



MODERN QUARRYING

QUARTER 4 | 2023

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JOHN DEERE CONSTRUCTION
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**LAUNCHES REMAN
IN SOUTH AFRICA**



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EMBRACING THE DIGITAL QUARRY: UNLOCKING EFFICIENCY, SAFETY AND SUSTAINABILITY

Digitalisation holds enormous potential to help quarries boost their competitiveness ...



RESETTING STRATEGIC THINKING, CONSOLIDATING TALENT, AND A FOCUS ON COLLABORATIVE APPROACHES

The end of 2023 affords one the opportunity to reflect on the year. According to the KPMG 2023 CEO Outlook Survey – Southern Africa, CEOs remain confident in the future of the global economy. However, there is now significant consideration for escalating uncertainty and global crises. The latest is the Israeli-Palestinian conflict, but the Russia-Ukraine war is also still raging. In addition, there is the growing problematic economic situation in especially South Africa, and the country's erratic political landscape.

According to the survey, CEOs are now resetting their strategic thinking, consolidating talent, have a focus on collaborative approaches as well as an eye on upcoming technology. In this issue we focus on especially the latter. The article on page 10 'Embracing the digital quarry: unlocking efficiency, safety and sustainability' focuses on how digitalisation holds enormous potential to help quarries boost their competitiveness. This tailored, partnership-led approach is key to unlocking the benefits in a practical and affordable way. This article reflects on the elements that



the survey highlights: disruptive technologies, talent and a collaborative approach.

The KPMG 2023 CEO Outlook Survey – Southern Africa is an annual report which was compiled in partnership with Business Leadership South Africa (BLSA). It uses the perspectives of 60 CEOs, and six from others in the Southern African region.

The report maintains that Southern Africa retains its significant long-term potential which includes a growing human capital advantage, the presence of abundant natural resources (especially with regards to quarrying) and some 'pockets of excellence in institutions and infrastructure'.

The report is cognisant of the fact that emerging market economies are severely impacted by world events. Smaller currencies and

stock markets suffer, and the potential for foreign investment diminishes. This has been the case with the South African construction industry – the biggest feeder to the quarrying industry. Political factors have exacerbated the situation.

Even though it is not wholly applicable to the labour intensive construction industry, the basic concept of it is increasingly true: 73% of CEOs in Southern Africa have expressed that they will be prioritising the placement of their capital investment into acquiring new technology rather than the upskilling of their workforce.

The role of Environmental, Social and Governance (ESG) is increasingly being recognised. It is not just about the the bottom line any more but about the brand, employees and customers.

In another article on page 8 ('SA needs a sustainable construction industry'), Aspasa's Anthony Bowen maintains that if South Africa is to meet its full potential, it will need to develop human settlements which are socially acceptable and capable of economic development and growth.

The quarrying industry is not just about the making of big rocks into smaller rocks for aggregate and sand that can be used in road building and construction. It is intricately linked to the construction industry which in turn is linked to the local economy, which is linked to global condition. That is why the KPMG 2023 CEO Outlook Survey – Southern Africa is so relevant: it gives a more general perspective of the quarrying industry.

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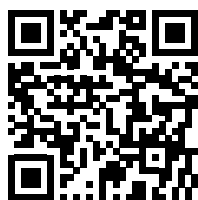
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JOHN DEERE CONSTRUCTION AND FORESTRY DIVISION LAUNCHES REMAN IN SOUTH AFRICA

In an innovative move, John Deere Africa Middle East's Construction and Forestry division introduces the REMAN programme in South Africa. This initiative heralds a new era in the machinery maintenance landscape, offering a local solution for remanufactured parts that combines efficiency, affordability, and sustainability.



KEY TAKEAWAYS



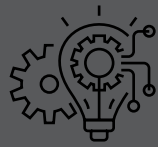
The Operational Breakdown service involves a detailed process where customers report component failures to their local dealers.



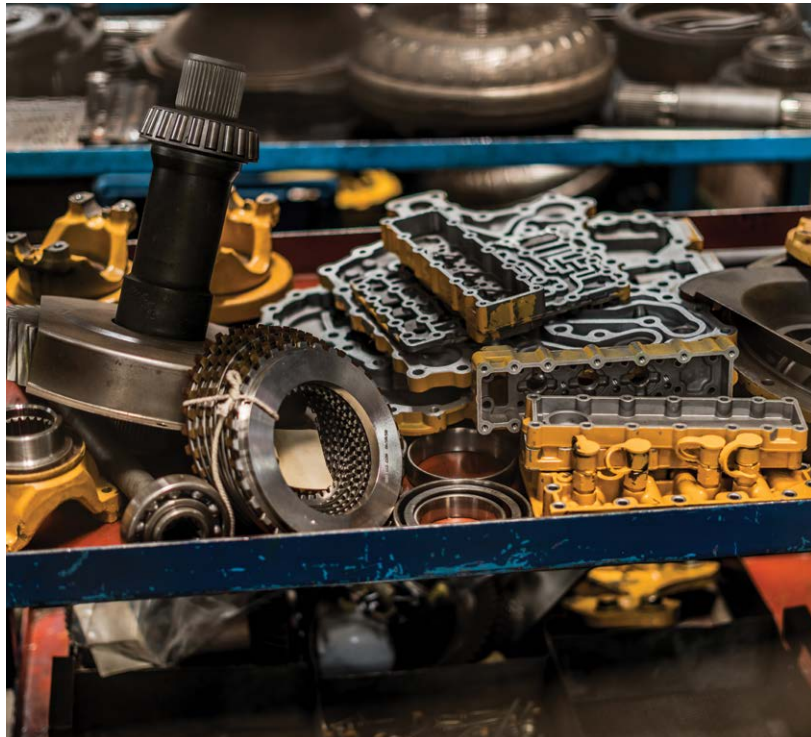
For urgent repair needs, the Urgent Request solution offers an expedited response.



The use of remanufactured parts presents an economically viable option for customers, significantly reducing the cost compared to new parts.



The REMAN programme incorporates advanced technological processes in the remanufacturing of parts.



Tailored REMAN solutions

John Deere's REMAN programme is uniquely structured to cater to different operational needs. It comprises two main solutions: the Operation Breakdown Reman solution for less urgent needs and the Urgent Request solution for immediate component replacement, ensuring minimal downtime and maximum efficiency.

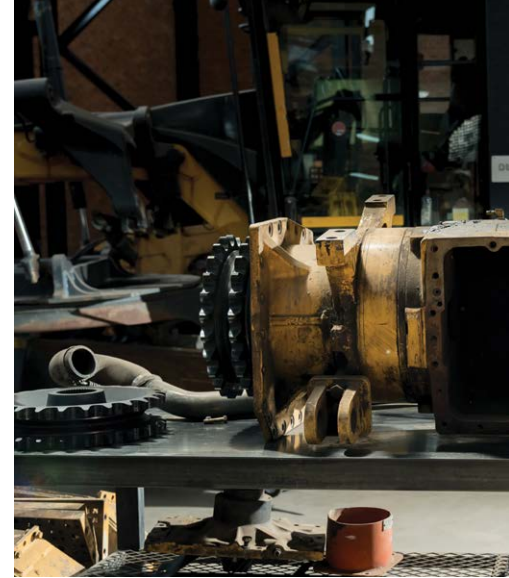
Advantages of remanufactured parts

The use of remanufactured parts

presents an economically viable option for customers, significantly reducing the cost compared to new parts. These parts undergo rigorous testing to meet John Deere standards, ensuring reliability and performance on par with new components.

Operational Breakdown solution

The Operational Breakdown service involves a detailed process where customers report component failures to their local dealers. The dealers then perform a thorough analysis and provide cost estimations for repairs.



”

The REMAN programme incorporates advanced technological processes in the remanufacturing of parts. This includes state-of-the-art diagnostics, precision engineering, and rigorous quality control measures, ensuring that remanufactured parts are as reliable as their new counterparts.

This transparent process, typically spanning five to seven working days, ensures minimal impact on operations.

