equipment, expert guidance, and a clear policy, organisations can create a safer and more productive work environment. This not only fosters a positive work culture but also protects the company's bottom line. ●

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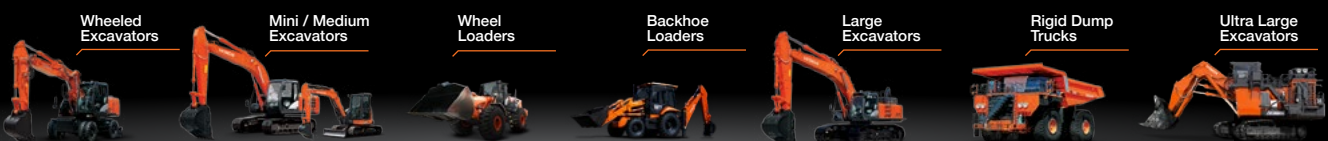
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BREAKING NEW GROUND

To further strengthen its product lead in the articulated dump truck (ADT) market, Babcock will introduce the new generation Volvo articulated haulers in Southern Africa by mid-2025. Among the first four models to arrive will be the new 45-tonne (t) A50, an entirely new class size machine that takes the proven full hydraulic suspension concept to the next level.

Having pioneered the ADT concept with the 1966 launch of the world's first articulated hauler, dubbed "Gravel Charlie", Volvo Construction Equipment (Volvo CE) is reinforcing its leading position in this market segment with the launch of its most technologically advanced haulers to date.

Making their Southern African debut first will be the updated A35, A40, A45 and the all-new A50, (estimated arrival May/June 2025) confirms David Vaughan, MD of Babcock's Equipment business. The A30 and A60 will be introduced at a later stage.

The new range – the biggest and boldest ADT launch in Volvo CE's history – has been adapted with some of the most exciting features, meeting customer needs in areas



The A50 takes the concept to new heights as the only full suspension machine of its size class on the market.

of productivity, durability, serviceability and maintainability, operator comfort, safety and efficiency, resulting in lower total cost of ownership.

Plugging the gap

While the updated models break new ground with key innovations, Vaughan is particularly excited about the launch of an entirely new model, the 45-t A50, which not only broadens the model line-up to cover more applications,

but also plugs an important gap between the existing 42-t A45 and the 55-t A60.

"Based on conversations with customers in our market, we have always been aware that there was a need for a model size that bridges the gap between the A45 and the A60. We are therefore excited to add the new A50 to our already extensive ADT line-up, thus increasing customer opportunities in this demanding market segment," says Vaughan.

The major talking point on the new model is the full hydraulic suspension concept, says Lance Mannix, GM Sales at Babcock's Equipment division. Pioneered by Volvo CE in 2007, the full suspension has proved to be a reliable system for the toughest of driving conditions. Many mining and quarrying companies worldwide have praised the unique technology for the benefits it has brought them in terms of productivity and operator comfort, all while being just



With a 45-t payload, the all-new A50 delivers 10% more productivity and 8% greater fuel efficiency when compared to the previous generation A45GFS – making it an ideal solution for high-production quarries, mines and large construction sites.





SNAPSHOT



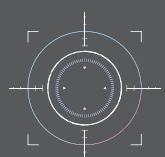
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For the A50, service costs are reduced by up to 6% over 12 000 hours of operation due to simplified servicing, longer change intervals and easy component access.



Visibility is improved thanks to redesigned cab panels and wider wiper coverage, resulting in a field of vision that also exceeds industry standards.

as durable and dependable as a traditional suspension.

"The A50 takes the concept to new heights as the only full suspension machine of its size class on the market. As a result, it offers a significant improvement in cycle times, an increase in hauler production per operator-hour and lower costs when compared to its standard suspension counterparts," says Mannix.

As part of the new generation update of Volvo articulated haulers, the A50 enjoys all the same great features and benefits. Most notably, it delivers unrivalled efficiency thanks to the new in-house-developed Volvo transmission that works in harmony with the rest of the Volvo engine to ensure maximum fuel efficiency.

With a 45-t payload, the all-new A50 delivers 10% more productivity and 8% greater fuel efficiency when compared to the previous generation A45GFS – making it an ideal solution for high-production quarries, mines and large construction sites.

In addition, it delivers unrivalled traction and stability thanks to the Volvo drive-train with Terrain Memory, while the Volvo Dynamic Drive feature, with its predictive gear



selection, offers improved comfort and fuel efficiency. The new Volvo transmission and axles also generate greater power and productivity across daily operations.

It has never been easier for operators to focus on the task at hand thanks to the interactive Volvo Co-Pilot display, while visibility is improved and safety enhanced with upgrades including a wider field of vision that exceeds industry standards.

For the A50, service costs are reduced by up to 6% over 12 000 hours of operation due to simplified servicing, longer change intervals and easy component access.

As with all Volvo articulated haulers, the A50 also benefits from a range of Smart Solutions, such as Haul Assist with On-Board Weighing. A suite of supporting digital tools can further boost uptime, reduce fuel consumption, improve site logistics and maximise productivity across the most challenging of tasks.

Full range

The six other models in the new generation range are revamped updates to the proven A25, A30, A35, A40, A45 and A60. Already regarded as the operator's machine of choice, the updated ADTs take operator comfort to a whole new level. For example, premium comfort and ease of operation are assured by the new adjustable seats, Bluetooth connectivity, USB ports and storage solutions, as well as an ergonomic gear

lever and a noise-reducing cab design.

The interactive, integrated Volvo Co-Pilot display offers easy control over essential functions such as media, camera settings, climate control, and machine status. This is combined with the dynamic instrument cluster, positioned in front of the steering wheel, which provides essential vehicle data at a glance.

Visibility is improved thanks to redesigned cab panels and wider wiper coverage, resulting in a field of vision that also exceeds industry standards. Optional front and rear cameras, and a standard entrance camera – all of which are managed via Volvo Co-Pilot – further enhance visibility.

Entering and exiting the cab is made simple and safe due to a repositioned door entrance, railings on both sides and focused lighting on both the stairs and platform.

"With the new range, customers can also expect improved productivity through faster and wider tailgate opening when dumping. The combination of a new frame, tipping joint position and body design provide a market-leading tipping clearance and material flow when dumping, minimising the need for support equipment on the dumping site. With the new A35, A40 and A45, Volvo CE has increased the wheel base to further improve tipping stability," explains Mannix.

The new ADT design places a major focus on making servicing easier and safer with all the service centres and greasing points reachable from ground level. There is also a front ladder for access to the engine bay with all filters conveniently gathered in a single handy place. Service downtime is further reduced by longer filter and oil change intervals for the transmission and an electric fuel-draining pump, leading to lower service costs.

Ahead of the local launch, Vaughan says Babcock has already stocked up all the necessary service parts, while training of sales and technical personnel is on the agenda to ensure that teams across the region are ready to sell and support the new range. To further enhance uptime, customers in southern Africa can benefit from Babcock's flexible service contracts tailored to operators' needs. ●



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South Africa's road maintenance boom demands high-performing crushing plants, backed by reliable aftermarket support.

SANDVIK AND S&R RAISE BAR IN SUPPORT OF AGGREGATE CRUSHING

With an uptick in South Africa's road maintenance programme, there is growing pressure on crushing plants to perform productively, and this means quality aftermarket support.



In these scenarios, you don't have the luxury of transporting aggregate over long distances. You need to take the plant to the closest material deposit available to the site.

For Stephen Smith, Managing Member of S&R Enterprises, quality support is the key to meeting daily customer demands while ensuring the lowest total cost of ownership. Active as a crusher specialist for more than 12 years,

Centurion-based S&R Enterprises was recently appointed as a distributor for Sandvik Rock Processing.

Smith, who has over 20 years of experience in the sector, says the agreement focuses on stationery and mobile crushing and screening equipment – focused on

the aggregate and construction segments. He argues that a significant hurdle facing South Africa's road construction projects is the distance between work sites and established quarries.

"Many of these roads are in rural areas, far from cities or established quarries," he explains. "In these scenarios, you don't have the luxury of transporting aggregate over long distances. You need to take the plant to the closest material deposit available to the site."

This makes mobile crushing units indispensable, he notes. With their ability to be deployed directly at the project location, mobile crushers eliminate the need for long haul transport of materials, saving on time and costs. At the same time, he says, contractors and operators need high levels of support in remote locations, so their equipment choice has to prioritise the capability of OEMs.

"Aftermarket services are not

just an add-on but a critical element of sustaining operational efficiency and customer satisfaction,” says Smith. “This means that if a quarry or on-site crusher needs a part today, we must deliver it today – whether we source it or have it in stock. The customer must be up and running again quickly.”

This hands-on and responsive approach is what sets his business apart, he argues, and it is suited to the distinct demands of aggregates quarrying operations. Whereas mining operations usually have larger machines and more structured maintenance planning, the aggregate-producing segment often has more urgent requirements to keep production running.

“Experience makes a big difference to the support and technical services we offer,” he says. “Our aftermarket sales team includes people with more than 10 years in this field, and among our technical staff are employees with 35 years of experience.”

At the same time, the company nurtures skills from scratch in their rebuild centre, taking on young trainees who learn from highly knowledgeable artisans. By the time an employee is sent out to serve a customer, therefore, they are well-versed in all technical aspects of the equipment.

Smith highlights proper training as being vital to operational excellence and safety. A key challenge he has experienced in this segment is a lack of adequately trained operators who are familiar with all aspects of new machinery. To address this, he emphasises on-site training during the commissioning phase of new crushing and screening equipment.

“We have found that it is most effective to spend up to two weeks with the customer, ensuring the operator is confident with the machine – and can conduct the necessary daily and weekly checks,” says Smith. “This isn’t about delivering a machine and hoping for the best. We are also working with Sandvik Rock Processing to formalise and accredit operator training programmes, which will help elevate the industry standard.”

The quality of wear parts and spare



Mobile crushing units are essential for rural projects where transporting aggregate over long distances isn’t feasible, making on-site processing the ideal solution.



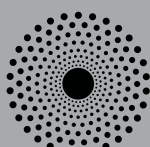
SNAPSHOT



Aftermarket services are not just an add-on but a critical element of sustaining operational efficiency and customer satisfaction.



Sandvik Rock Processing designs also help to reduce maintenance on their crushing plants.



Centurion-based S&R Enterprises was recently appointed as a distributor for Sandvik Rock Processing.



S&R Enterprise gives contractors access to appropriately sized equipment, like Sandvik’s smaller jaw crushers and scalpers.



Mobile crushing units are vital, offering on-site deployment that cuts long haul transport, saving both time and costs.

parts is also non-negotiable, so Sandvik Rock Processing has been proactive in aligning their price competitiveness in the market. He insists on maintaining the high standards associated with the Sandvik crushing and screening brand.

"There is no compromise on Sandvik quality," he says. "When we go on-site, we assist customers in selecting the right liner configurations to minimise downtime, which ultimately reduces total cost of ownership."

To enable rapid access to parts, S&R Enterprise's strategy includes a robust stockholding policy and a plan to double inventory levels within a year, ensuring that critical components are always available. This is aimed at giving customers peace of mind and optimising equipment availability, he says.

Sandvik Rock Processing designs also help to reduce maintenance on their crushing plants, he points out. Among their differentiators is the common use of steel hydraulic lines instead of rubber hoses, whose failure causes a large portion of breakdowns, he says. This innovation helps with cooling and makes the equipment more reliable. Sandvik Rock Processing also provides a refuelling kit on all its crushers, which protects equipment against the hazards of poor-quality diesel – a common risk in many rural areas.



There is no compromise on Sandvik quality," he says. "When we go on-site, we assist customers in selecting the right liner configurations to minimise downtime, which ultimately reduces total cost of ownership."

Being closer to customers is a priority for S&R enterprises, so there are plans to establish branches in key construction-focused areas across South Africa to ensure quicker response times.

"We want customers to feel like they're part of a family, not just another number in the supply chain," says Smith. "Our goal is to be with our customers regularly and whenever they need us, providing the hands-on support they deserve."

Looking ahead, he sees growing demand in the market for mobile crushing units, which have the adaptability to cater for the specific demands of smaller-scale aggregate projects.

"The second phase of South Africa's road-building programme, particularly in the Eastern Cape, will require equipment suited for 100 to 200 tons per hour

production," he explains.

By focusing on this segment, S&R Enterprise gives contractors access to appropriately sized equipment, like Sandvik's smaller jaw crushers and scalpers. These machines strike the perfect balance between portability, efficiency and scalability, making them ideal for the variable demands of road construction, he says.

"Sandvik's mobile and semi-mobile equipment allows for rapid setup and relocation," says Smith. "If a contractor is crushing at one location for three months, they can pack up and move on to the next site without significant downtime."

The Sandvik mobile crushing and screening range includes self-driven tracked units, as well as a semi-mobile wheeled offering which can be towed. ●



Thomas Chao, Managing Director at Powerbit Rocktools (left) and Nardus Bezuidenhout, Director at Torque Africa Exploration.