Urgent request solution

For urgent repair needs, the Urgent request solution offers an expedited response. The failed

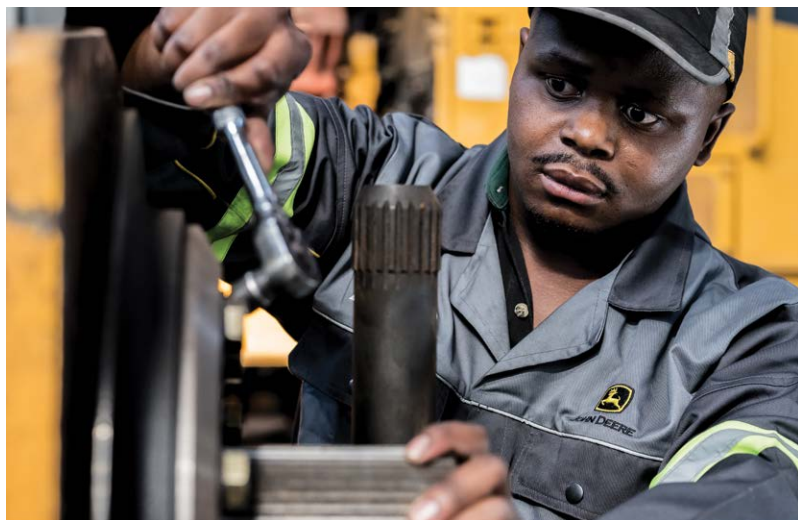
part is swiftly replaced with a genuine John Deere component. The original faulty part undergoes a meticulous evaluation to identify reusable components, leading to a core credit for the customer. This not only accelerates the repair process but also promotes resource optimisation.

Impact on the South African market

The introduction of the REMAN programme is poised to have a significant impact on the South African construction and forestry sectors. By offering a cost-effective and efficient solution for part replacements, it enables businesses to manage their machinery more effectively, potentially leading to increased productivity and reduced operational costs.

Technological advancements in remanufacturing

The REMAN programme incorporates advanced technological processes in the remanufacturing of parts. This includes state-of-the-art diagnostics, precision engineering, and rigorous quality control measures, ensuring that



The launch of the REMAN solution in South Africa is a testament to John Deere's commitment to innovation, customer satisfaction, and environmental stewardship.

remanufactured parts are as reliable as their new counterparts.

Sustainability and environmental benefits

In line with environmental trends, the REMAN programme emphasises sustainability. By refurbishing parts, it significantly reduces waste and conserves resources, aligning with the movement towards more eco-friendly industrial practices.

Broader implications for industry

The REMAN programme is more than just a service offering; it represents a shift in the industry towards more sustainable and efficient practices. This initiative by John Deere could serve as a model for other companies in the construction and forestry sectors, promoting a more sustainable approach to machinery maintenance.

After-sales support and dealer network

John Deere's comprehensive dealer network ensures robust after-sales support for the REMAN program. Each dealership is equipped to provide customers with detailed information and assistance, ensuring a smooth and informed experience.

The launch of the REMAN solution in South Africa is a testament to John Deere's commitment to innovation, customer satisfaction, and environmental stewardship. It offers a new paradigm in machinery maintenance, combining cost-effectiveness with high performance and sustainability.

All parts are guaranteed for 12 months or 1 000 hours – whichever comes first. ●



ASPASA Environmental Auditor, Anthony Bowen.



SA NEEDS A SUSTAINABLE CONSTRUCTION INDUSTRY

If South Africa is to meet its full potential, we will need to develop human settlements which are socially acceptable and capable of economic development and growth. Modern Quarrying gives an overview of ASPASA'S take on it.

According to surface mining industry association ASPASA, sustainability is not only the sphere for environmentalists, but rather the whole supply chain within construction and infrastructure development processes who should be keenly aware of sustainable development issues.

This should include the protection of our earth's natural resources where building materials are derived from and the essential need for building products and services to be made at a fair and affordable price.

Hard work

Around South Africa ample work is needed, there are still many

communities without sufficient housing. Urban development is putting ever more pressure on our cities' infrastructure and facilities which need to be upgraded to correctly aid our communities.

"In future South Africa will need to create cities where economic and social systems support the notion of long-term sustainability. We will also need to create business and living spaces that enable the creation of jobs and that facilitate wealth-building. Communities can then become more socially coherent, and this will enable individuals to work together for the greater good of their own society.

"This can only be done if people have proper shelter and adequate affordable housing. They need to

have a livable environment and have a sense of belonging, as well as a sense of pride in their surroundings and in their city. Infrastructure must therefore be created that enables the ongoing sustainability and improvement of these areas," says ASPASA Environmental Auditor, Anthony Bowen.

Forward thinking

Associations such as ASPASA play a crucial role in the sustainable construction industry. These associations supply the key ingredients of all building and construction projects in the form of sand and stone, which creates vital building blocks for concrete structures, roads and others.

At the core of its existence the

association's main objective is to tend to the long-term sustainability of the quarrying industry and to align it with quality labour and social requirements as well as legal and environmental compliance. The building industry can increase its standards by simply dealing with accredited sustainably operated suppliers of building materials and therefore discredit unethical and illegal suppliers.

As the legal and regulated quarrying industry is at a constant with cleaning up its act and ensuring social environments, health and safety commitments are being met. The illegal operators are growing and selling their goods and creating an immense impact on the sustainability of the legal trade our country possesses.

Key points to having a truly sustainable industry are as follows:

- Sustainable and energy efficient designs
- Environmentally friendly practices
- Sustainable maintenance

- practices
- Materials must be produced in a sustainable way
 - Quality of materials should be a prime concern
 - Surrounding communities should derive maximum benefit from all building and construction activities
 - Skills development and job creation should leave a sustainable legacy

Implementing these measures of sustainability will ensure that the structures and roads that are built will last and ensure that businesses remain profitable into the future. By supporting quality suppliers, the industry can help grow quality building contractors.

Governmental cooperation

"In addition, role players need to be identified to drive development and act in a leadership role to ensure sustainability," explains Bowden.

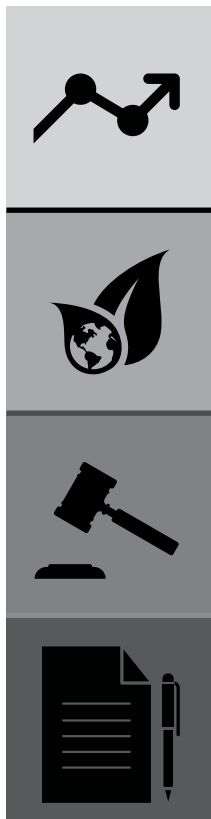
"Our first most important role-player is our government, focusing on the development of infrastructure, schools, hospitals, roads, police stations, houses,

hospitals as well as other key structures, it all needs to be well mapped out and developed into the community in a sustainable manner.

"The money allocated through the fiscus needs to be spent wisely to ensure it ticks all the boxes of sustainability in terms of ethical social environments etc. Putting this infrastructure in place to facilitate employment and social coherence, and as a result no shortcuts can be taken at this point as this is what will form the basis of our future developments.

"The government's duty is to legislate the quarrying industry and create equal opportunity by cutting out illegal mining, preventing imports of low-grade building materials such as cement. Following the government's duty, it is the responsibility of the built environment professionals to strive for quality sustainability as well as social and economic upliftment. By simply insisting on locally produced cement, we can have a sustainable supply system, having correctly manufactured readymix from accredited suppliers such as ASPASA members.

KEY TAKEAWAYS



Urban development is putting ever more pressure on our cities' infrastructure and facilities which need to be upgraded to correctly aid our communities.

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By ensuring that companies comply with regulations and meet the standards of the South African Bureau of Standards (SANS), professionals can affirm suitable care is taken of employment conditions, residential areas, and communities.

Being compliant

"By ensuring that companies comply with regulations and meet the standards of the South African Bureau of Standards (SANS), professionals can affirm suitable care is taken of employment conditions, residential areas, and communities.

"For this reason, we plead with role players to look at the big picture when planning for sustainability. Government and building professionals need to look beyond the use of "green" products for new developments. To have a truly sustainable building industry we need to make sure the products we use are ethically derived and comply with standards.

"We also need to deal with suppliers and contractors that are focused on true sustainability in terms of social, environmental and economic upliftment of the region and the country," concludes Bowden. ●

EMBRACING THE DIGITAL QUARRY: UNLOCKING EFFICIENCY, SAFETY AND SUSTAINABILITY

Digitalisation holds enormous potential to help quarries boost their competitiveness – and a tailored, partnership-led approach is key to unlocking the benefits in a practical and affordable way, says Andrey Komov, Head of Productivity for Region International at Volvo Construction Equipment.

In production applications, such as quarries, that involve repetitive jobs and moving large amounts of materials, failing to adopt a digital transformation strategy can have severe repercussions. Even small efficiency gains per tonne moved can add up to significant savings over time, improving competitiveness and the bottom line, but these opportunities can be difficult to detect with traditional methods.

And that's not the only benefit. Real-time monitoring of machines and operator behaviour enables quarry managers to spot deviations that could lead to downtime and proactively implement safety measures to prevent accidents. Meanwhile, reduced administration and paperwork empowers workers to focus on more critical tasks, leading to increased productivity, and makes the quarry a more appealing workplace, helping to attract skilled workers in a competitive labour market.

Digitalisation is not a cure-all solution, however, rather a tool that must be used in the right way and for the right purposes. Every customer has unique challenges and objectives, and we encourage them not to face them alone. Instead, let's work together in partnership.