A TRUSTED PARTNER IN DRILLING EXCELLENCE

What sets Powerbit Rocktools apart from other suppliers? Nardus Bezuidenhout, Director at Torque Africa Exploration, explains: “Powerbit Rocktools has earned its reputation by actively listening to customers, understanding their unique challenges and consistently delivering top-notch solutions. They are more than a supplier to us. They partner with us to create the right solutions our drilling business demands.”

Powerbit Rocktools industrial drilling products – which encompass DTH hammers and bits, RC hammers and bits, tri-cone bits, top hammer bits and rods, casing systems, grinding machines and more – are technologically advanced but also surprisingly affordable.

The company's ongoing commitment to excellence and dedication to customer service have established it as a force to be reckoned with in the drilling industry. The world of drilling is rapidly evolving, and with it, the demand for robust and reliable rock drilling tools is constantly on the rise.

Powerbit Rocktools collaborates with advanced research centres and technology experts in Taiwan, China and Japan. This global presence ensures they stay ahead of technological advancements, allowing them to tailor their products to meet clients' specific needs effectively.

Powerbit's extensive product range is complemented by its focus on building long-term client partnerships. Wors Prinsloo, Director at Kibela Drilling – a leader in the drilling and blasting industry – emphasises the significance of collaboration, especially in the African sector, where drilling operations are essential for resource extraction and progress:

“In our industry, we can't afford downtime. Having partners who are

always available to help us address the unique challenges we face is critical. The Powerbit team works with us, not for us. That makes them a valued partner for our business.”

The value of economical, longlife rock drill bits, hammers and grinding machines in today's drilling environment is immeasurable. Powerbit recognises these tools' vital role in enabling clients' success and driving infrastructure projects that underpin local economies.

The Powerbit product range is a testament to their commitment to empowering progress in drilling operations. Each Powerbit product is meticulously engineered to deliver exceptional drilling capabilities and ideally equipped to serve a diverse clientele with varying requirements across different industries and working conditions.

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Experience the power of precision engineered rock drilling tools and exceptional customer support, empowering your operations to thrive in the face of modern drilling challenges. Connect with Powerbit Rocktools and embark on a journey of progress and empowerment that has been driving the Southern African mining industry for almost two decades. ●

NEW POLYURETHANE SCREENING MEDIA FACTORY TO BOOST EFFICIENCY AND PRODUCTION

Multotec consolidated its South African injection moulded polyurethane screening media factory sites into a single, larger facility worth R100-million, to enhance capacity and increase efficiency. The new factory is situated on a 7 068 m² property with 4 360 m² under roof, close to Multotec's current Forge Road main campus in Spartan, Kempton Park. It houses the tool room, production facility, offices and warehousing facilities, providing a comprehensive and efficient workspace.

Rhodes Nelson, Senior Vice President – Product Management at Multotec, expressed excitement about the anticipated improvements in efficiency and productivity. He predicts that, conservatively, the new screening media factory will achieve a 15% reduction in unnecessary activity due to a footprint that was designed for ease of material flow and improvements such as the consolidation of raw materials storage facilities.

The injection moulded polyurethane screening media factory supplies screening media products to mining operations across Southern Africa and West Africa, including Botswana, Mozambique, Namibia, Zimbabwe, as well as to international markets such as Australia, North America and South America – which covers most mining destinations around the globe.

"Multotec's investment underscores its long-term commitment and dedication to the South African local manufacturing sector. We also have manufacturing facilities in

various countries, strategically positioned in close proximity to our customers to better serve them.

"Over the past 50 years, our business has grown organically, characterised by adding machines to the factory as they were needed. However, the restrictions on available space in the factory led to a layout that did not support an efficient workflow. This new facility therefore allows us to create a sufficient baseload capacity to set ourselves up more efficiently and extend our production capacity."

Nelson explains that improved lead times are crucial to Multotec, as the production facility operates largely as a "make to order" environment. This consolidation is key to supplying customers with the shortest lead times possible.

Workflow digitisation

The addition of two new machines to its current range of PU injection moulding machines will boost production capacity by a significant 25%. The new facility is designed with a view to digitising a large part of the workflow in future. This necessitated measures such as allowing for additional space around machinery to be able to

install additional equipment.

The expansion is not only set to benefit Multotec, but also potentially the local community and economy by creating additional employment opportunities and increasing the demand for inputs.

As a make-to-order company, it is essential for Multotec to have a toolroom close to the production facility which allows for a quick response to any breakdowns. In addition, a localised cross-functional team that includes tool and diemakers enables fast response times to solve tool malfunctions and efficient support for commissioning new tools. Although integrated with the new facility, the toolroom must be enclosed to ensure a controlled environment needed for the very tight tolerances that must be maintained for tooling.

Like the production facility, the design of the toolroom was optimised for workflow efficiency. It includes a variety of specialised equipment typically found in a jobbing environment such as





Rhodes Nelson, Senior Vice President – Product Management, Multotec.



Ian Chapman, Engineering Manager, Multotec.

manual and CNC milling machines, surface grinders, as well as electrical discharge machines. Additionally, advanced scanning equipment paired with visualisation software provides accurate measurements of both new and used tooling that is difficult to measure via traditional means. This ensures that the manufacturing facility continues to produce screening media to a high level of quality.

General efficiencies

The move to the new facility will also free up space, allowing Multotec to relook its existing campus layout to increase overall efficiencies by improving workflows. "Ultimately, we want to enhance digitalisation within all our factories. This will provide a better understanding of our processes, more accurate reporting, and quicker reporting on where things are within the whole workflow across the business," says Ian Chapman, Engineering Manager at Multotec. ●



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LARGEST PILOT MODULAR AGGREGATE PLANT COMMISSIONED IN THE DRC

In a milestone project, Pilot Crushtec International has commissioned its largest ever Pilot Modular plant. Supplied to produce five aggregate sizes for an existing customer in the Democratic Republic of Congo (DRC), the plant is designed to produce 350 tonnes per hour (tph), with a peak design capacity of 440 tph to account for peaks and troughs in day-to-day production.



Having operated a Pilot Modular plant for a long time, a major aggregates producer in the DRC looked no further than Pilot Crushtec when it was time to invest in another greenfields plant to meet the rising demand for aggregates in the DRC. This comes on the back of ongoing private mine expansion projects, coupled with government infrastructure development projects aimed at closing the infrastructure gap in the country.

From the onset, says Wayne Warren, Sales Manager Africa at Pilot Crushtec, the customer was well aware of the benefits of the



To provide context, this particular plant was delivered within about four-and-a-half months of its order, while the erection, assembly and commissioning took a further three months, highlighting the short lead times for which the Pilot Modular concept is renowned.

Pilot Modular solution, ranging from lower capital and operational costs compared with bespoke plants to quick lead times and flexibility to

operational changes. Pilot Modular systems are readily available modules that can be deployed to site rapidly and be operational

▶ The 350 tonnes per hour (tph) production plant is the largest ever Pilot Modular aggregate production plant installation to date.



The Pilot Modular Feed Hopper MFH25 is used to control the feed to the cone crusher and an MPM910 magnet is used to remove tramp metal before the cone crusher.



within a short space of time.

"To provide context, this particular plant was delivered within about four-and-a-half months of its order, while the erection, assembly and commissioning took a further three months, highlighting the short lead times for which the Pilot Modular concept is renowned," says Warren.

For this plant, says Warren, Pilot Crushtec did not 'reinvent the wheel'; the company largely used standard proven off-the-shelf products from its Pilot Modular range. The primary crusher is a Metso C120 jaw crusher, which takes a maximum feed size of



This particular plant was delivered within about four-and-a-half months of its order, while the erection, assembly and commissioning took a further three months, highlighting the short lead times for which the Pilot Modular concept is renowned.



Transporting the plant to site came with its fair share of challenges, especially the border-related delays.



Making use of Metso HP cone crushers and correct reduction ratios ensures that the end product has the best possible shape without having to deploy a vertical shaft impact (VSI) crusher.



In environments where logistics can be a nightmare, the customer keeps a sizeable inventory of most critical wear and spare parts on site to avoid possible production disruptions.

700 mm. From the jaw, material goes into the TKG 16 modular scalping screen. Incorporating the TKG 16 modular scalping screen allows for maximising the efficiency of the secondary crusher's capacity by taking out fines just after the jaw crusher,

especially considering that the environment is notorious for having a lot of fine material in the feed.

Oversize material (plus 90 mm) from the TKG 16 modular scalping screen is sent directly to the secondary cone crusher, a Metso

SNAPSHOT



The recently commissioned greenfields aggregate plant for Pilot Crushtec's customer in the Democratic Republic of Congo (DRC).



The Pilot Modular Nordberg HP300 cone crusher module.

HP300, a high capacity machine known for not only for its to take large feed sizes but also its large throw which provides for a decent material shape at the secondary stage of crushing.

"Making use of Metso HP cone crushers and correct reduction ratios ensures that the end product has the best possible shape without having to deploy a vertical shaft impact (VSI) crusher," says Warren.

From the HP300, material is sent to a twin surge hopper comprising two Pilot Modular MFH25 feed hoppers. From here, material is fed onto two separate screens, the Pilot Modular Metso CVB2060-3M units, where fines are further removed. Any oversize material is recirculated to two Metso HP200 cone crushers via two MFH25 surge hoppers located on either side of the two screens. From the HP200 crushers, material is conveyed back to the two screens for final screening, where four product sizes – 0-6 mm, 6-10 mm, 10-15 mm and 15-25 mm – are stockpiled.

While both delivery and commissioning were on time, the logistical process of transporting such a large plant to the DRC was not without its challenges. "The biggest hurdle was that the plant constituted a lot of equipment – it is the biggest we have ever done. We therefore had to split the delivery into three shipments comprising between 10 to 12 trucks per shipment to free up space in our workshop," explains Warren.

In addition, transporting the plant to site came with its fair share of challenges, especially the border-related delays. Making use of two transporters with knowledge of this challenging logistical environment was helpful. "Cross-border shipments to the DRC are also not new to Pilot Crushtec. We have experienced personnel to manage this, while the customer helped with pre-clearance and all the other necessary paperwork in the DRC. Close collaboration between Pilot Crushtec, the customer and the transporters was key to smooth delivery in the face of several challenges," he says.

In such an environment where logistics can be a nightmare, the customer keeps a sizeable inventory of most critical wear and spare parts on site to avoid possible production disruptions. With most of the equipment on the new plant very similar to what is on the customer's existing plant, parts commonality increases operational flexibility and reduces procurement and logistical costs for the customer.

"This project is testimony that the Pilot Modular concept works well for the African environment where large infrastructure projects are on the go and suppliers need their crushing and screening solutions as a matter of urgency. The Pilot Modular solution is quick to deploy and set up, and it does not need a whole lot of civil works and extensive infrastructure to set up," concludes Francois Marais, Sales and Marketing Director at Pilot Crushtec. ●

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RAPID INTEREST IN WEIR MODULAR WHEELED PLANT CONCEPT

Since its official introduction last year, the Weir Modular Wheeled Plant (WMWP) has generated a lot of interest amongst customers in southern Africa. This was particularly apparent at Electra Mining Africa, where the first commercial unit on display was one of the major attractions on the company's stand.

From inception, the introduction of the WMWP concept was aimed at addressing specific customer needs in the market. Based on Weir's feedback collection, the most relevant and useful aspects of the design were always going to be mobility and ease of deployment – parameters of paramount significance to contractors who seek to easily move their plants on and between production sites.

"Given that the design of the WMWP concept addresses these specific customer needs, we have seen immediate acceptance in the marketplace. In addition to mobility and ease of deployment, the concept offers the flexibility of a mobile plant and the productivity of a static plant. From an economic point of view, customers can also enjoy the mobility of the plant without the complexity associated with additional maintenance obligations for components such as diesel engines and tracks related to mobile tracked units," says Hakan Karlsson, Director Crushing and Screening at Weir.

Weir used Electra Mining Africa to showcase its first commercial unit, the Weir Modular Cone/Screen WMWSC36-5162, a combination of a TRIO® TC36 cone crusher and a TRIO® TIO 5162 double-deck screen on a single trailer. The plant can be operated as a standalone unit or as part of an existing plant. It can also be integrated as a fully mobile solution, highlighting the versatility of Weir's wheeled modular plant offering.

Jaco Kotzé, Team Leader Comminution Design at Weir, says the first unit is a culmination of customer interfacing and learnings



The TRIO TIO 5162 double deck screen offers continuous, reliable operation in wet and dry applications.



The WMWP features a TRIO TC 36 cone crusher designed for secondary and tertiary crushing.

from the market. "Following the customer launch event we have had good customer inputs and insights which, to a great extent, informed the design of the first commercial unit. We embraced the feedback and finetuned the plant accordingly," says Kotzé, adding that the first unit will be deployed at a gold dump reprocessing and aggregate production operation in Gauteng, South Africa.

While Weir displayed a cone/screen combination at Electra Mining Africa, the company's

wheeled plant concept will soon be available in various configurations, starting from primary crushing solutions comprising a hopper, a vibrating grizzly feeder and a jaw crusher to secondary crushing and stations which consist of a vibrating screen and a cone crusher. To combine these solutions, customers can use Weir Modular Conveyors to configure a plant that is capable of producing aggregates for various end-use requirements. The tonnage range for the WMWP is from 100 to 350 tonnes per hour. ●

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MARSAY CRUSHING AND SCREENING: POWERING AFRICAN CRUSHING

For nearly 50 years, Marsay has been a trusted name in Southern Africa's quarrying and mining sectors. Now, Marsay Crushing and Screening Equipment emerges as the brand's latest evolution, delivering high-quality, purpose-built solutions tailored for the African market.



Since 1976, Marsay has transformed from a broker of used equipment into a leading supplier of new crushing and screening machinery, blending 48 years of expertise with innovative partnerships with BRICS manufacturers.

Based in South Africa, Marsay offers an extensive range of equipment - jaw crushers, cone crushers, screens, feeders, conveyors, and complete plants - designed to tackle Africa's toughest conditions. From the compact 500 x 250 Jaw Crusher (15 tons per hour) to the robust 44 x 34 model (400 tons per hour).

Marsay's machines are made with modern manufacturing technology to reduce the overall weight on the crushers with durable components ensuring reliability and minimal downtime. Cone crushers like the SH200 and Vertical Shaft Impactors (VSIs) excel in secondary and tertiary crushing, producing uniform aggregates for concrete, asphalt, and road base.



Marsay's machines are made with modern manufacturing technology to bring the overall weight down on the crushers with durable components ensuring reliability and minimal downtime

Marsay's solutions span all scales, from 1-ton-per-hour setups to plants exceeding 500 tons per hour, catering to quarrying, mining, and recycling needs. Beyond equipment, Marsay provides wear parts, expert advice, and turnkey services - site surveying, installation, and training - supported by a vast Southern African network. Every purchase includes three months' worth of OEM wear parts, minimising disruptions and boosting productivity.

Competitive pricing and quality define Marsay's ethos. By influencing design through manufacturing partnerships, the

company delivers exceptional value, engineered for African durability. "Marsay Crushing and Screening Equipment will keep you crushing your mining and aggregate goals" isn't just a promise - it's a commitment rooted in decades of trust.

From its origins as Marsay Equipment CC (formerly W Marsay & Sons), the company has evolved with the industry, focusing on stone crushing while upholding its reputation for excellence. Today, Marsay stands as a partner for quarry operators, offering machinery and support to conquer challenges and drive success. ●

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The GT205S is designed to process large volumes of abrasive, hard rock and sand efficiently.

ASTEC EQUIPMENT **REDUCES QUARRIES' COSTS** AND INCREASES PRODUCTIVITY

Leading global equipment manufacturer Astec Industries is shaping the future of quarrying with equipment that combines strength and durability with the latest technology and innovation.

Once regarded as low-tech, the quarrying industry today is embracing new technologies and pioneering methods to drive efficiency, safety and sustainability. Quarries are demanding more features, benefits and flexibility than ever from their equipment, and just tough is no longer enough, according to Philip Saunders, product sales manager for Astec Industries' Materials and Infrastructure Solutions divisions. Equipment like the Astec GT205S mobile screen, GT125 mobile jaw crusher and FT200DF track cone crusher



With a robust design and reliable support, the GT205S experiences minimal downtime. It is estimated at under 10%, which is for standard maintenance. Quick access to parts and responsive service ensure maximum operational efficiency.

fit the bill and are chosen by quarries aiming to reduce costs and increase productivity, he states.

The Astec GT205S is a powerful, adaptable screening solution designed for high-output

applications, Saunders explains. "This three-deck mobile incline screen plant offers a combination of capacity, durability and customisation options, making it a valuable asset in the aggregate processing and construction



industries. It is fitted with a 5 x 20 screen and a Caterpillar C4.4 129 HP Tier III diesel engine."

High production capacity

Saunders notes that the Astec GT205S's key benefits are its high production capacity, customisation and support, and minimal downtime. "The GT205S is designed to process large volumes of abrasive, hard rock and sand efficiently. With the ability to handle up to 600tph (or 726 metric tonnes per hour, with modifications), it is ideal for operations aiming to maximise material output.

"The Astec mobile screens team works closely with our customers, to modify equipment to meet specific production needs. Whether increasing throughput or adjusting design features, the GT205S can be tailored for optimal performance.

"With a robust design and reliable support, the GT205S experiences minimal downtime. It is estimated at under 10%, which is for standard maintenance. Quick access to parts and responsive service ensure maximum operational efficiency."

The screening plant offers ideal hydraulic angle adjustment. This feature improves screening efficiency, especially for wet or sticky materials. It efficiently screens materials up to 102 mm in size, meeting stringent specifications for road construction and other applications. The GT205S's large screen box enables the production of high volumes of material when producing straightforward products such as G7. But, with the three-deck four-product conveyor setup, there is an element of finesse available when coupled with the adjustable screen box, Saunders reveals. "This functionality allows the quarry to maximise high quality low yield products such as 5 mm and 9.5 mm surfacing stone."

The Astec GT205S is renowned for its durability in harsh conditions. Built to withstand abrasive materials, it features strong hydraulic systems and durable components, reducing maintenance needs and extending machine life.

Mobile jaw is equally effective for aggregate and recycling applications

Astec's GT125 mobile jaw crusher is another exceptional machine that is making its mark at quarries around the world, especially in the United States, where its applications include producing and recycling aggregate. Saunders says that it is equally effective in both these operations.

"The GT125's large, dynamically balanced, heavy-duty flywheels produce up to 33 percent more inertia than competitive models, leading to a reduced cost per ton over the lifetime of the machine. This crusher's large, 32 mm stroke processes more material than competitive models, increasing production and reducing operating costs. A simple manual folding head section on the discharge conveyor reduces the footprint of

the machine, reducing shipping costs."

Reduce operational expenses by up to 50%

Quarries choosing the Astec FT200DF track cone crusher can reduce their operational expenses by up to 50%, Saunders states. He explains that this is made possible by the machine's unique roller bearing design, which generates higher efficiencies. The unit also boasts a patented tramp iron relief system that protects the crusher from costly failures, he notes.

"This is achieved by minimising the impact of crusher overload shock transmitted to the components. The machine offers users an ideal combination of geometry, stroke and speed, which delivers an aggressive crushing action and increased capacity. This exceptional unit is permanently precision balanced with protected internal counterweights."

The FT200DF's other notable features include a variable-speed hydraulic drive; remote closed side setting (CSS) adjustment; interchangeable chamber configurations; field-replaceable base frame tub and V-seat liners; and a hydraulic cone brake. Its feed hopper features a level sensor and it has a 95l lube oil tank with an immersion heater.

Saunders foresees growing demand for exceptional equipment that can optimise quarrying operations – like this powerful trio from Astec Industries. "With increasing infrastructure development and road construction projects, the need for high-quality aggregates continues to grow. High performance equipment from Astec Industries will play a crucial role in meeting this demand efficiently.

"A further benefit for Astec Industries customers is the reliable support and parts availability that they can be assured of. Strong OEM and factory support are essential for maintaining uptime. The availability of parts and quick response times help keep operations running smoothly, minimising disruptions," he concludes. ●



THE NEW ERA OF PUMP WEAR TECHNOLOGY

The efficient operation of slurry pumps in the mining industry is critical and pump wear technology is playing an increasingly significant role in monitoring and maintaining pump performance.

An innovative solution that is making waves in the industry is the KSB GIW® SLYsight technology. This advanced slurry pump wear monitoring technology is changing the way pump wear is detected and managed and is leading to improved pump performance with longer equipment lifespans.

According to KSB Pumps and Valves' Market Area Manager for Mining, Jacques Pretorius, the transportation of abrasive and corrosive mixtures in mining operations is the task of slurry pumps. The nature of this duty inevitably results in wearing of sacrificial components. It is crucial for slurry pump users to manage the results of this wear in relation to maintaining optimum pump efficiency. Although traditional methods of monitoring and managing pump wear through manual inspections and scheduled maintenance are common, they come with limitations such as time and resource expenditure.

"Additionally, such approaches are reactive, meaning wear is often only identified after it has

impacted pump efficiency leading to higher maintenance costs and potential downtime. Therefore, there is a pressing need for a more advanced solutions that can offer precise and timely insights into the wear status of slurry pumps, enabling a more proactive approach to maintenance.

"KSB GIW® SLYsight utilises custom sensors, in strategic locations, to measure the actual wear rate of a slurry pump's parts including the internal clearance between the suction liner and the impeller – also known as the "nose gap." The data collected by the sensors as the pump runs is shared through periodic reports.

"This enhanced monitoring system delivers data during nose gap adjustments that not only contributes to the pump's maximum wear life but also enables operators to make an efficient and safe adjustment while the pump is operating," says Jacques.

He adds that integrating KSB GIW® SLYsight technology can prevent unforeseen shutdowns and streamline operations. At the same time, the technology helps

avoid premature replacement of sacrificial components BEFORE they reach their maximum service life. By implementing this system, slurry pump maintenance planning becomes more straightforward, eliminating uncertainty. The greatest advantage is its ability to supply maintenance teams with data that was once inaccessible. This technology enhances the understanding and management of pumping equipment wear by providing visual data reports and monitoring capabilities.

By comparing KSB GIW® SLYsight technology to traditional wear monitoring practices it becomes clear that the field of pump maintenance is shifting. The limitations of periodic inspections and human intervention including subjective interpretation and variations in precision are intrinsic to traditional methodologies. Although these approaches served their purpose, they often lead to strategies that only address wear once it has already impacted pump performance.

KSB GIW® SLYsight by comparison employs real-time monitoring of wear and introduces an objective lens that enhances accuracy and eliminates guesswork. This technology enables much more informed decision-making that can pre-emptively counter potential wear and tear issues before they escalate. By freeing up resources and allocating time and manpower more efficiently, the new system is clear improvement over traditional manual inspections. ●

SELECTING THE PERFECT

DEWATERING PUMP IS ESSENTIAL

Selecting the right pump for the right application is critical for effective water management in quarries and open pit mines. Dredging and pump specialist, IPR (Integrated Pump Rental), advises that the selection process consider a number of key factors, chief among them brand reputation, supplier's expertise, site parameters and the customer's financial situation.



For both productivity and cost efficiency reasons, water management should be a priority for every quarry or surface mine.

While it is true that the selection of a dewatering pump for a mine or quarry largely hinges on specific site or application requirements, Steve du Toit, Sales Manager at IPR, believes that the supplier's expertise should be a principal factor.

"Each of our installations starts with a detailed assessment of site-specific dewatering requirements. Through that process, IPR's technical experts get a clear understanding of the unique conditions of the mine, such as water volume, pit dimensions and site-specific challenges. After this, the IPR team is able to recommend the most appropriate equipment and strategies for dewatering, ensuring optimal performance and cost efficiency for



Dealing with a supplier that can offer a wide range of choices to suit the operation's needs is important.

the customer," says Du Toit.

According to Lee Vine MD of IPR, site-specific conditions, such as volume of water to be pumped and the rate at which it accumulates, will inform parameters such as

head (the height at which a pump can raise the fluid up) and flow (the amount of water the pump can move at a given time) which, in turn, determine the size and type of pump or pumps required.

Dealing with a supplier that can offer a wide range of choices means operations can get all their dewatering pump needs from one place. For example, IPR offers both diesel-driven and submersible dewatering pumps. Designed to be fully submerged in water during operation, submersible pumps are ideal for operations where continuous dewatering is required. IPR's self-priming diesel driven pump sets are suitable for dewatering applications where power is not readily available.

"The next consideration should be the capital situation for the customer. The financial position of the mine or quarry determines whether to buy or to rent a dewatering pump solution. If capital outlay is an issue, rental will be ideal because it eliminates the need for a substantial upfront capital expenditure, freeing up the much needed budget for other pressing needs," says Vine.

In addition, says Vine, rental costs can be classified as operational expenses and this is especially important where dewatering is a critical necessity, yet there is no capex available. In a scenario where the project is long term and capital is available, outright purchase makes sense.

In conclusion, says Du Toit, when choosing vitally important assets such as dewatering pumps it is also important to consider the reputation of the brand and the aftermarket support behind it. IPR is part of the Specialty Rental division within the Power Technique Business Area of Atlas Copco and supplies the premium Atlas Copco product, which is known for its reliability, good warranty terms and, more importantly, parts availability from IPR. The company is also the official distributor for Toyo heavy-duty slurry pumps and supplies the locally manufactured SlurrySucker dredging solution. ●



JOHN DEERE INTRODUCES **ECO-CONSCIOUS** **944 X-TIER WHEEL LOADER TO AFRICA**

John Deere Africa Middle East is proud to announce the launch of the 944 X-Tier Wheel Loader to the African continent. A machine that exemplifies our commitment to innovation, efficiency, and environmental stewardship. Designed to meet the rigorous demands of our customers, the 944 X-Tier offers exceptional features and benefits that enhance productivity while minimising environmental impact.

Innovative e-drive system

At the heart of the 944 X-Tier is its industry-exclusive E-Drive system, which combines a John Deere 13.5L engine with advanced electric drive components. This hybrid-electric drivetrain not only delivers exceptional power but also enhances fuel efficiency. Griffiths Makgate, C&F Sales Manager for Africa and the Middle East, explains that E-Drive system allows the 944 X-Tier to burn 13 to 33% less fuel compared to conventional drive loaders in typical applications, significantly reducing operational costs and environmental impact.