Insight, analyse, improve and sustain

"We listen to customers carefully and take them through a four-step process – Insight, Analyse, Improve and Sustain – to develop a tailored programme that will help achieve sustainable improvements to their operations. This programme will involve various services according to the specific results customers are looking for, and in cases where we do not have a ready-made solution, we see it as an opportunity to brainstorm and develop a custom approach.

'Plug and play' with affordable subscriptions

"That does not mean it has to be expensive, however. There is a misconception that digitalisation is only affordable for those who can put a six or seven-



digit budget behind it, but we are challenging and changing this paradigm. The fact that our solutions are subscription based allows customers to start with any budget without the need for huge upfront investments. Indeed, we would recommend that customers start small and make adjustments on the go, rather than trying to make the perfect plan for digitalisation and never taking action.

"To make it even easier for quarry operators, we have developed solutions that are brand agnostic. In other words, they allow customers to 'plug and play' with any machine, but naturally with wider functionality when integrated into a Volvo machine via our Co-Pilot platform. We are constantly learning with our customers, and our list of solutions will continue to grow over time.

Success stories with digital solutions

"So far, the positive feedback has been a great source of motivation for us. One customer, who adopted our Performance Indicator and Connected

Andrey Komov, Head of Productivity, Region International, Volvo Construction Equipment.



Performance Indicator visualises operations on clear dashboards to be forewarned of any production or operational issues and make timely, data-driven decisions.

Map technologies, reported saving four hours per week on reduced administration time. This translates to 208 hours per year or 26 working days of management time.

“Meanwhile, several customers who have implemented our Connected

Map technology have reported increased operator awareness of vehicle traffic flow. Operators can now slow down when they see a line forming to be loaded by an excavator, instead of rushing to the spot and waiting. This, combined with speed zone implementation, has led to a positive effect on fuel consumption. Obviously, the best results can be achieved by sufficient on-site connectivity.

“Furthermore, by conducting site optimisation work, we can analyse cycle data from a customer’s operations and help them identify improvement potential. In one instance, we noted a long wait time for truck loading and dumping. Further investigation revealed that the wheel loader operator was not working efficiently, causing loading to take an excessive amount of time. By creating a digital twin of the site, we were able to analyse the impact of process changes and concluded that the customer could reduce cost per tonne by 18% with minor changes in their cycle time

Operator training from Volvo was recommended as one of the next steps.

Partnering for a sustainable future

“Your competitors will inevitably join this transformation sooner or later, if they haven’t already. Starting early may present challenges, but being late could be devastating for your business. We are eager to assist you in this journey as it aligns with our purpose of making this world a better place to live in. By collaborating with our customers, we can increase their efficiency and contribute to society’s sustainable development by reducing the carbon footprint and improving resource utilisation – always with people’s health, safety, and well-being at the forefront of our actions. This is why we drive innovation and work closely with our customers to create a world that is cleaner, safer, and more connected, every day.” ●

AFRIMAT CONSTRUCTION INDEX SHOWS POSITIVE REAL GROWTH IN SECOND QUARTER OF 2023

Afrimat, the JSE-listed mid-tier mining and materials company providing construction materials, industrial minerals, bulk commodities and future materials and metals, has released the findings of the Afrimat Construction Index (ACI) for the second quarter of 2023. The ACI, a composite index of the level of activity within the building and construction sectors, is compiled for Afrimat by economist Dr Roelof Botha.

According to Botha, the resilience of the economy during the second quarter of the year has been showcased by the construction sector, with eight of the nine constituent indicators of the ACI recording positive real growth rates compared to the first quarter of the year. “For the crucially important indicator of job creation, it is encouraging to note that construction took the honours on a quarter-on-quarter basis, adding more than 100 000 jobs and outperforming all other sectors of the economy, including those with much higher employment levels.”

The ACI recorded a level of 115.4 in the second quarter compared to 109.1 in the previous quarter.

“The quarter-on-quarter increase of 5,8% is higher than the increase in the country’s GDP and is a welcome improvement on the decline recorded in the first quarter. Unfortunately, the year-on-year increase was less than one percent, signalling the dire need for macro-economic policies aimed at encouraging the further expansion of construction activity in the country,” Botha added.

Over and above the sterling performance of new job creation in the construction sector, other highlights were the positive real growth in the category “Wholesale Sales Values of Construction



Materials”, the rebound in the “Value of Building Plans Passed”, and the increase in “Volume Of Building Materials Produced”.

“It should be pointed out that the construction sector component of GDP only includes the value added by contractors, whilst the ACI is based on a composite index of construction sector activity that includes another eight indicators, all of which are measured in real terms, i.e., adjusted for inflation. The ACI is therefore a very comprehensive barometer of the state of the construction sector.”

Botha explained that the results

of the ACI in the second quarter are especially encouraging against the background of very high interest rates and a generally subdued macro-economic environment. “The positive trend has been influenced by the increase in the public sector’s spending on capital formation, which will hopefully continue and gather momentum over the next couple of years, as the damage done to the country’s infrastructure by state capture is addressed.”

He believes that the lethargy in the year-on-year performance of construction sector activity is, in

the main, the result of the South African Reserve Bank's hawkish monetary policy, which has resulted in the highest interest rates in 15 years. "Hopefully, interest rates will be lowered before the end of the year, which will go a long way to restoring consumer confidence and to lower the costs of construction-related projects, which are essential for the quest to restore the quality of the country's infrastructure.

Botha further noted that a new-found urgency is emerging within government on the dire state of South Africa's infrastructure, which promises to breathe some life into construction sector activity. "It is encouraging to witness evidence of closer cooperation between government and the private sector in the identification and design of crucial interventions to upgrade roads, harbours, freight railways and electricity supply."

Afrimat's CEO, Andries van Heerden, said that the Group remains exceptionally well positioned through a conscious and strategic strategy that diversifies between commodities and revenue streams. "Combined with stringent capital allocation, this enables us to weather economic and commodity shocks."

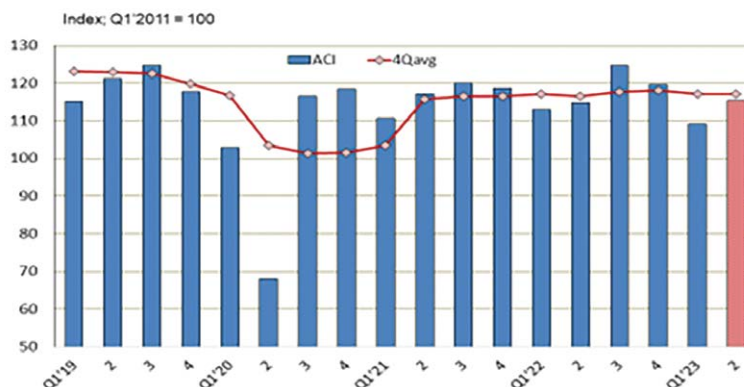
The Group has built a diverse portfolio of mature businesses, while also investing in new projects, establishing green fields operations, and underpinning operations with efficiency projects. "For most of the 2023 calendar year and in the period under review, we have heavily invested in projects that are expected to yield fruitful returns and further strengthen our diversity and competitive advantage in the future. Afrimat's successes are achieved on the foundation of a strong company culture, underpinned by achieving excellent results with integrity, and a solid, diversified growth platform."

Strategic projects such as the Jenkins iron ore mine, Nkomati anthracite mine and Glenover are

**% Change in the constituent indicators of the ACI (quarter-on-quarter and year-on-year)
2nd quarter 2023**

Indicator	% q-o-q	% y-o-y
Employment in Construction	8,6	10,8
Wholesale Construction Trade	8,5	10,5
Construction Value Added	-6,3	4
Building Materials (Sales)	5,8	-1,5
Retail Trade Sales – Hardware	2,9	-2,1
Building Materials (Volume)	3,7	-2,8
Building Plans Passed (Value)	18,8	-3,4
Salaries & Wages – Construction	0,4	-3,8
Buildings Completed (Value)	3,7	-33,2
Afrimat Construction Index	5,8	0,6
Real GDP	4,7	-0,1

Afrimat Construction Index (ACI) – 2nd quarter 2023



all progressing very well.

In the Construction Materials segment, the exciting acquisition of Lafarge South Africa Holdings will add several well-positioned and resourced aggregate quarries, ready-mix batching plants, an integrated cement plant, cement grinding plants, cement depots, and high-quality fly-ash sources – an important extender in the cement industry.

"Fortuitously, the Construction Materials segment is experiencing a pickup in activity with concurrent demand for products in roads, building and infrastructure projects across South Africa, which aligns with the results portrayed in this quarter's ACI data. This, together with a sharp commercial strategy and efficiency

drives we have in place, ensures that even a small volume increase can leverage a satisfactory performance. Again, this speaks to the way in which Afrimat does business – as a low-cost, efficiency-focused, and diversified producer," van Heerden said.