Enhanced productivity and cost savings

The 944 X-Tier is equipped with exclusive features



The E-Drive system not only improves fuel efficiency but also reduces CO₂ emissions by up to 31 kg per hour compared to traditional drive machines. Over 30 000 hours, this equates to approximately 930 000 kg less CO₂ emitted, underscoring our commitment to sustainable solutions

designed to maximise productivity and reduce operating costs. Makgate highlights, the Traction Control system automatically limits torque to any wheel when slippage occurs, eliminating runaway wheel spin and increasing tyre life. Additionally, the Coast Control feature allows operators to adjust the machine's deceleration aggressiveness, extending service brake life.

Built for longevity

Understanding the importance of durability, the 944 X-Tier is engineered



SNAPSHOT



At the heart of the 944 X-Tier is its industry-exclusive E-Drive system, which combines a John Deere 13.5L engine with advanced electric drive components.



The 944 X-Tier is equipped with exclusive features designed to maximise productivity and reduce operating costs.



Since the 944 X-Tier doesn't contain major components like axles and a transmission, those components will not need to be rebuilt or replaced like on a conventional-drive loader.



The 944 X-Tier design reflects John Deere's dedication to environmental responsibility.

to last multiple lifecycles. Since the 944 X-Tier doesn't contain major components like axles and a transmission, those components will not need to be rebuilt or replaced like on a conventional-drive loader. A mid-life event for this loader within the 18 000 to 20 000-hour range costs approximately 50 to 60% less than rebuilding a traditional-drive machine.

Commitment to sustainability

The 944 X-Tier design reflects John Deere's dedication to environmental responsibility. The E-Drive system not only improves fuel efficiency but also reduces CO₂ emissions by up to 31 kg per hour compared to traditional drive machines. Over 30 000 hours, this equates to approximately 930 000 kg less CO₂ emitted, underscoring our commitment to sustainable solutions

Tier 4 final engine advantages

Equipped with a Final Tier 4 engine, the 944 X-Tier meets stringent EPA emissions standards, achieving a - 80% reduction of nitrogen oxides (NO_x) compared to other tiers. These reductions are achieved through advanced technologies such as selective catalytic reduction (SCR) and diesel particulate filters (DPF), resulting in cleaner exhaust and a significant decrease in pollutants that contribute to smog and respiratory issues.

Industry-leading warranty

The electric components on the 944 X-Tier's electric drive are backed by an industry-leading 8-year, 20 000-hour warranty, providing peace of mind when investing in this machine.

Renico Lombard, C&F Customer Product Support Manager for AME and SE Asia, emphasises, this extensive warranty reflects the trust we have in the 944 X-Tier advanced technology and our dedication to providing unparalleled support to our customers. It's a testament to the machine's quality and our commitment to ensuring its long-term performance in demanding environments. ●



FUEL EFFICIENCY IS CRITICAL IN EARTHMOVING EQUIPMENT

According to the Develon SA team, the cost of fuel is one of the largest operational expenses associated with earthmoving equipment. For this reason, fuel efficiency is a critical consideration in the selection, operation and management of earthmoving equipment.

As industries – such as construction, mining and agriculture – face growing pressure to reduce costs, improve sustainability and meet stringent regulatory requirements, the focus on optimising fuel usage has become increasingly important,” explains Johann Viljoen, National Sales Manager at Develon South Africa. “Earthmoving equipment contributes to global carbon emissions, primarily through the combustion of diesel fuel. Enhancing fuel efficiency reduces the volume of fuel consumed and, consequently, the amount of carbon dioxide and other pollutants released into the atmosphere.

“We believe equipment owners who prioritise fuel efficiency achieve substantial cost savings over the lifecycle of their equipment, particularly in large-scale operations, where marginal gains in efficiency translate into significant financial benefits. Even greater cost savings are achieved with the introduction of a proper maintenance and operating training programme.

“We are seeing a trend where equipment manufacturers and equipment owners are implementing strategies to enhance fuel efficiency, recognising its significant impact on operational efficiencies, costs

and environmental performance.

“Our customers rely on easy access to quality branded machines that not only meet specific performance and safety requirements, but which also adhere to the need for greater fuel efficiency, extended service life and minimal maintenance requirements.

“The ongoing launch of new robust Develon machines into the local market reflects Develon’s commitment to ensuring the Southern African market keeps abreast of the latest equipment and advanced global trends for fuel economy in materials handling and earthmoving.

“Our diverse range of Develon equipment—including compact excavators for tight spaces, robust excavators, and wheel loaders for heavy-duty tasks—provides cost-efficient solutions for various applications in many industries.

“What’s also critical for our customers is the support of technical services, quality replacement parts and a dependable repair and maintenance facility.”

Viljoen highlights that all Develon machines are designed with advanced features tailored to the tough conditions of Africa’s construction and mining sectors. Each model is engineered to ensure high performance, fuel efficiency, greater safety and minimal



maintenance, allowing users to maximise output while minimising costs.

Develon's technological advancements for fuel economy comprise the latest engine designs and telematics solutions that also optimise performance. Engine improvements, including high-pressure fuel injection and turbocharging, maximise the energy extracted from fuel, further improving efficiency.

Telematics systems are another valuable tool for enhancing fuel efficiency. These systems enable real-time monitoring of equipment performance, providing operators and equipment owners with critical data-driven information regarding fuel consumption patterns, engine load and operational inefficiencies. This data enables equipment owners to implement targeted measures to improve efficiency - including training operators on best practices, optimising job site layouts and scheduling preventive maintenance to avoid mechanical issues that increase fuel usage.

Proper operator training ensures that equipment is correctly used to minimise unnecessary fuel consumption. For example, excessive idling should be avoided and abrupt starts and stops must be reduced, while

maintaining consistent engine loads. Additionally, careful planning and execution of tasks, including efficient route mapping and load optimisation, contribute to more effective fuel use.

Develon specialists note that maintenance practices are another critical factor in achieving optimal fuel efficiency. Regular servicing of earthmoving equipment - including timely oil changes, air filter replacements and tyre pressure checks - ensures that machines operate at peak efficiency. Poor maintenance can result in increased fuel consumption, due to factors like clogged filters, worn components, or improper engine tuning.

In a nutshell, fuel efficiency in earthmoving equipment is a cornerstone of modern operational and environmental strategies. By adopting advanced technologies, implementing effective training and maintenance programmes and optimising operational practices, operators can achieve significant cost savings, extend the service life of machine, reduce their environmental impact and enhance overall performance. ●

Innovation that Saves

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Transforming Schauenburg Systems into a Data-driven Technology Enterprise



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BOOYCO ELECTRONICS' FIELD SERVICE REGIME

KEY TO EFFECTIVE PDS/CPS OPERATION

While their primary objective is to ensure the safety of people, Proximity Detection Systems (PDS) and Collision Prevention System (CPS) installations also have a direct bearing on other critical parameters such as equipment availability and productivity. Through its field support service technicians, Booyco Electronics ensures the intended benefits and objectives of implementing the technology are realised.

PDS/CPS solutions are critical safety systems in both surface and underground mining environments, particularly due to the significant risk posed by the operation of trackless mobile machinery (TMM) deployed to work in these environments. To ensure correct and reliable functionality of these systems, Anton Lourens, CEO at Booyco Electronics, stresses the need for a regular and robust maintenance regime, customised to specific customer needs.

"Given that we work with safety systems, field support service is a critical arm of our business to ensure that all machines fitted with PDS/CPS solutions comply with our Section 21 responsibilities, as specified by the Mine Health Safety Council," he explains.

The Booyco Electronics Field Services team is responsible for interfacing with customers, starting from project execution (installation, testing and commissioning of new systems) through to complete lifecycle management of the product. Services include scheduled and unscheduled maintenance, breakdown and repair services, auditing and provision of spare parts as well as upgrades to enhance product capabilities or extension services to lengthen product lifecycle.

"We have more than 200 technicians across South Africa, supporting both Service Level Agreements (SLA) and non-SLA customers. This is complemented by dedicated technical support staff for each area to assist with more advanced tasks," explains Lourens.

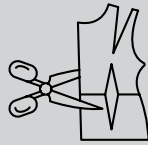
Booyco Electronics offers a wide variety of services that can be tailored to individual customer



SNAPSHOT



PDS/CPS solutions are critical safety systems in both surface and underground mining environments, particularly due to the significant risk posed by the operation of trackless mobile machinery (TMM) deployed to work in these environments.



Booyco Electronics offers a wide variety of services that can be tailored to individual customer requirements, considering aspects such as fleet size, system type and maintenance requirements as well as monitoring and data requirements.



Given the constant continuous improvements and new advancements in PDS technology, Booyco Electronics continuously adapts its field support services to keep up with the pace of innovation.



Booyco Electronics places a major focus on increasing its value proposition by using existing data via the Booyco Electronics Asset Management System (BEAMS) interface to improve safety and to assist customers increase productivity.

requirements, considering aspects such as fleet size, system type and maintenance requirements as well as monitoring and data requirements, amongst others.

"Our maintenance schedules are adapted based on fleet size, system type and level of protection implemented (Level 7, 8 or 9) and typically include a minimum of one full system functionality test per vehicle per month," he says. "For each customer, we have a defined scope of work in accordance with the SLA in place. For non-SLA customers, we generally have a different arrangement as may be required."

For SLA customers, response time is generally less than two hours, while for non-SLA customers this depends on the location and availability of technicians within the area. Understanding the extreme importance of maintaining uptime and production on TMMs, Booyco Electronics ensures its systems have minimal impact on production as a result of its strong ability in servicing customers on a breakdown basis.

This is facilitated by a branch

network that encompasses all major mining destinations, namely eMalahleni, Kuruman, Lydenburg, Richards Bay, Rustenburg, Steelpoort and Welkom, to ensure timely response to breakdowns. The footprint is also constantly reviewed to accommodate new customer requirements.

Given the constant continuous improvements and new advancements in PDS technology, Booyco Electronics continuously adapts its field support services to keep up with the pace of innovation. "We constantly advise our customers on the latest PDS/CPS improvements and advancements available on the market to ensure the best fit-for-purpose solutions," says Lourens.

"We also continually find ways of improving efficiency in our service delivery through the use of technology to manage our operations. Examples include mobile applications for time and travel management, digital certificates of compliance (COC) and service support applications as well as digital customer satisfaction surveys which are currently being

developed," he adds.

In addition, Booyco Electronics places a major focus on increasing its value proposition by using existing data via the Booyco Electronics Asset Management System (BEAMS) interface to not only improve safety, but also to assist customers increase productivity by, for example, removing bottlenecks in production and optimising traffic management.

A case in point is a major mining house which recently embarked on a 'vehicle risk identification' project spanning its global operations. The company contacted Booyco Electronics for assistance with data to help understand its operational risk (vehicle-to-vehicle and vehicle-to-people interactions) at one of its South African mines where the Booyco PDS has been in use for a number of years.

"Although the mine did not purchase the BEAMS software suite, we were able to access the data and provide the mining house's global team with valuable input to help them understand the operational risk and to identify 'hotspots' for mitigation," concludes Lourens. ●



AFGRI EQUIPMENT **UNVEILS** **STATE-OF-THE-ART** GAUTENG BRANCH

Gauteng's construction, mining, and agriculture industries have just gained a powerful new ally with the grand opening of AFGRI Equipment's latest branch in the province.

This state-of-the-art facility marks a significant milestone in AFGRI Equipment's journey, reinforcing its commitment to delivering top-tier equipment, unparalleled service, and innovative solutions to its customers. As the 24th branch in AFGRI Equipment's extensive network across South Africa, the Gauteng facility is poised to become a hub of excellence for the construction, mining, agriculture, and golf and turf industries.

Strategically located to serve as a central distribution point, the new branch is perfectly positioned to meet the growing demands of Gauteng's thriving industrial sectors. Its proximity to key supplier distribution facilities ensures rapid parts availability. At the same time, its logistical advantages enable efficient shipping and delivery of parts and services not only within South Africa but also to neighbouring countries on the





African continent. This strategic positioning underscores AFGRI Equipment's vision of supporting regional growth and development by keeping critical industries operational and productive.

A multi-franchise powerhouse

What sets the Gauteng branch apart is its multi-franchise dealership model, offering customers access to some of the world's most renowned brands. From John Deere's robust construction and agriculture machinery to Wacker Neuson's innovative compact equipment and ClubCar's premium golf and turf vehicles, the branch is a one-stop shop for industry-leading solutions. This diverse offering ensures that AFGRI Equipment can cater to a wide range of customer needs, whether it's a mining operation requiring heavy-duty machinery or a golf course in need of precision turf maintenance equipment.

Patrick Roux, Managing Director of AFGRI Equipment, expressed his enthusiasm for the new branch, stating, "We look forward to growing the industries we operate in by supplying the best quality products available, with after-sales service that is dedicated to keeping machines running with the best team in the business." This customer-centric

approach is at the heart of AFGRI Equipment's philosophy, ensuring that clients not only receive the best equipment but also benefit from reliable support to maximise uptime and productivity.

A commitment to excellence

The Gauteng branch is more than just a dealership; it is a testament to AFGRI Equipment's investment in the future of South Africa's industrial sectors. The facility boasts cutting-edge technology and infrastructure designed to enhance the customer experience. From spacious showrooms showcasing the latest equipment to fully equipped service centres staffed by highly trained technicians, every aspect of the branch has been meticulously planned to deliver excellence.

For the construction and mining industries, where downtime can be costly, the branch's rapid parts distribution capability is a game-changer. By leveraging its strategic location and strong supplier relationships, AFGRI Equipment ensures that customers have access to the parts they need when they need them. This commitment to efficiency and reliability is further reinforced by the branch's ability to extend its services beyond South Africa's borders, supporting regional

projects and contributing to the growth of the African continent.

A milestone worth celebrating

The opening of the Gauteng branch has generated palpable excitement among AFGRI Equipment's staff, who see it as a symbol of the company's growth and ambition. For customers, it represents a new era of convenience, quality, and support. As industries across Gauteng and beyond continue to evolve, AFGRI Equipment is well-positioned to be a trusted partner, driving progress and innovation every step of the way.

In a region known for its dynamic industrial landscape, the arrival of AFGRI Equipment's Gauteng branch is a welcome addition. It's not just a new facility; it's a promise to deliver the best in equipment, service, and support, ensuring that the construction, mining, agriculture, and golf and turf industries can thrive in the years to come.

With this latest expansion, AFGRI Equipment has once again demonstrated its dedication to empowering industries and shaping the future of South Africa's economy. The Gauteng branch is more than a milestone - it's a beacon of progress, innovation, and excellence. ●

BULL GAINS TRACTION

Just over a year after assuming the exclusive dealership of BULL skid steers and backhoe loaders, Babcock reports that the range has gained significant traction in a competitive South African market. The quick growth is a culmination of concerted efforts by both the dealer and the principal to offer a rugged product that is backed by a solid aftermarket regime.



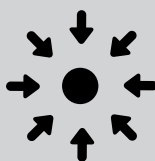
Despite the competitive nature of the market, with over 24 suppliers contending for market share, backhoe and skid steer loaders remain the 'picks and shovels' of the yellow metal equipment market in Southern Africa. To provide context, available industry figures show that the backhoe loader market ranges between 1 600 and 1 700 units per annum, with skid steer loaders in the region of 300–350 units per year, based on CONMESA figures for the past 12 months.

Having taken over the exclusive distributorship of BULL backhoe loaders and skid steers in July 2023, Babcock has already sold more than 100 backhoe loaders, propelling the company to the top five bracket in a cutthroat marketplace. Mark Senyard, Product Manager – BULL at Babcock, credits the quick growth to a combination of a good product that has proven its mettle and the commitment by both Babcock and BULL to create a

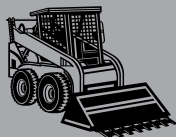
SNAPSHOT



Having taken over the exclusive distributorship of the BULL backhoe loaders and skid steers in July 2023, Babcock has already sold more than 100 backhoe loaders.



BULL regards South Africa as an important growth market and has committed to working closely with Babcock.



Currently, Babcock offers a single BULL skid steer model, the AV490, in two variants – a typical canopy version and one with a fully enclosed cab and air conditioner.



Due to the heavy nature of the machine, it is able to carry slightly larger buckets. The majority of backhoe loaders in the market come with a front bucket size of 1,1 m³, while the BULL machine comes with a 1,26 m³ bucket.



conducive environment for market share growth.

Babcock support

Under Babcock, BULL customers have experienced new levels of aftermarket support. Working closely with its customers, Babcock has a proud history of sales and servicing of construction equipment that spans more than six decades. Over the years, the company has built its business on the back of its aftermarket offering, including parts as well as service and maintenance contracts.

"The BULL brand has proven its capabilities over many years in the local market since its debut in 2017. Under the stewardship of Babcock, it has gained even more traction, leveraging Babcock's widespread support infrastructure across the region, as well as an existing strong customer base in new markets such as quarrying and mining. We are also probing agriculture to further grow our market share," says Senyard.

OEM support

BULL regards South Africa as an important growth market and has

committed to working closely with Babcock. To put the matter into context, the Indian-headquartered original equipment manufacturer (OEM) has appointed an executive with a dedicated focus on the South African market.

In his capacity as Senior Manager – Sales and Marketing International Business at BULL, Nitin Bojappa is responsible for South African and Brazilian markets. This appointment, says Senyard, speaks volumes about BULL's commitment to the welfare of its South African dealer and customers.

Growth appetite

From the very first meeting between BULL and Babcock executives, Senyard says it was clear that the principles and ethos of the two businesses were very much aligned. Both Babcock and BULL also share the same growth appetite. As a norm, Babcock has always distributed products at the top end of their market segment, which is one of the reasons BULL was a good fit for the company.

With a long background in the manufacture of tractor attachments, BULL first ventured into the backhoe loader market back

in November 2011 with the launch of what is said to be the world's first 60-horsepower hydrodynamic backhoe loader.

Owned by the longstanding AV Group, BULL currently has the capacity to manufacture 6 000 backhoe loaders per annum, catering for more than 62 countries in the world. To date, BULL is the youngest and fastest growing backhoe loader manufacturer in the global market.

The range

Currently, Babcock offers a single BULL skid steer model, the AV490, in two variants – a typical canopy version and one with a fully enclosed cab and air conditioner. In 2025, the company will start offering a high-flow pump version, which gives the machine an extra edge when working with high-flow attachments such as sweepers and augers.

In addition, Babcock offers three backhoe loader models – the HD76, the HD 96 and the larger HD100 – in five different variants. The HD76 comes in a General Purpose (GP) configuration only. The HD96 and HD100, confirms Senyard, are offered in two different versions – GP and Multi-Purpose (MP). In an MP configuration, the machine comes with a clamshell bucket, fold-over forks and an extended dipper.

"One of the competitive edges of the BULL range is the world-class componentry. For example, the HD76 and HD96 are powered by a Kiloskar engine, while the HD100 is driven by a Perkins engine. These are proven motors that most of our local customers are familiar with in South Africa.

Another major growth factor in the local market is the ruggedness of the machine. Due to a strong frame, the BULL backhoe loader is probably the heaviest in its size class.

"Owing to the heavy nature of the machine, it is able to carry slightly larger buckets. The majority of backhoe loaders in the market come with a front bucket size of 1,1 m³, while the BULL machine comes with a 1,26 m³ bucket," concludes Senyard. ●



LOADRITE'S RANGE OF **SMART SCALES FOR MINING & QUARRYING**

In an era where efficiency and precision are paramount, Loadrite has emerged as a transformative force in the mining and quarrying sectors. With its advanced smart scales designed for wheel loaders and excavators, alongside cutting-edge belt scales, Loadrite is paving the way for a new standard of data integration and operational excellence. Looking ahead to 2025, the implications of integrating these technologies through cloud connectivity are profound, promising to redefine how businesses operate.

Understanding Loadrite's Smart Scales

Loadrite's range of smart scales provides real-time data that enhances productivity and reduces operational costs. These systems are specifically engineered for wheel loaders, excavators and belt scales, ensuring that material handling is efficient and accurate.

For over 40 years Loadrite products have been helping customers around the world to increase profitability, maximise productivity, improve operational efficiency and get control of their inventory

The importance of accurate weighing systems

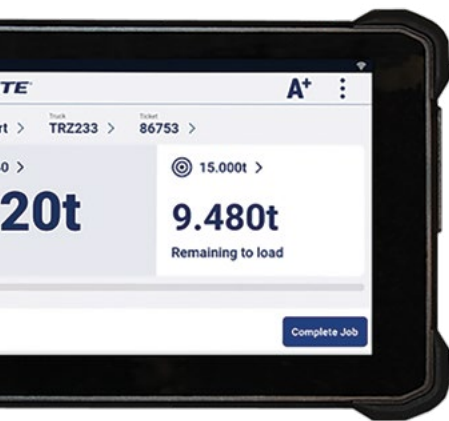
In the mining and quarrying industries, accurate weight measurement plays a crucial role in ensuring efficiency, reducing waste, and maintaining operational safety. Whether it's a wheel loader, excavator, or conveyor belt, understanding the precise weight of materials being moved, loaded, or transported is vital for both operational and financial performance.

Traditionally, businesses in these sectors have

relied on manual weighing methods or less sophisticated technologies that are prone to error and inefficiency. However, as machinery becomes more sophisticated, so do the weighing systems integrated into these machines. Loadrite has developed an innovative range of smart scales designed specifically for mining and quarrying, offering businesses a higher level of precision and control over their operations.

Smart Scales for wheel loaders: For wheel loaders, Loadrite's onboard scales provide immediate feedback on load weight, allowing operators to optimise each bucket load. This means fewer trips to the dump site, reduced wear on machinery, and decreased fuel consumption. A quarry using Loadrite's system will increase productivity, translating to significant time and cost savings.

Smart scales for excavators: Excavators equipped with Loadrite scales are capable of weighing materials



during excavation, ensuring that the right amount is being moved. This feature is particularly beneficial in applications like site preparation or road construction, where precision is crucial. One notable application is the use of Loadrite systems in large infrastructure projects, where accuracy in material handling directly impacts project timelines and budgets.

Smart Scales for Belt Scales:

Loadrite's belt scales are designed to monitor the flow of materials on conveyor systems. These scales can provide continuous weight measurement, allowing for real-time adjustments to loading and processing operations. For instance, a mining operation utilising Loadrite's belt scales could ensure that material flow rates align perfectly with processing capacity, minimising downtime and maximising throughput.

Unlike traditional manual methods of measuring materials in batches, belt scales offer continuous and dynamic weighing. This allows businesses to track the amount of material being transported in real time, which can then be used for load management, inventory control, and reporting purposes. Continuous monitoring also ensures that no materials are wasted, helping to reduce operational costs.

Overloading on conveyor belts can lead to equipment breakdowns, reduced system efficiency, and increased maintenance costs. With Loadrite belt scales in place, businesses can monitor and control material flow to ensure that conveyors are never overloaded.

Sub header: The power of integrated data cloud connection with InsightHQ

As businesses move toward more technologically advanced operations, integrating Loadrite's smart scales with a data cloud connection offers unprecedented advantages. In modern times, this integration has a profound impact on operational efficiency and decision-making processes.

Loadrite InsightHQ centralises operational productivity data onto easily interpretable dashboards, enabling the monitoring of alerts and review of shift playbacks. It consolidates all critical operational information in a single location, facilitating real-time tracking of progress towards goals and enabling proactive decision-making.

Without such systems, production data for aggregates can be delayed, inaccurate, or necessitate tedious manual collection. This poses challenges for quarry, fleet, and plant managers who need timely and reliable information to make decisions that impact production positively during their shifts.

Real-Time Weigh Monitoring: With cloud connectivity to Loadrite's InsightHQ, data collected from Loadrite's scales can be accessed in real time from any location and smart device such as PC, tablet or smart phone. This means managers can monitor operations remotely, providing instant visibility into load weights, operational efficiency, and machine performance. For example, a site manager overseeing multiple locations can use a centralised dashboard to track productivity metrics across different quarries, minimise the occurrence of overloading and optimising workflow, facilitating more informed decision-making for productivity potential.

Load management: One of the key benefits of Loadrite's smart scales is the ability to manage the load distribution effectively. Whether it's a wheel loader or an excavator, operators can be sure that materials are loaded correctly, preventing issues such as overloading, which can lead to equipment damage or inefficiencies in transportation. This also helps reduce wear and tear on trucks and conveyors, extending their operational lifespan.

Data analytics for predictive maintenance: Cloud-connected systems, like InsightHQ, allow for the accumulation

of vast amounts of operational data. By leveraging advanced analytics, businesses can identify patterns and predict when equipment might require maintenance. For instance, if data indicates that a specific wheel loader consistently operates at maximum capacity, it may signal the need for maintenance to prevent breakdowns, reducing unplanned downtime.

Enhanced reporting and compliance: With all data centralised in the cloud, businesses can generate detailed reports effortlessly. This capability is crucial for compliance purposes in regulated industries, where maintaining accurate records of materials handled is essential. A mining operation, for instance, could easily produce reports for regulatory bodies, demonstrating compliance with environmental and safety standards.

The future of mining and quarrying with Loadrite and InsightHQ Cloud Technology

Looking ahead, the integration of Loadrite smart scales and belt scales with cloud-based data systems such as InsightHQ, is undoubtedly reshaping the landscape of the mining and quarrying industries. By integrating these technologies with cloud connectivity, businesses are not only enhancing operational efficiency but also positioning themselves to thrive in a rapidly evolving digital landscape.

By harnessing the power of real-time data, predictive analytics, and remote monitoring, businesses can significantly improve efficiency, reduce costs, and increase profitability.

Loadrite's smart scales for wheel loaders, excavators, and belt scales offer precise and real-time weighing capabilities that can dramatically improve operational efficiency in mining and quarrying. The addition of integrated cloud connectivity further amplifies the value of these systems by enabling remote monitoring, predictive maintenance, and seamless data sharing.