He concluded by saying that the integration of the Lafarge operations, once all conditions precedent have been met, will be critical to supporting the Group's ongoing growth: "This deal forms part of our ongoing diversification strategy and will increase Afrimat's offering in the construction industry by expanding our quarry and ready-mix operations nationally, as well as allow us to enter the cement value chain competitively." ●

ASTECS GT205 SCREENING BEAST EXCEEDS THE EXPECTATIONS OF CLIENT LIZAROX

The first Astec mobile track unit supplied in South Africa, an Astec GT205 three-deck mobile screen, has been successfully commissioned by Astec Industries for long-standing customer Lizarox.

Installed at a leading quarry in Ladysmith, KwaZulu-Natal, the Astec Global Track machine boasts a 600 tph capacity. It has proved itself more than up to the task since it was delivered, says Lizarox director Michael Crackett, who describes the massive unit as “a beast”.

This screen is operating in line with an Osborn mobile jaw and cone crusher that were supplied to Lizarox six years ago. The three-deck mobile unit is fitted with a 5 x 20 screen and a Caterpillar C4.4 129 HP Tier III diesel engine.

Crackett says that Lizarox chose the Astec GT205 because the screen is robust, and its operation is straightforward. “Certain competitor products are unnecessarily complicated. The maintenance of some equipment is difficult as a result of the logistics challenges experienced globally since the COVID-19 crisis. With the Astec GT205, we felt that we had a degree of independence if we needed to run repairs amid any supply challenges as we are familiar with the major components used to drive the machine.”

He explains that this screen complements the existing plant mix and will be used in a two-stage and multi-stage crushing and screening application for the production of layer works materials such as G5 and G2, as well as single size aggregates for use in concrete and asphalt.

Lizarox also favoured the GT205's large screen box. “This enables the production of high volumes of material when producing



GT205 Mobile Screening Plant on site in KwaZulu-Natal.

straightforward products such as G5. But, with the three-deck four-product conveyor setup, there is also an element of finesse available when coupled with the height and angle adjustable screen box. This functionality allows us to maximise high quality low yield products such as 7 and 10 mm surfacing stone,” Crackett states.

Astec Industries' long standing relationship with Lizarox is founded on consistently reliable products and service, he says. “Astec's backup on our existing equipment has always been excellent. When faced with challenges in the past, they always stepped up to the plate. This remains the case today and provides us with a sense of comfort that we

”

A large range of media provides flexibility for a variety of applications. Pair that with the flexibility and mobility of the track unit and producers can quickly and easily produce the material they need.

From left: Ian Brink (Contracts Manager), Casper Booyse (Astec South Africa product Sales Manager) and Lizarox Director, Michael Crackett.



are in good hands when it comes to product reliability and backup service. We are excited about Astec Industries' range of products and hope to expand our current plant mix with more Astec products," Crackett concludes.

Commenting on the partnership, Astec Industries Regional Sales Manager Casper Booyse says: "We are delighted to add this latest successful undertaking to our long partnership with Lizarox, a solutions-oriented company with a wealth of knowledge. We look forward to continuing to partner with them, and helping them to attain profitable production goals, valued benefits and deliver a competitive advantage to their clients through our innovative, world-class equipment."

Astec mobile incline screen plants have an array of features for maximum screening efficiency and production. Booyse expands: "These plants combine heavy-duty screens with industry-leading conveyor heights for maximum stockpile capacity. A large range of media provides flexibility for a variety of applications. Pair that with the flexibility and mobility of the track unit and producers can quickly and easily produce the material they need." ●

KEY TAKEAWAYS



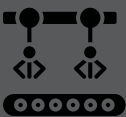
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A large range of media provides flexibility for a variety of applications. Combined with the flexibility and mobility of the track unit, producers can quickly and easily produce the material they need.



Over the years, BME has responded to the mining industry's growing need for technical blasting solutions and related technology

SUSTAINABILITY, INNOVATION KEY TO BME SUCCESS AS OMNIA TURNS 70

The legacy of JSE-listed Omnia, now in its 70th year, continues to underpin the values and potential of its mining division company BME – as the companies innovate together to reduce environmental impacts such as carbon emissions. **Modern Quarrying** publishing this report.

Formed in 1984 as the Southern African pioneer in cold emulsion technology, BME is now one of the largest explosives and blasting solutions suppliers in Africa, according to BME Managing Director, Ralf Hennecke. It became part of the Omnia group in 1987, with a close alignment to Omnia's values – including a focus on being impactful, Afro-centric, transformative and sustainable.

"Beyond our quality emulsions, we have also responded to the mining industry's growing need for technical blasting solutions and related technology," said Hennecke. In line with Omnia's commitment to sustainable growth through innovation, BME acquired Blastinfo in 1995 – accelerating its journey to becoming a leader in specialised technical solutions. In 2003, it also expanded into the field of electronic detonators, going on to produce its own local range that was regarded as one of the best on the market.

Lower carbon future

With a global reputation built on almost four decades of continuous technological innovation, BME is now part of an exciting strategic partnership with

Swedish-based Hypex Bio Explosives Technology. Omnia has taken a minority stake in Hypex, which has developed the first non-nitrate explosive emulsions in the market and reduced the carbon content by 90% over traditional sources.

According to Omnia CEO Seelan Gobalsamy, this technology has the potential to completely change the explosives supply industry. The Hypex collaboration also aligns with Omnia's sustainability and high-growth objectives, including the reduction of pollution and carbon dioxide emissions.

The Hypex stake will help BME further improve the environmental impact of its emulsions, in line with Omnia's purpose of "innovating to enhance life" and "together creating a greener future". Hypex is considered to be the forefront of sustainable civil explosives solutions and has developed a ground-breaking emulsion using hydrogen peroxide.

The step will also contribute to BME's international expansion into markets where environmental, social and governance (ESG) requirements are stringent. Hennecke highlighted that the company's globalisation strategy is optimally aligned to the sustainable, nitrate-free emulsion technology offered by Hypex.

BME has designed and produced its own electronic initiation system, with its current flagship branded as AXXIS Titanium and AXXIS Silver.



BME MD Ralf Hennecke.

KEY TAKEAWAYS



With a global reputation built on almost four decades of continuous technological innovation, BME is now part of an exciting strategic partnership with Swedish-based Hypex Bio Explosives Technology.



The Hypex stake will help BME further improve the environmental impact of its emulsions, in line with Omnia's purpose of "innovating to enhance life" and "together creating a greener future".



BME's culture has been built around a passion and commitment to delivering high-quality products and solutions to customers.



Embracing the digital technologies of the Fourth Industrial Revolution, BME has developed its own range of digital tools for blasting.

"This will contribute to our commitment to a lower carbon future, along with our other initiatives such as the incorporation of used oil as a fuel agent in our emulsion products," he said. BME's closely controlled system of collecting, storing, treating and testing this used oil removes the risk of it potentially contaminating water or land. The collection of used oil is a valuable service to customers and other sources, while creating business opportunities

for small businesses in local economies around mines.

Supply security key

Hennecke said that BME's culture – in common with the Omnia group – has been built around a passion and commitment to delivering high-quality products and solutions to customers. At the level of operations, Omnia's extensive investment in chemical plants has underpinned BME's secure and safe supply chain. The

ready availability of chemicals has been a key aspect of this security, through Omnia's nitrophosphate and calcium nitrate (Omnical) plants, as well as its investment in a porous granular ammonium nitrate plant 10 years ago.

Evolving blasting technology

With a growing depth of expertise within the business, it was soon able to design and produce its own electronic initiation system – AXXIS – which has since become a household name in the African mining sector. As a success story on its own, the AXXIS system has continuously evolved and improved, with its current flagship branded as AXXIS Titanium.

Embracing the digital technologies of the Fourth Industrial Revolution, BME has developed its own range of digital tools for blasting. These include the blast planning software BlastMap, blast logging system Xplolog, and the Blasting Guide mobile application for Android devices. With Xplolog and Xplocharge fitted to BME's smart mobile manufacturing units (MMUs), data on the bulk emulsion that is being loaded into blastholes can be uploaded and shared in real time.

"Integrating these digital tools into our Blast Alliance portfolio, we have enhanced customers' ability to design quality blasts and to accurately predict blast results," said Hennecke. "They also facilitate better reporting on each blast, and the gathering of blast data in real time." ●

HIGH DRILLING COSTS DOWN WITH THE ALL-NEW FURUKAWA HCRL100-E3 HYDRAULIC CRAWLER DRILL HAMMER

Japanese master manufacturer, Furukawa Rock Drills (FRD), has released an all-new crawler drill to drive down the cost of drilling in southern Africa. FRD has customised a cost effective and economical drill rig, developed especially for local operating conditions.

The new FRD HCRL100-E3 is an evolution of the well renowned FRD HCR 1500 ED-II model which has become a mainstay of mines, quarries and construction contractors across the region. This wide raft of changes was brought through operational input and feedback from its longtime distribution partner, ELB Equipment.

The company's national product manager, James Linton, says the latest adaptations are the culmination of decades of successful operations in the field, in Africa, that has allowed the manufacturer to continue fine-tuning its operation for even better performance, speed and cost per metre drilled. "It's a tough ask to improve on one of the most successful drill ranges in the industry but one that FRD has accomplished with the assistance from our customers' feedback and experiences."

More power

He elaborates that at first glance the FRD HCRL100-E3 has a more powerful 280 kW engine and larger compressor to enable better efficiency at reduced RPM with its new Super Economy Mode that only uses power when it is needed with automatic throttle control and idling plus compressor low-pressure standby. This reduces fuel consumption by up to 8,5% and enables more power to be directed towards increased speed and more metres drilled per shift with bits up to 127 mm diameter.

"If you need power it's got that in spadefuls but with its Intelligent Drilling System (IDS) engaged it will only use as much as is needed to save fuel and minimise unnecessary wear and tear on the system. This also contributes to its already legendary Japanese reliability and ease of operation. Like all FRD equipment the clever engineering is done upfront at the design stages so that operators are not saddled with unnecessary, complicated machines that need highly specialised staff to maintain and repair. FRD achieves the same or better results with less complex mechanical and electrical systems on board. In African conditions this is a heaven sent as it means the machine can be maintained and kept productive with minimal outside assistance and is one of the key objectives of FRD, which is one of the world's most respected drill rig manufacturers.



It's a tough ask to improve on one of the most successful drill ranges in the industry but one that FRD has accomplished with the assistance from our customers' feedback and experiences.

Drilling specifications

Dimensions & Weight	Operating weight	17 370 kg
	Overall length	10 210 mm
	Overall width	4 055 mm
	Overall height	3 465 mm
Drifter	Model	HD715
	Weight (with Reverse Percussion)	269 kg
	Impact rate	2 250-2 500 min ⁻¹
	Rotation speed	0-150 min ⁻¹
Rod Changer	Model	GR802
	Rod diameter	T51
	Number of rod storage	6
	Rod Length	3660 mm
Rod & Bit	Bit range	90-127 mm
	Rod diameter	T51
	Rod length	3 660 mm
	Maximum starter rod length	4 270 mm



KEY TAKEAWAYS



The FRD HCRL100-E3 has a more powerful 280 kW engine and larger compressor to enable better efficiency at reduced RPM with its new Super Economy Mode.



With the Intelligent Drilling System (IDS) engaged it will only use as much power as is needed to save fuel and minimise unnecessary wear and tear on the system.



The cab is ergonomically designed to provide the operators with a productive workspace with air conditioning and other comfort features allowing the operator to remain alert and productive throughout.



FRD achieves the same or better results with less complex mechanical and electrical systems on board.

Simply brilliant

"It's simplicity runs all the way to the controls and cab that gives operators a commanding view of every parameter of the operation in progress, with smart controls complemented by inputs from the IDS system. The cab is ergonomically designed to provide the operators with a productive workspace with air conditioning and other comfort features allowing the operator to remain alert and productive throughout, while safety features are in line with local requirements," says James.

He concludes that the efforts in designing the ultimate crawler drill rig resulted in the FRD HCRL100-E3 and culminated in a rig that is tough, reliable and made available to the market at a price that is affordable and right for the market it serves. Yet, its main selling point is bound to be its high productivity rate and unmatched reliability in tough conditions. FRD drills simply cannot be beaten in that regard he says. ●

Pilot Crushtec continues to invest in the multiskilling of their technicians to enable them to diagnose and set up machines quickly and safely.



THE IMPORTANCE OF SKILLED CUSTOMER SUPPORT TECHNICIANS IN CRUSHING AND SCREENING

Crushing and screening on mines and quarries often entails 24/7 operations where downtime is out of the question. The importance of skilled customer support technicians in maintaining high machine uptime cannot therefore be stressed enough, states Jorge Abelho, Director Technical Support at Pilot Crushtec International.

"Given that South Africa is a major global producer of several minerals such as gold, platinum group metals (PGMs), chrome and manganese, amongst others, it is vital that the crushing and screening sector plays its part in keeping the industry running smoothly," Abelho says. "Skilled customer support technicians are therefore a non-negotiable in crushing and screening operations."

Given that these Pilot Crushtec individuals spend most of their time at different sites and environments, customer support technicians

develop profound knowledge of machines and applications. Crushing and screening customers, says Abelho, should therefore tap into this knowledge bank for advice on equipment setup, operation and efficient maintenance. This helps minimise equipment failures and subsequent downtime which, by its very nature, is costly.

With the crushing and screening industry constantly evolving on the back of advancements in technology, Pilot Crushtec invests heavily in training to keep its customer support technicians up to date with the latest equipment and industry trends.



Pilot Crushtec is committed to its clients, offering 24/7 aftermarket support to ensure minimum downtime.

KEY TAKEAWAYS



It is vital that the crushing and screening sector plays its part in keeping the industry running smoothly.



Customer support technicians have profound knowledge of machines and applications.



Pilot Crushtec invests heavily in training to keep its customer support technicians up to date with the latest equipment and industry trends.

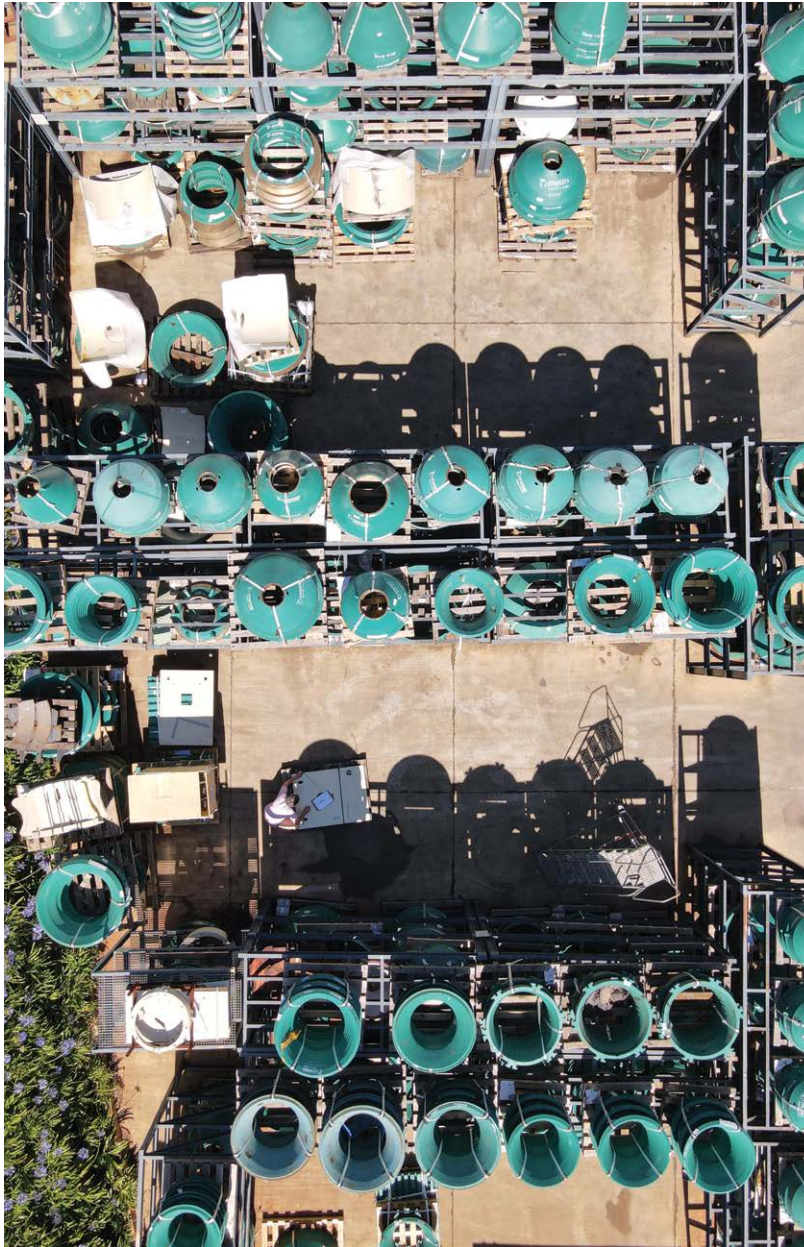


Pilot Crushtec invests in the multiskilling of our technicians to enable them to diagnose and set up machines quickly and safely.

“As machines get more complex incorporating more automation, onboard diagnostics and remote telemetry solutions, we continue to invest in the multiskilling of our technicians to enable them to diagnose and set up machines quickly and safely,” he says. “This builds trust with our customers knowing that we can deliver and support our equipment. Our customers, both experienced and inexperienced, appreciate this level of technical expertise and that in turn has been key to the growth of our business.”