As the mining and quarrying sectors continue to embrace digital transformation, Loadrite's weighing systems, combined with the power of integrated cloud solutions, will provide businesses with a competitive edge, allowing them to stay ahead of the curve in an increasingly data-driven world and a rapidly evolving industry. ●



HITACHI ZW310-5A WHEEL LOADER: **POWER, EFFICIENCY, AND DURABILITY IN HEAVY-DUTY OPERATIONS**

When it comes to tackling the most demanding construction and mining projects, the Hitachi ZW310-5A Wheel Loader stands as the epitome of reliability, efficiency, and innovation. Designed for uncompromising performance, this machine delivers maximum uptime, superior fuel efficiency, and operator comfort, ensuring that every load is handled with precision and power.

Unmatched performance in every operation

The ZW310-5A Wheel Loader is engineered to optimise efficiency without sacrificing power. Whether loading trucks, moving earth, or handling heavy materials, this machine is built to handle extreme workloads. Featuring an advanced power mode, operators can unleash additional force when needed, making it ideal for sites that demand strong traction and acceleration.

Equipped with a high-output engine and intelligent hydraulic systems, the ZW310-5A ensures fast cycle times, reduced fuel consumption, and seamless operation. The machine's load-sensing

hydraulics adjust according to workload requirements, ensuring smooth and efficient performance in all conditions.

Superior operator comfort and safety

Designed with the operator in mind, the ZW310-5A boasts a spacious panoramic cab that enhances visibility and minimises blind spots. The pillar-less bonded windows provide near all-around visibility, reducing operator fatigue and increasing on-site safety.

Key comfort features:

Bi-Level Auto Air Conditioner: This system ensures



SNAPSHOT



The ZW310-5A Wheel Loader is engineered to optimise efficiency without sacrificing power.



Designed with the operator in mind, the ZW310-5A boasts a spacious panoramic cab that enhances visibility and minimises blind spots.



Built to withstand the harshest working conditions, the ZW310-5A features a robust main frame and reinforced joints.



Operators and maintenance teams can quickly perform routine service, minimising downtime and keeping the machine running at peak efficiency.

a comfortable environment by offering separate temperature controls for the foot space and overhead areas.

Tiltable Steering Wheel & Adjustable Suspension Seat: These features provide ergonomic support, reducing strain during long working hours. The mechanical suspension seat absorbs vibrations and shocks, while an air suspension option further enhances comfort.

Reduced In-Cab Noise: Engineered for quiet operation, the cab keeps noise levels low, allowing for a more focused and stress-free working experience.

Rearview Monitor: This system enhances safety by providing a clear view behind the machine, including the counterweight area, minimising the risk of accidents.

The ZW310-5A also comes with an AM/FM radio equipped with an auto-tuning feature and two high-quality speakers. Optional AUX connectivity allows operators to enjoy their favourite music during breaks, making long shifts more enjoyable.

Durability and easy maintenance

Built to withstand the harshest working conditions, the ZW310-5A features a robust main frame and reinforced joints. The box-section structure around the centre pins enhances strength, ensuring the machine can endure high-impact workloads.

Simplified Maintenance Features: Swing-Up Engine Cover: Provides wide service access, allowing for quick and easy inspections from the ground level.

Concentrated Inspection Points: Filters, fuel, and hydraulic systems are easily accessible, reducing maintenance time.

Automatic Reversible Cooling Fan (Optional): Keeps the radiator clean by reversing airflow every 30 minutes, preventing overheating and ensuring optimal performance in dusty environments.

Wide Fin Pitch Radiator (Optional): Prevents dust clogging and simplifies clean-

ing, making it ideal for environments with high airborne debris.

With these features, operators and maintenance teams can quickly perform routine service, minimising downtime and keeping the machine running at peak efficiency.

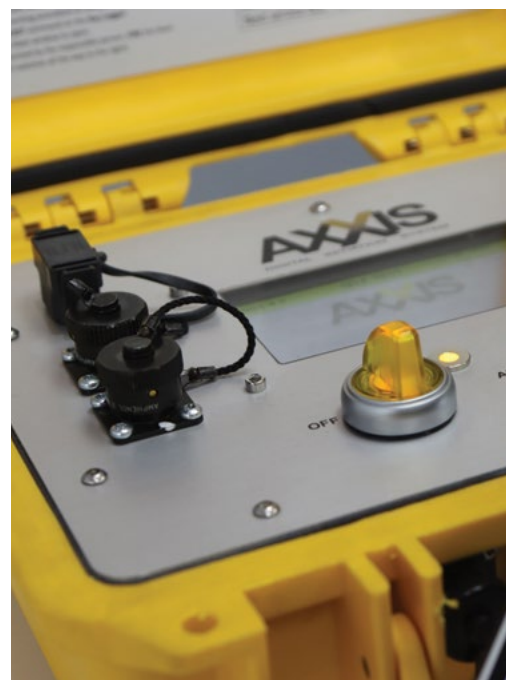
Hitachi Support Chain: a comprehensive service network: To ensure customers get the most out of their investment, Hitachi offers a full suite of after-sales services through its Support Chain program. This includes:

- **Genuine Hitachi Parts:** Designed to meet the brand's stringent quality standards, these parts enhance durability, lower operating costs, and extend the machine's lifespan.
- **Global Online Parts Network:** A centralised system providing real-time inventory updates, order tracking, and fast delivery for over a million parts.
- **Technical Training & On-Site Servicing:** Expert-led training programmes help technicians to maximise machine uptime, while on-site servicing ensures uninterrupted operation regardless of location.
- **ConSite Monitoring System:** A state-of-the-art telematics system that continuously tracks machine performance, providing valuable insights to enhance efficiency and predict maintenance needs before issues arise.

A wheel loader built for the future

The Hitachi ZW310-5A Wheel Loader is not just a machine, it's a game-changer for construction and mining professionals. Combining power, efficiency, comfort, and durability, this loader is built to handle the toughest environments with ease. With advanced technology, reduced operational costs, and an extensive support network, the ZW310-5A ensures that your projects stay on track, no matter what the challenge.

Discover the Hitachi difference today and elevate your productivity with the industry-leading ZW310-5A Wheel Loader. ●



BLASTING TECHNOLOGY **LEADS WITH SAFETY, FLEXIBILITY, AND INTEGRATION**

“Mines can save costs while enhancing safety, by applying the latest technologies in digital blast initiation,” said BME’s General Manager Technology and Marketing Nishen Hariparsad. This was one of the key points of a webinar hosted by blasting experts BME recently, where specialists highlighted the advances made by the company’s leading AXXIS™ initiation system.

With a focus and emphasis on safety, Hariparsad introduced the topic of discussion for the webinar, which was the company’s digital initiation system, AXXIS™. The webinar showcased the features and benefits of the electronic initiation system used in mine blasting. The AXXIS™ system boasts safety, precision, and accuracy, and has been designed and developed over time to create a safe and accurate initiation system for blasting within the mining environment.

Cost savings for mines

One of the greatest benefits posed by the AXXIS™ system is its ability to contribute to cost savings within the mine. Hariparsad noted that the mining industry’s reliance on electricity is well-known, and many mines are seeking a means of reducing dependency on diesel generators.

“One fundamental benefit of using our AXXIS™ electronic blasting system is through electronic initiation,” he said. “It is one way of contributing to mining companies consuming less energy. Having an accurate

blast that is predictable and consistent makes the entire mining process much easier and more efficient. And efficient operations reduce mining costs.

“Through game-changing innovation, AXXIS™ creates not only smarter blasts but safer blasts that put control in the hands of the operator,” said BME Global EIS Development Manager Andries Posthumus. “With our team of dedicated electronic and blast specialists and years of experience in designing electronic initiation systems, we have created a world-class initiation system that helps clients achieve the best possible blast outcomes.”

Tom Dermody, BME’s International Manager Technology and Field Services, emphasised that the fundamentals of AXXIS™ are based on safer technology.

“An important part of the safety features offered by AXXIS™ is that the system is flexible,” said Dermody. “With this flexibility, we can simulate what’s going to happen ahead of time. Simulations are extremely beneficial in allowing us to predict possible outcomes of a blast and further manage those outcomes. While we always aim for the best possible outcome, an important part of the simulation is understanding and



proactively preparing for what's actually going to happen."

According to Posthumus, a vital facet in achieving safety was blending traditional blasting techniques with modern, data-driven technology.

"Enhancing and delivering on our safety procedures, our detonators are designed with a dual basis of safety," he said. "Dual capacitors are used to split the systems safety technology in two. The dual capacitor system is used for communication and testing of the detonator, whilst limiting its stored energy to prevent initiation. Only in firing mode is the firing capacitor calibrated and charged for blasting."

When considering scenarios such as the need to postpone a blast, Dermody stated that the detonator will bleed its energy to de-energise. This is done by disarming the sequence through the commander and can take about 30 seconds to 35 seconds. This not only contributes to the overall functionality of the AXXIS™ system but also offers dependability and safety for all users.

Easy integration into existing operations

Speaking on the development of BME's electronic detonators, Posthumus noted that development began in 2003. With expansion and growth in mind,



BME Global EIS Development Manager
Andries Posthumus.



Tom Dermody, BME's International Manager
Technology and Field Services.



SNAPSHOT



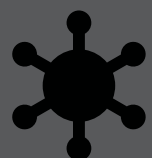
One of the greatest benefits posed by the AXXIS™ system is its ability to contribute to cost savings within the mine.



Through game-changing innovation, AXXIS™ creates not only smarter blasts but safer blasts that put control in the hands of the operator.



The system can withstand operations in different environments, ranging from extremely hot blasts to cooler temperatures.



Simulations are extremely beneficial in allowing operators to predict possible outcomes of a blast and further manage those outcomes.

the system was continuously enhanced, leading to its local and international success. Today, the AXXIS™ digital initiation system provides users with several benefits, including safety, accuracy, flexibility, and integration.

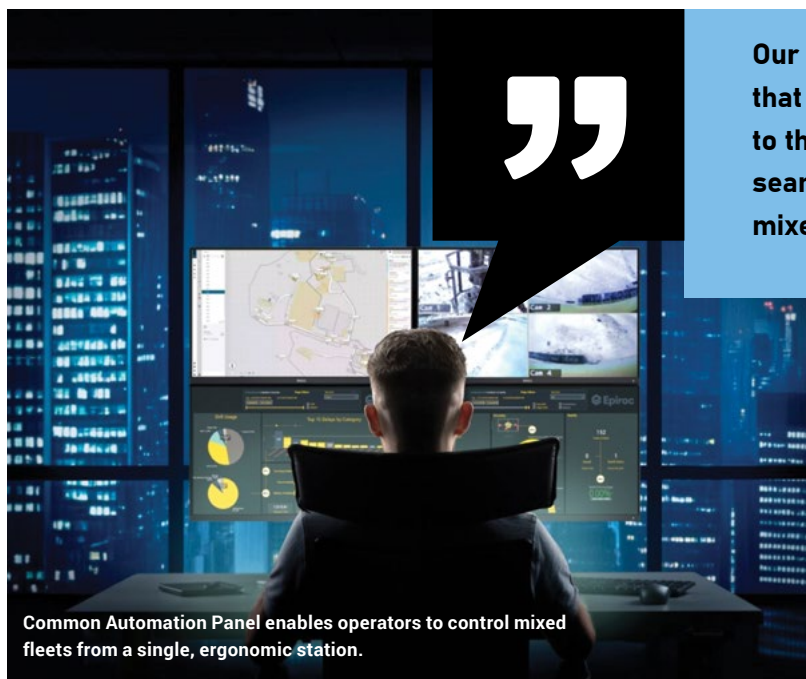
One of the aspects of the AXXIS™ system that was noted in the webinar was its ability to adapt to different environments and temperatures.

"The system can withstand operations in different environments, ranging from extremely hot temperatures to cooler temperatures," Dermody added. "This makes it

ideal for use in the regions where we are present across the globe."

A part of enhanced operability is the need for integration. A key part of the technological design of the system is to integrate the tool with existing systems, such as blast software and the different mine systems used by our customers.

"Our software has been designed to access important information directly, so we can interact easily with existing interfaces making operations and costs more feasible for the mine," said Dermody. ●



Our customers need solutions that grow with them and adapt to their needs — CAP delivers by seamlessly connecting larger, mixed fleets with ease.

COMMON AUTOMATION PANEL – AVAILABLE FOR ORDERS FOR BOTH PIT VIPER AND SMARTROC RIGS

Epiroc is pleased to announce the full availability of its Common Automation Panel (CAP) for both RCS-based surface drill rig models – Pit Viper and SmartROC DTH MKII. With CAP, operators can control mixed fleets from a single, ergonomic station, transforming the remote-control centre into a more efficient, cost-effective, and safer environment. The Common Automation Panel is specifically designed to revolutionise control rooms for modern mining operations.

“CAP exemplifies our vision of an interoperable control room, allowing Pit Viper and SmartROC drills to be controlled by a single platform. Our customers need solutions that grow with them and adapt to their needs—CAP delivers by seamlessly connecting larger, mixed fleets with ease,” says Christopher Blignaut, Automation Manager at Epiroc

Surface division.