“In my opinion, the starting point is training. We have developed a very detailed training matrix for the customer support team – a live document which we update on a monthly basis. Our Corrective Action Request (CAR) is also an engrained process in the organisation that often provides input into our training matrix,” Abelho explains.

Pilot Crushtec’s matrix



Pilot Crushtec is one of the leading after-market genuine OEM parts suppliers across Africa that stocks over 93 000 wear and spare parts.



Pilot Crushtec invests heavily in training to keep its customer support technicians up to date with the latest equipment and industry trends.



Jorge Abelho, Director Technical Support at Pilot Crushtec.

identifies training requirements within the customer support team, indicates which individuals are being trained and which technicians are already competent. The company also conducts formal weekly training sessions, which vary from a formal structural training session to less formal discussions about an activity or experience gained during the week.

In addition, as the Southern Africa distributor for Metso crushing and screening equipment, Pilot Crushtec has access to this global player's online eLearning portal with well over 100 courses. The goal is to get RICO certification for every Pilot Crushtec customer support technician, which takes about a year to acquire and requires a formal assessment by a Metso engineer.

While training presents a prime opportunity to expand the knowledge base of field service technicians, it is, however, not cheap – it takes time and money to develop technical skills. Given the dearth of these skills in the industry, Abelho notes that it is a challenge to retain skilled technical people as they are in great demand globally.

“Some years ago, we had to come to terms with the fact that there is a massive technical skills shortage in the country and the world at large. Instead of moaning about it, we decided to be part of the solution. We therefore invest in a training



The Pilot Crushtec skills development programme plays an important role in developing the talent pipeline.

programme for university of technology students which has, over the years, provided us with a sustainable pipeline of technical skills," he says.

During the past 13 years, more than 70 engineering students have gone through the practical phases of their mechanical and electrical engineering studies at Pilot Crushtec's Jet Park, Gauteng facility. The programme

plays a critical role in developing Pilot Crushtec's talent pipeline and is also a deliberate effort to foster skills development and transformation in the engineering and mining sector as a whole.

"About 10 of these graduates were permanently employed by Pilot Crushtec after demonstrating an in-depth understanding of our products' mechanics, electronics,

performance and maintenance. For these efforts, Pilot Crushtec has received the coveted Employer Excellence Award from KwaZulu-Natal-based Mangosuthu University of Technology for the practical support it continues to give to engineering students, which is testimony to our efforts to plug the technical skills gap in the country," concludes Abelho. ●

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POWERBIT ROCKTOOLS: THE TRUTH ABOUT TRICONE

Africa – a landscape where rugged terrain and challenging conditions are the norm – is a global epicentre for the oil and gas, mining and construction industries. The continent's resources yield a wealth of revenue for enterprising businesses equipped to go beneath the surface and extract vital raw materials for manufacturing, export and more.

Powerbit Rocktools – an established partner to several companies in drilling, mineral extraction and other digging pursuits – shares insight on its versatile Tricone Bit range. These remarkably flexible bits maximise efficiency and output, making them the go-to choice for a wide range of drilling needs.

The Tricone difference

Since the emergence of Tricone Bits during the Great Depression, they have become the preferred choice for everything from well

excavation projects to large-scale oil extraction operations and mining. Tricone Bits are renowned

for their versatility and ability to conquer even the most challenging rock formations. This

”

A large range of media provides flexibility for a variety of applications. Pair that with the flexibility and mobility of the track unit and producers can quickly and easily produce the material they need.

KEY TAKEAWAYS



Durability is a hallmark of Powerbit's Tricone Bits.



Tricone Bits from Powerbit can be customised with different types of teeth and materials to suit specific drilling requirements.



Powerbit's commitment to longevity doesn't stop at the purchase; it extends through the product's life.



Customisation, durability, efficiency and ongoing innovation makes Powerbit a partner of choice for drilling professionals worldwide.

adaptability, with several variants tailored to varying terrains, sets these bits apart.

Typically, Tricone Bits are categorised as either Mill Tooth bits or TCI bits (TCI representing Tungsten Carbide Insert), each suited for soft, medium or hard rock types. Selecting the right Tricone Bit varies based on a thorough understanding of the specific rock formation at hand.

Customisation for precision and staying power

Tricone Bits from Powerbit can be customised with different types of teeth and materials to suit specific drilling requirements. Durability is a hallmark of Powerbit's Tricone Bits. Designed to withstand high temperatures, abrasion and impact, these bits are built to last.

When drilling conditions are harsh and the demands are relentless, Powerbit Tricone Bits



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- Various drilling options, carbide button types
- International standard thread types
- Excellent abrasion resistance, fast drilling speed

RC Hammers and Bits:

- Achieve high drilling speed, ideal energy transfer
- Long service life, easy repairs
- Carbonised sample collection tube surfaces

Tricone Bits:

- Various drilling options, carbide button types
- International standard thread types
- Excellent abrasion resistance, fast drilling speed

Casing Systems:

- Various options available
- Hardened part surfaces for anti-wear properties
- Unmatched drilling speed and reliability



rise to the occasion, ensuring that downtime is minimised and productivity soars.

Efficiency redefined

The Tricone Bit range is distinguished by a unique design that allows for faster drilling rates compared to many other varieties of drill bits. This translates to significant time and cost savings on drilling projects, and when time is money, Powerbit's Tricone Bits deliver the advantage you need to outdo the competition.

Directional stability and control

In directional drilling applications, control and accuracy are paramount. Powerbit Tricone Bits offer proven directional stability thanks to their three-cone design. For example, with more contact points with the borehole wall, they deliver superior control, ensuring that drilling proceeds precisely as planned.

Ease of maintenance for longevity

Maintaining Tricone Bits is a breeze, and Powerbit ensures that the one-on-one support you need is always on call. The bits can be disassembled with relative ease, then quickly cleaned and reassembled with new components as required. This not only extends their lifespan but also saves on replacement costs. Powerbit's commitment to longevity doesn't stop at the purchase; it extends through the product's life.

Powerbit – the drilling partner of choice

Powerbit Rocktools has cemented its position as an industry leader by focusing consistently on quality, reliability and personalised after-sales service. Their dedication to customisation, durability, efficiency and ongoing innovation makes Powerbit a partner of choice for drilling professionals worldwide. Even when faced with the most challenging drilling operations, Powerbit Rocktools delivers the tools that empower success.

What sets Powerbit apart is its firm commitment to understanding

its customers' unique challenges, goals and needs. With over two decades of experience, Powerbit remains at the forefront of drilling technology, delivering cutting-edge products at affordable prices.

With a proven dedication to customer satisfaction and a relentless pursuit of excellence, Powerbit Rocktools continues to push the boundaries of innovation. Their mission is clear: to equip drilling businesses with the tools they need to conquer even the most formidable drilling operations efficiently and effectively.

As the industry embraces rapid technological advancements and drilling ventures into uncharted territories, the demand for robust and dependable rock drilling tools has never been greater. In the face of extreme and challenging environments, businesses need cost-effective and reliable solutions they can trust.

Since 1996, Powerbit has been a prominent figure in the southern African mining industry, known for servicing the unique demands of drilling-related sectors with an unyielding commitment to excellence.

Powerbit's product range is extensive and meticulously designed to cater to diverse drilling requirements across various industries. From DTH hammers and bits to RC hammers and bits, Tricone bits, top hammer bits and rods, casing systems, grinding machines and more, each tool has a solid track record of enhancing drilling efficiency and longevity.

Powerbit believes in building long-term partnerships with its clients. The company is driven by

the importance of maintaining a dependable supply chain in the African industry, where drilling and geotechnical excavation operations are the backbone of resource extraction and optimisation, pivotal in the continent's growth and development.

Powerbit Rocktools' customer-centric approach, passion for excellence and commitment to long-lasting partnerships equip drilling businesses with the tools they need to thrive in today's challenging environments.

Experience the Powerbit difference

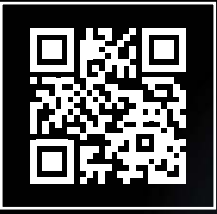
Experience the power of precision-engineered Tricone Bits and exceptional customer support by connecting with Powerbit Rocktools. Discover how these exceptional tools can transform your drilling operations, providing the efficiency, durability and precision you need to conquer even the most challenging terrains.

Contact the Powerbit Rocktools team today, and start your business's journey of progress and empowerment, knowing that you have a trusted partner by your side. ●



Since 1996, Powerbit has been a prominent figure in the southern African mining industry, known for servicing the unique demands of drilling-related sectors with an unyielding commitment to excellence.

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STORMILL'S EXPERTISE, CAPACITY UNDERPINS FLSMIDTH'S KREBS® BRAND

With its large installed base of KREBS® products, FLSmidth's Stormill facility west of Johannesburg is providing the platform for technology evolution and market expansion.

There are over 4 000 units of equipment from KREBS® pump, cyclone and valve ranges installed around its Sub-Saharan Africa, Middle East & South Asia (SSAMESA) region. FLSmidth's pure play mining strategy sees the regions taking these solutions to the market, supported by resources in countries across the globe.

Deon de Kock, FLSmidth's President for SSAMESA, highlights the Stormill plant's key role in the success of the KREBS

range – not just in the region but globally. The facility conducts remanufacturing, rebuilding and product assembly, as well as service exchange and testing.

It also stores a large inventory of stock worth over R250 million, ensuring quick lead times for spares and components. Aligned with FLSmidth's CORE'26 strategy, the ongoing technological improvements focus on achieving a sustainable future by prioritising efficiency.

According to Stephan Kruger, Vice President Pumps, Cyclones & Valves at FLSmidth, the KREBS®

range undergoes continuous innovation through a large variety of research and development projects.

"In the KREBS centrifugal and slurry pumps, for instance, our developments include the patented wear ring technology," he says. "This eliminates grinding and reduces recirculation – boosting pump life and saving on energy."

Users can save up to 10% of energy consumed, and the wet end components of the pump can have their life extended by 50 to 100%. By needing to be replaced less often, there is the added benefit of less scrap being generated.

In the KREBS® cyclone range, he notes that the gMAX® hydrocyclone outlasts competitor products. With its enhanced inlet head geometry and best-in-class material options, it achieves sharper separation and reduces coarse bypass solids in the overflow.

"This gives customers better recoveries and reduces their risk of unscheduled downtime due to maintenance," he explains. "Smart technology allows accurate remote monitoring of performance, which has saved customers up to \$250,000 per million tonnes produced."

In the valve range, he highlights the KREBS® Technequip™ knife gate slurry valve as a premium heavy duty product. A bi-directional slurry valve with full flanged body and rubber sleeves provides a reliable seal and eliminates downstream leakage.

"As with our KREBS pumps and cyclones, we offer our valves in a wide selection of materials from high chrome alloys to stainless steel," he says. "Our exciting designs also include the incorporation of elastomers, ranging from natural rubbers, polyurethane and neoprene."

The performance and monitoring of the large installed base of KREBS® equipment is vital in FLSmidth's pioneering of improved technologies, adds Kruger. "We can gather real time information from our installation sites, and this guides the focus of our product development," he says. ●



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THE SUCCESS STORY OF **BRAUTESETH BLASTING**

Brauteseth Blasting, a KwaZulu-Natal-based drilling and blasting company, has established itself as a leader in the industry. The company has experienced rapid growth and expanded its operations throughout South Africa and beyond.

From local success to national footprint

Founded in 1983 by John H Brauteseth, Brauteseth Blasting initially focused on civil engineering and quarrying projects in the KwaZulu-Natal and Eastern Cape regions. With Clive Brauteseth taking over the company in 1989, Brauteseth Blasting entered the commercial quarry market, further solidifying its position as a leading player in the industry. The company's commitment to delivering quality work and meeting increasing demand led to rapid expansion. Soon, Brauteseth Blasting established its footprint across South Africa, taking on projects in regions like Limpopo and Northern Cape. The company's dedication to excellence and customer satisfaction propelled its growth and reputation throughout Southern Africa.

Embracing new technology for enhanced performance

One of the key factors behind Brauteseth Blasting's success is its constant drive to embrace new technology and innovation. The company recognises the importance of staying ahead of the curve to deliver optimal results for its clients. By closely following advancements in drilling equipment, Brauteseth Blasting ensures it can leverage the latest technology to enhance its fleet capability and meet customer expectations. This commitment to innovation allows the company to maintain its position as an industry leader and deliver cutting-edge drilling and blasting solutions.



KEY TAKEAWAYS



Brauteseth Blasting established its footprint across South Africa, taking on projects in regions like Limpopo and Northern Cape. The company's dedication to excellence and customer satisfaction propelled its growth and reputation throughout Southern Africa.



By investing in the best equipment available in the market and following preventive maintenance programmes, Brauteseth Blasting ensures high performance, reliability, and uptime for its projects.



The company emphasises strict adherence to health and safety regulations, ensuring a safe working environment for its employees and clients. Sandvik drill rigs play a crucial role in this regard, with their advanced dust control features and quiet cabs that improve operator comfort and productivity.



We invest in the multiskilling of our technicians to enable them to diagnose and set up machines quickly and safely

A commitment to safety and environmental responsibility

Safety is a top priority for Brauteseth Blasting. The company emphasises strict adherence to health and safety regulations, ensuring a safe working environment for its employees and clients. Sandvik drill rigs play a crucial role in this regard, with their advanced dust control features and quiet cabs that improve operator comfort and productivity. Brauteseth Blasting's commitment to safety extends beyond its workforce to the environment. The company takes measures to minimise its environmental impact during drilling and blasting operations, ensuring sustainable practices are followed.

Maintaining high equipment standards

Brauteseth Blasting takes pride in its equipment, considering it one of the key factors behind its success.



The company places a strong emphasis on regular maintenance and keeping its fleet up to date. By investing in the best equipment available in the market and following preventive maintenance programmes, Brauteseth Blasting ensures high performance, reliability, and uptime for its projects. The company's dedication to maintaining high equipment standards translates into efficient and effective drilling and blasting operations, providing clients with exceptional results.

Investing in people and skills
Brauteseth Blasting recognises the importance of skilled and dedicated teams in delivering

exceptional service. The company places great value on its employees, many of whom have been with the company for over two decades. Continuous training and upskilling programmes are integral to Brauteseth Blasting's operations which enable its teams to stay updated with the latest technology and industry best practices, empowering its employees to provide the highest level of service to clients.

Looking ahead: a bright future
With its strong focus on technological advancement, and a commitment to safety and reliability, Brauteseth Blasting is poised for continued success.

While the company is celebrating its 50th drill rig acquisition, the company's growth trajectory is accelerated with plans for further drill rig acquisitions in 2023. Brauteseth Blasting remains dedicated to providing industry-leading drilling and blasting solutions, meeting the evolving needs of its clients and maintaining its position as a trusted name in the industry. As Brauteseth Blasting continues to expand its operations and embrace new technologies, it is well-positioned to shape the future of the drilling and blasting industry, providing innovative solutions and delivering exceptional results. ●

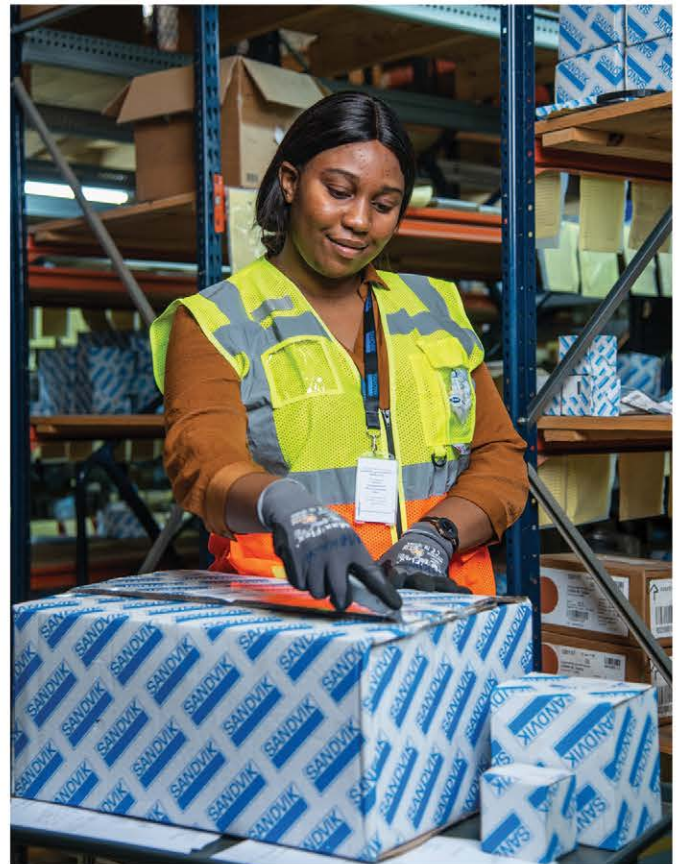
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Return roller guards ensure detached rollers don't pose a hazard to workers or harm the system.

GUARDING BY LOCATION: DANGER AND COMPLIANCE

The global leader in conveyor safety is disputing the idea that putting conveyor equipment out of reach or inconveniently placed away from workers - known as "Guarding by Location" - is a valid form of safety. After decades of safe equipment design and comprehensive conveyor safety training in the bulk handling industry, Martin Engineering experts have witnessed individuals where "guarding by location" has led to a lapse in workplace safety, resulting in injuries and - in some cases zero fatalities.