CAP offers a complete transformation in remote control centre ergonomics and functionality. With its 12” touchscreen and adaptable joystick configuration, operators can easily transition between machine types, making it an ideal solution for mixed fleet operations and cross-training. Mahmood Hassan, Product Engineer – Automation says “CAP simplifies operations for

our customers with its intuitive interface and gamified controls, minimising training time and helping operators adapt quickly to enhance efficiency and productivity. Through engaging interactive demonstrations, CAP has generated excitement and enthusiasm from customers.”

Key benefits of CAP include:

- Enhanced control room layout, enabling greater operator efficiency and reduced variability.
- Lower costs for maintenance, training, and spare parts through a single panel for mixed fleets.
- A new safety system, which allows more machines to connect to a single control room, improving situational awareness and optimising fleet operations.

The Common Automation Panel helps lower the total cost of ownership and supports consistent, predictable operation, which contributes to decarbonization efforts and improved operator health and wellbeing.

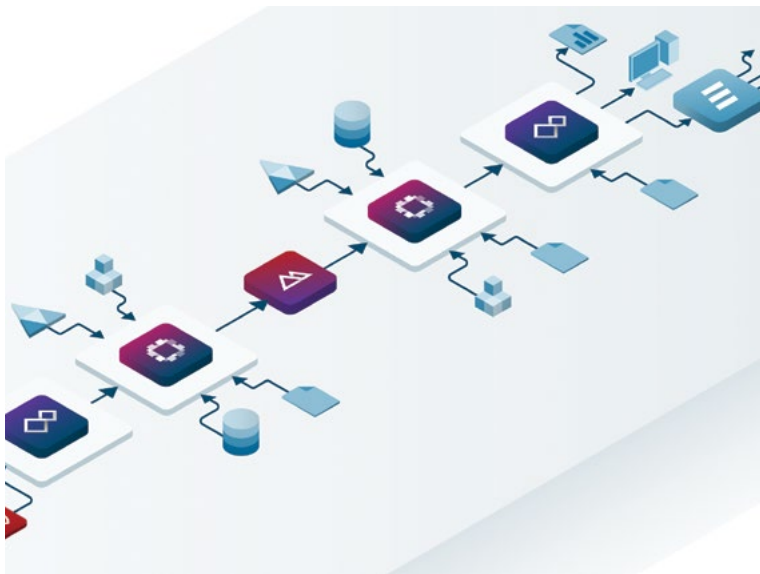
With rising demands for environmental, social, and governance (ESG) standards, as well as the need for advanced digital solutions in mining, CAP directly addresses these requirements. This innovation underscores Epiroc’s commitment to supporting safe, productive, and sustainable mining.

“CAP enables operators to control drills from anywhere in the world, offering flexibility, safety, and improved working conditions while allowing mine and quarry sites to gradually adopt automation as their infrastructure and procedures evolve”, added Chris Blignaut.

The Common Automation Panel is now available for Pit Viper and SmartROC drill rigs. ●

NEW MAPTEK PLATFORM FOR STRATEGIC DECISION MAKING

On the back of successful demonstrations at MINExpo International in Las Vegas in September, Maptek is excited to announce that its Maptek Vestrex ecosystem for automation and orchestration is open for early access customers.



Vestrex creates extraordinary value by making connections between diverse data sources without constraints of product, application, process or format. Data in the cloud encourages stakeholders across mining roles, teams and organisations to collaborate and explore new use cases for their technical data beyond traditional applications.

Automation streamlines operations through real-time data and process integration and accelerates decision making processes. Orchestration builds on computational power and automated workflows to unlock value from technical data and mining systems.

Global Strategy Manager, James Mackenzie commented on the interest surrounding Vestrex during MINExpo.

"Everyone we spoke to could immediately think of a way they could apply Vestrex to their organisation," Mackenzie said. "All of the ideas were different and all of them were achievable, because Vestrex enables collaboration on many levels, limited only by imagination."

"Customers can expect effortless data transfer between cloud and desktop environments, with data managed securely from a centralised platform," Mackenzie added. 'They will also be able to work with Maptek to orchestrate custom processes that handle their particular challenges.'

The new platform is based on three key pillars - data services, cloud computing and orchestration—sharing a common vision for solution integration and inter-process workflows.

Maptek Data Systems (MDS) is

the integration hub for ingesting data from anywhere through open APIs. MDS enables native in-app integration with Maptek desktop solutions and manages version control and publishing permissions through Maptek Account.

The second pillar in the Maptek ecosystem, Maptek Compute Framework (MCF) is already powering machine learning and optimisation in Maptek scheduling and domain modelling solutions. Time-consuming calculations can be completed on scalable resources for on-demand results.

The third and newest pillar, Maptek Orchestration Environment (MOE) is the key to unlocking value through collaboration, according to Mackenzie.

"Vestrex connects algorithms, executables and transformations to leverage computational power, scalability and parallelisation across business and technical systems. If you can get your data into Vestrex, Maptek can help transform it into value."

An important feature is the flexibility to incorporate 'human in the loop' review and analysis at any stage within automated processes. Customisation of decision trees and unrestricted complexity mean the use cases are limitless. Robust data security includes encryption and backup protocols that protect sensitive information for operational continuity.

Mackenzie sees the true power of Vestrex as the ability to bind data and computations to create automations that streamline processes and data pipelines, integrating them within broader business workflows.

"Making data accessible and consumable across multiple stakeholders, including non-technical users, at every stage of the mine life cycle fosters collaboration that can discover new and unexpected use cases in a way that redefines industry standards," Mackenzie concluded.

Miners who believe Vestrex can unlock additional value at their operation should contact Maptek to inquire about the early access programme. ●

BEOWOLF'S BIG MOVES IN QUARRYING AND MINING

Supplier of drilling consumables to the quarrying and mining sector, Beowolf Mining, which celebrates a milestone 22 years in industry, has several irons in the fire as it targets exponential growth over the next few years. Among the initiatives underway, the South African-based entity recently piloted a game changing innovation for the drilling industry, Director of Sales, Riaan Theron, tells **Modern Quarrying**.

Hard rock mining

Beowolf designs and develops customised products for industry specific needs, including its recently launched high strength drill bit suitable for hard rock mining. According to Theron, some drill bits are not equipped to withstand the tough hard rock environment, often breaking during the drilling process, which is why it developed a robust high tensile drill bit.

"Hard rock mining is a challenging business; however, it is an environment wherein Beowolf excels, having cut our teeth in hard rock mining 22 years ago. Since then, we have invested heavily in technology developments and have been developing customised solutions for our clients in specific mining industries.

"The new drill bit, applicable to open pit and underground mining, is compatible with existing drill rods used in the industry. The game-changing innovation is currently being tested at two different sites and the results look extremely promising.

"The benefits of this high strength innovation is two-fold – firstly, it minimises the risk of losing the expensive drill bit during the drilling process, and secondly, it is compatible with existing top

hammer drilling equipment currently available in the market."

Reaping the rewards of showcasing products at Electra Mining Africa

Beowolf showcased its range of products at Electra Mining Africa 2024. According to Theron, the event was highly successful for the company, which received several inquiries related to its specialised products, including self-drilling anchors and repair to hydraulic drifters. Having made contact with potential partners at Electra Mining Africa 2022, 2024 saw Beowolf ink a partnership with an established company that focuses on self-drilling anchors, used in roof stabilisation at mines.

Most fatalities in the South African mining industry were historically caused by falls of ground, transport and general accidents. Since 2021, falls of ground were no longer the major cause, with more fatalities being in the transport and mining and general categories. The agreement sees Beowolf adding self-drilling anchors to its product range.

Theron explains that the partnership offers a 'win-win' opportunity for both entities; including a springboard into new markets in different geographies and entry into other commodities.



Hydraulic drifters: range and abilities

The hydraulic drifter industry is a niche market dominated by two-to-three players. A few years ago, Beowolf took a strategic decision to enter the market as a stockist of hydraulic drifter parts and repairer of the highly specialised equipment.

At the Electra Mining Africa 2024 event, Beowolf showcased its range of abilities, including repairing and refurbishing hydraulic drifters, used on underground and open pit drill rigs.

"To repair and refurbish hydraulic drifters requires specialised equipment and a workshop, which we have at our offices in Rustenburg."

The company is in the process of negotiating new agreements for the repair of hydraulic drifter equipment – one for a project in the Northern Cape and the other for a mine in the North West Province. ●



Beowolf beds down in West Africa

Beowolf established its head office in Rustenburg, in the North West province, to service the chrome and platinum mines, and 10 years ago, expanded its footprint into the Northern Cape to service iron-ore, manganese and zinc mines.

Beowolf has recently made a foray into the West African market, where it continues to consolidate its position in the mineral rich destination.

Apart from being an important source of gold, iron-ore, uranium and diamonds, West Africa is also rich in aluminium, nickel, phosphate, manganese and zinc. With most of the mineral wealth in this region currently undeveloped, the region's importance in the global mineral economy is set to increase in the future.

According to Theron, with Beowolf's sights set firmly on leveraging its local presence in West Africa, the company will focus more on expanding its market share in this area.

Beowolf has been doing business in West Africa since 2022 and over the past two years has experienced a "steep learning curve" in relation to transport and logistics.

A miscalculation on the part of the company or product delays can incur daily fees and penalties at the port, something to be avoided at all costs." According to Theron, Beowolf prides itself on having sufficient stockholding to ensure that customers have stock when required.

"Having rolling stock and additional inventory remains one of Beowolf's competitive

advantages, especially given local port congestions. Further to this, the cost of containers continues to skyrocket, which means that businesses have to be extremely innovative in how they manage transport and logistics."

Theron adds that in order to succeed as a supplier in the region, one needs to have a good risk management programme related to payments – a key challenge experienced by many doing business in the region.

Aside from West Africa, Beowolf has a presence in Botswana, Burkina Faso and, more recently, Namibia.

Locally, the company has branches in the Northern Cape and distributor agreements to service the Gauteng, Northwest, and Mpumalanga provinces.

KEYS TO SUCCESSFUL CONVEYOR SAFETY AND MAINTENANCE TRAINING

Bulk-handling conveyors are massive, powerful systems that move tons of material per hour in complex networks over long distances. By Jerad Heitzler, Training Manager - Martin Engineering and Todd Swinderman, P.E. and CEO Emeritus - Martin Engineering.

Whether the systems are in a mine, cement plant, port, or quarry, their size, speed, and power present the risk of catastrophic injury in the blink of an eye. This makes training essential, no matter what activity is happening around a conveyor.

Training challenges

Many industries are facing the retirement of workers with expertise and knowledge, leaving them without adequate mentorship. This has good and bad aspects. Although basic on-the-job training passed down from worker to worker is valuable, it can leave organisations vulnerable to past workers teaching bad habits.

Unless the operations personnel have solid, real-world knowledge in bulk material handling to make educated decisions when addressing problems, bad habits are easily perpetuated. Knowledge needs to help

maintenance workers avoid costly and dangerous trial-and-error learning.

Understanding how and why accidents happen is also critical in preventing them from occurring. Having knowledgeable trainers who address the symptoms of problems with workable long-term solutions will reduce unsafe practices and improve efficiency while enhancing profitability.

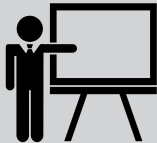
Seek deeper understanding

In many operations, there is a lack of qualified conveyor trainers. Equipment vendors and third-party trainers can be highly effective sources of training. However, with hundreds of companies providing such services, expertise and approaches can vary widely.

Training specialists from equipment manufacturers who offer training programmes, like Martin Engineering, focus on overall conveyor performance and safety training. Combining deep industry experience and modern engineering will significantly improve operating decisions, resulting in higher productivity, fewer safety incidents, and reduced unplanned outages.

Qualified teachers should provide a variety of delivery methods based

SNAPSHOT



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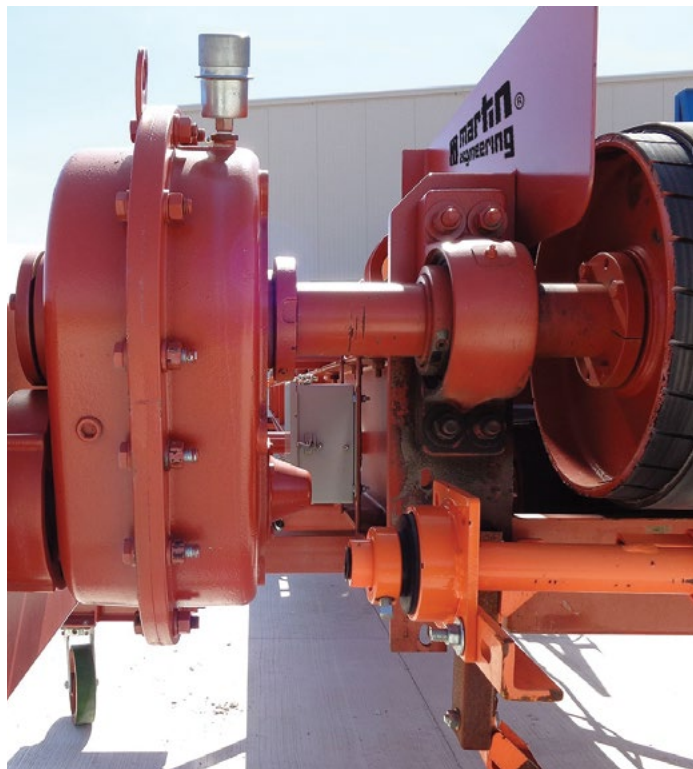
Qualified teachers should provide a variety of delivery methods based on different learning styles.