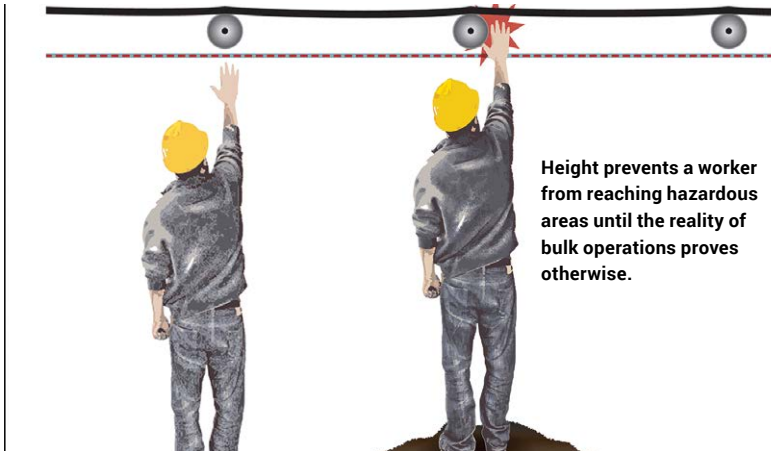
Most people readily accept that conveyors and other machinery require safety guards when positioned near workers or walkways. "Guarding by location" is the assumption that when hazards, such as moving conveyor belts, are positioned beyond the normal reach of a worker they don't require a guard. Yet they can still present a serious hazard.

Worker risks from guarding by location

Some regulations define a general safe height

for components based on the average height of workers. This means taller employees (1,82 m or more) can easily suffer an injury reaching up into a moving component that is 213 m above the ground. Working above machinery that is considered guarded by location exposes workers to increased severity of injury if they slip or fall to a lower level.

Most regulations do not account for the potential buildup of spillage underneath the conveyor or in walkways, which can easily change the distance between the working surface and a hazard. It's



Height prevents a worker from reaching hazardous areas until the reality of bulk operations proves otherwise.



Unguarded return rollers over walkways can fall and produce a serious hazard.



All images copyright © 2023 Martin Engineering

All moving or rotating components should be guarded, regardless of location.

also fairly common practice to purposely collect a pile of material or fill a bin to gain access for service or inspection of an elevated component. Using tools and methods that extend a worker's reach while the belt is running is a hazardous activity that can contribute to serious - and possibly fatal - accidents.

Hazards from above

By not requiring a physical barrier, guarding by location creates what is considered by some to be an exception to the general requirements for the guarding of hazards in the workplace. Several hazardous locations are beyond the normal reach of staff when working or walking under or around elevated conveyors. These hazards are commonly found in or around nip points between the belt and return rollers or drive components such as pulley shafts, couplings, drive belts,

gears and chains. Additional hazards from falling components may be inadvertently ignored if considered guarded by location.

Guarding best practices

The logical solution to guarding by location is to simply install guards and baskets to protect workers from lateral and overhead hazards, while still offering safe and easy access. For maximum risk reduction, all nip points, shear points and moving or rotating components should be guarded, regardless of location or access.

However, there is also no global standard for guard mesh sizes and mounting distance from the hazard. Most standards use a gauge to measure the distance which varies by mesh size. When a bulk material handling guard is placed relatively close to a hazard it greatly reduces the ability to inspect components without removing the guard, thereby

encouraging guard removal for routine inspections.

It would be far better (and safer) to standardise on a few mesh sizes and mounting distances allowing maintenance workers to build guards to a short list of materials, using standard mounting distances and eliminating the use of the gauges. Below is the recommendation included in Martin Engineering's book FOUNDATIONS for Conveyor Safety.

Put an end to the myth

Despite its nearly global acceptance as a concept in industrial safety, the practice of guarding by location remains a particular problem for overhead conveyor applications. It's time to accept that as far as conveyors are concerned, 'guarding by location' is a myth. As such, it's a concept that should be abandoned in order to make conveyors - and those who work on and around the equipment - safer. ●

QUARRIES ARE BLASTING SMARTER WITH BME'S AXXIS SILVER

As demand for aggregates and other quarry material looks set to rise, quarries are embracing the safety and performance improvements of BME's latest generation electronic detonation system – AXXIS Silver.

The slimmer version of the flagship AXXIS Titanium system but retaining all the key features, AXXIS Silver is ideal for smaller operations which do not require the detonation of large blasts with thousands of detonators. BME Manager AXXIS Support Hennie du Preez emphasised the ease of use, on-bench logging and optimal fragmentation as key benefits. AXXIS Silver allows one-step logging and testing of detonators, as well as the simple fault-finding and quick corrections on the blast pattern.

"Blasters find it easy to use, and really enjoy the speed at which blasts can now be fired," said Du

Preez. "After the detonators have been programmed, you can start up the controller from the Blast point and blast within three minutes.

Supporting stringent safety standards, the system makes unique use of dual capacitors and dual voltage to enhance safety. This allows blasters to conduct low voltage logging to avoid any chance of unintended detonation. Blasts can only be initiated by a robust, encrypted blast command.

Technological integration means that AXXIS links effortlessly with BME's other innovative solutions such as its Blastmap blast planning software, Xplolog platform and cloud-based storage for post-blast analysis. The system also



integrates with third-party blast planning software.

"Everything is built into the logger, which can now do the programming, scanning and testing," said Du Preez. ●

QUALITY IS WATCHWORD FOR VIPERDET™ DETONATORS

As demand for aggregates and other quarry material looks set to rise, quarries are embracing the safety and performance improvements of BME's latest generation electronic detonation system – AXXIS Silver.

Omnia mining segment BME has introduced an improved version of its non-electric detonator product range into the quarrying sector. The VIPERDET™ MS Series boasts quality and reliability leveraged from automated production lines and a certified supply chain.

"We have over the years invested considerably in our production technology, giving us automated processes that enhance safety, sustainability and efficiency to reliably deliver a world class product," said Nishen Hariparsad, General Manager (Technology and Innovation) at BME.

Hariparsad highlighted that this high level of automation was a significant differentiator for the company, as most competitors relied on manual production lines. The result was that Omnia's mining division was able to achieve consistency in detonator quality, enhanced production flexibility, less waste and reduced environmental impact. The company's production facilities at Losberg and Dryden were also powered by renewable energy to prioritise sustainability and operational continuity.

"BME always strives to be at the forefront of technology and brings innovative and cutting-edge

mining solutions that deliver best blasting and fragmentation outcomes," he said. "This has underpinned the launch of the VIPERDET™ MS Series – which includes downhole, trunkline and dual detonators. With its timing accuracy, flexibility and user-friendly design, we believe this range will offer great customer experience and deliver optimal blasting results."

Dr Rakhi Pathak, BME's global product manager, noted that the design included a triple-layered shock tube designed to provide high tensile strength and prevent any damage during normal operating conditions. ●



L3180 SMART SCALE

When the pressure is on and customers are waiting, you need to perform faster without compromising accuracy and precision. The L3180 SmartScale for wheel loaders adjusts for rough terrain, technique, and movement so new and skilled operators can load with greater accuracy, precision, and speed.

A SmartScale uses weighing intelligence for more accurate, precise, and faster loading. It also connects machines and devices for the collection and syncing of loading data.



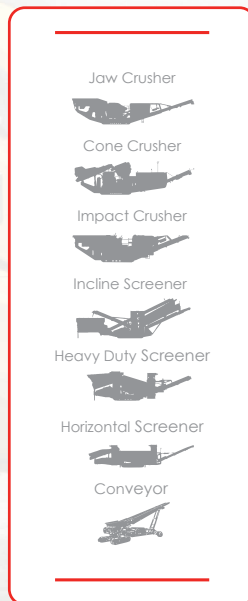
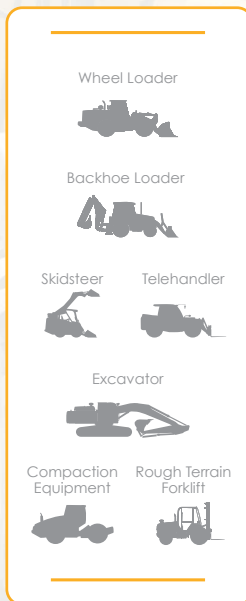
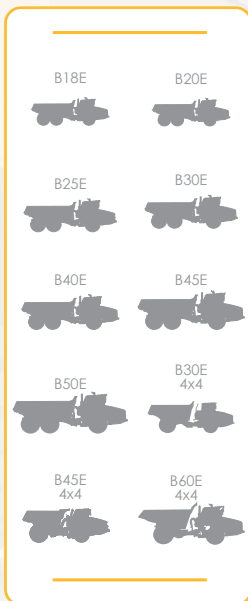
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