Martin trainers use the most effective training approach, which examines a plant's specific conveyor challenges and helps companies run cleaner, safer, and more productive operations by treating the root causes of their problems.



BEST PRACTICE: Bulk handling specialists who conduct a site-specific analysis before any training sessions.



Conveyor drive motors can be as large as 450 kW, moving belts as fast as 10 mps.



Some conveyor training providers offer online options that are available 24/7.

on different learning styles. For example, they should provide good graphics for visual learners, clear documentation for those who learn best by reading, demonstration models, or actual equipment for hands-on learners. These methods should all be designed to increase the probability of measurable positive results.

The payback on quality training

Organisations that embrace an effective training culture from the top down show significant performance advantages over the competition. This is reflected in safety, productivity, and environmental records, as well as above-industry-average financial returns and share prices.

While many training efforts aim to maximise productivity, improving safety is a key element in achieving this objective. Insufficient safety training can be incredibly costly to an operation. When companies ensure workers have adequate training on particular risks, costs are minimised. Instead of simply teaching workers how to maintain a conveyor system, educators must also help students understand the consequences of not performing adequate

maintenance.

With over 80 years of solving bulk handling challenges, the Martin Engineering Foundations™ Training has established itself as the most detailed and comprehensive conveyor belt maintenance and safety training system in the bulk handling industry. Using the Foundations™ textbooks, onsite trainers provide both classroom and hands-on training on the equipment trainees experience daily. The free online Martin® Foundations™ Learning Center, accessible by computer, tablet, or smartphone, supports the lessons and is available 24/7. It uses a mix of text, photos, videos, webinars, online events, and live experts available to answer questions.

Martin trainers use the most effective training approach, which examines a plant's specific conveyor challenges and helps companies run cleaner, safer, and more productive operations by treating the root causes of their problems. When workers and management understand why specific actions are essential and the cascading effects of poorly trained staff, they are more likely to adjust their behaviours and reap the benefits. ●



TRANSFORMING CONVEYOR EFFICIENCY

Conveyor belts are crucial components in mining and heavy aggregate handling operations, where efficiency and reliability are paramount. However, these systems often encounter significant challenges, particularly in the loading zones where the impact of falling materials can cause severe belt damage. Tru-Trac's EXHD Dynamic Impact Idler Bed offers a robust solution designed to protect belts and enhance system reliability in the most demanding applications.

COO of Tru-Trac, Shaun Blumberg unpacks the design, benefits and broader impact control capabilities of Tru-Trac's innovative solution.

Blumberg says the challenge of managing impact control in loading zones is a significant one for all materials handling operations. "These transfer zones are the points where materials are introduced onto the belt from chutes, often from considerable heights ranging from 2 metres up to 10 metres. The force of this impact can lead to

various issues including belt damage, material spillage and belt misalignment. Insufficient support and impact control ultimately results in frequent maintenance needs, increased downtime and higher operational costs."

"Traditional impact rollers, while commonly used due to their low cost, often provide inadequate shock absorption particularly in high-drop applications," he continues. "Furthermore, poorly designed chutes and under-specified impact beds can worsen the problem."

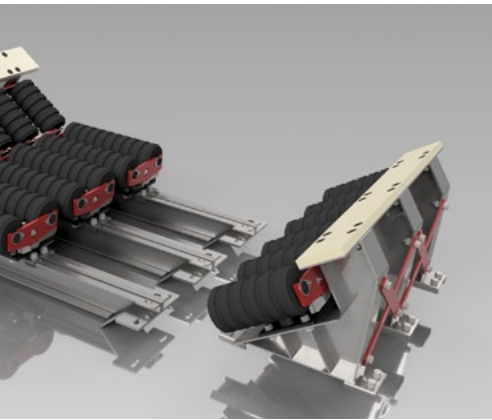
It is a known fact that improperly engineered loading zones that fail

to distribute material evenly or align with the belt's trajectory create uneven wear, and this significantly increases the likelihood of belt damage.

According to Blumberg, Tru-Trac's EXHD Dynamic Impact Idler Bed represents a unique and significant advancement in addressing these issues. Specifically engineered for applications with drop heights between 2 metres and 10 metres, this system is designed to absorb heavy aggregate impacts safely, preventing belt damage and extending the belt's life.

The Tru-Trac EXHD Dynamic Impact Idler Bed combines dynamically adjusting impact idlers with robust shock-absorbing springs to provide superior impact control.

The impact idlers in the Tru-Trac EXHD system oscillate to adjust dynamically to the load, significantly reducing the force transmitted to the belt. This movement allows the system to absorb and dissipate impact energy more effectively than static systems. The heavy duty springs enhance this absorption, capable of handling loads up to 11.4 tons, working in tandem with the idlers to manage high impact conditions effectively. This advanced design ensures minimal stress on the belt, preventing damage and enhancing durability.



Blumberg says that Tru-Trac offers a range of impact control solutions tailored to specific application requirements ensuring that conveyor systems are protected from various types of impact forces. This includes

standard impact beds, impact rollers and slider frames; all of which are engineered for easy installation and minimal maintenance.

Tru-Trac's capabilities also extend to addressing dust and spillage around the impact or loading zone. "Proper dust and spillage control are essential for maintaining a clean and efficient conveyor environment and our solutions help to minimise material loss and prevent the accumulation of debris which can lead to additional wear and operational inefficiencies," he says.

A recent case study from a copper mine in the DRC highlights the effectiveness of the Tru-Trac EXHD Dynamic Impact Idler Bed. The mine faced extreme challenges with its conveyor system, where high impact loads in the loading zone frequently caused belt damage, leading to significant downtime and maintenance costs. The existing impact system, which used traditional rollers, proved inadequate for handling the high drop heights and abrasive materials.

"Our local team conducted a comprehensive site assessment, collecting the necessary data and analysing

various factors such as material properties, drop heights, existing system configurations and operational challenges," Blumberg says. "This detailed evaluation included observing the wear patterns on the existing conveyor belt, identifying the sources and magnitude of impact forces and assessing the overall condition of the loading zones."

"By gathering the necessary information first hand and gaining a thorough understanding of the specific conditions and requirements, our engineering team could offer a solution that would effectively address the unique challenges faced by the site and this saw the installation of our Tru-Trac EXHD Dynamic Impact Idler Bed," he says. In this application, the system's oscillating idlers and heavy duty springs work in tandem to absorb and disperse the severe impacts. The oscillating idlers dynamically adjust to the load, allowing them to move with the material as it falls onto the belt. This dynamic adjustment significantly reduces the direct force transmitted to the belt, preventing sudden shocks that can cause damage. The heavy duty springs complement this action by providing robust shock absorption, further minimising stress on the belt.

"Together, these components ensure that the belt remains aligned, preventing issues such as misalignment, tearing and edge wear. By maintaining proper alignment and reducing impact related damage the system increases the belt's longevity and reliability and has ultimately led to reduced maintenance costs and increased uptime at this customer," Blumberg says.

It is apparent that the broader impact of poorly designed loading zones cannot be underestimated. Inadequate impact protection can lead to increased spillage, belt misalignment and structural damage to the conveyor system. Misalignment causes the belt to drift leading to additional wear on the edges and other components which, in turn, increases maintenance requirements and potential operational downtime. Chutes that are not properly aligned with the conveyor can misdirect materials, creating irregular impact points and causing excessive localised stress on the belt. This can result in belt failure and significant operational disruptions.

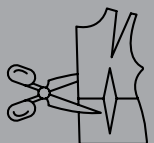
"Tru-Trac's EXHD Dynamic Impact Idler Bed represents a significant advancement in conveyor belt protection, effectively addressing the complex challenges of impact control in loading zones and we believe that investing in high quality impact beds and ensuring proper chute design is crucial for maintaining efficient and reliable conveyor operations," Blumberg concludes. ●



SNAPSHOT



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OVERCOMING STICKY CHALLENGES IN MATERIAL TRANSFER SYSTEMS

Handling sticky materials in mining and minerals processing can create significant obstacles, from equipment blockages and excessive wear to increased maintenance and operational inefficiencies. Successfully addressing these challenges requires specialised expertise and tailored solutions, according to Dewald Tintinger, Technical Manager at Weba Chute Systems.

"Sticky materials are notorious for causing inefficiencies in transfer systems," says Tintinger. "To mitigate these issues, it is essential to partner with experienced solution providers who understand the complexities of material behaviour and transfer point design."

Smarter designs for smoother operations

The flow of sticky materials can be improved significantly with thoughtful transfer point designs that minimise blockages and build-ups. Tintinger explains that optimised chute geometry is critical to maintaining material movement.

"By designing chutes to reduce impact forces and prevent material degradation, we create transfer point systems that operate more smoothly. Using durable linings, such as ceramic or rubber, further protects the equipment from wear and extends its service life," he explains.

Controlling moisture levels is another vital consideration when dealing with sticky materials. Tintinger points out that excessive moisture increases material adhesion and build-up, disrupting flow. "Incorporating proper drainage, dust suppression or material conditioning systems helps maintain ideal moisture levels, which reduces the risk of blockages."

Addressing material variability

Sticky material challenges are often exacerbated by inconsistent material properties, such as segregation or oversized particles. Tintinger highlights the value of



blending systems and controlled crushing or screening to produce consistent material characteristics that promote smooth handling.

"These adjustments ensure the material moves effectively through the system, reducing the likelihood of disruptions," he adds.

A holistic approach to material handling

An integrated view of the entire material handling process is essential for long-term success. Belt cleaning systems, for instance, are indispensable for preventing sticky material carry-back that can lead to blockages at transfer points.

"Combining primary and secondary belt cleaners with tracking systems keeps belts clean and aligned, reducing wear and operational delays," Tintinger notes.

Boosting productivity and efficiency

Tintinger emphasises that well-designed transfer points offer far-reaching benefits. "A proactive approach to managing sticky mate-



Dewald Tintinger, Technical Manager at Weba Chute Systems.

rials not only reduces maintenance and downtime but also optimises efficiency and productivity across the operation."

"By addressing these challenges holistically, Weba Chute Systems continues to deliver innovative solutions that keep mining and minerals processing plants running smoothly, even in the stickiest situations," he concludes. ●

OVERCOMING STICKY CHALLENGES IN MATERIAL TRANSFER SYSTEMS

Handling sticky materials in mining and minerals processing can create significant obstacles from equipment blockages and excessive wear to increased maintenance and operational inefficiencies. Successfully addressing these challenges requires specialised expertise and tailored solutions, according to Dewald Tintinger, Technical Manager at Weba Chute Systems.

"Sticky materials are notorious for causing inefficiencies in transfer systems," says Tintinger. "To mitigate these issues, it is essential to partner with experienced solution providers who understand the complexities of material behaviour and transfer point design."

Smarter designs for smoother operations

The flow of sticky materials can be improved significantly with thoughtful transfer point designs that minimise blockages and build-ups. Tintinger explains that optimised chute geometry is critical to maintaining material movement.

"By designing chutes to reduce impact forces and prevent material degradation, we create transfer point systems that operate more smoothly. Using durable linings, such as ceramic or rubber, further protects the equipment from wear and extends its service life," he explains.

Controlling moisture levels is another vital consideration when dealing with sticky materials. Tintinger points out that excessive moisture increases material adhesion and build-up, disrupting flow. "Incorporating proper drainage, dust suppression or material conditioning systems helps maintain ideal moisture levels, which reduces the risk of blockages."

Addressing material variability

Sticky material challenges are often exacerbated by inconsistent material properties, such as segregation or oversized particles. Tintinger highlights the value of



blending systems and controlled crushing or screening to produce consistent material characteristics that promote smooth handling.

"These adjustments ensure the material moves effectively through the system, reducing the likelihood of disruptions," he adds.

A holistic approach to material handling

An integrated view of the entire material handling process is essential for long-term success. Belt cleaning systems, for instance, are indispensable for preventing sticky material carry-back that can lead to blockages at transfer points.

"Combining primary and secondary belt cleaners with tracking systems keeps belts clean and aligned, reducing wear and operational delays," Tintinger notes.

Boosting productivity and efficiency

Tintinger emphasises that well-designed transfer points offer far-reaching benefits. "A proactive approach to managing sticky mate-



Dewald Tintinger, Technical Manager at Weba Chute Systems.

rials not only reduces maintenance and downtime but also optimises efficiency and productivity across the operation."

"By addressing these challenges holistically, Weba Chute Systems continues to deliver innovative solutions that keep mining and minerals processing plants running smoothly, even in the stickiest situations," he concludes. ●



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