

# AFRICA MINING

## INSIGHT

**AFRICA'S OWN**

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AFRICA MINING INSIGHT

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**INTRODUCING OUR MACHINES**

**FOR CORE DRILLING AND MINERAL EXPLORATION**

**pg16**



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**A**frica Mining Insight is the home to the very best news, features and comprehensive overview of products suitable for both rental and user. It focuses also on technological developments across the spectrum of targeted equipment and machinery through in-depth technical articles derived from all product suppliers. Taking in everything from the latest products and techniques, to up-to-the-minute design trends and industry moulding regulations, Africa Mining Insight should be the first port of call for any professional looking to remain on the cutting edge when it comes to their or related industries.

This issue of Africa Mining Magazine tries to bring together this wide range of perspectives in mining on the continent. It is my sincere hope that you will appreciate the insights given. Our publication focuses on the developments and activities taking place in the mining sector throughout Africa. As you are aware the continent is a haven of minerals which are in demand worldwide. The diamonds of Botswana, the South African gold, Zambia is renowned for its copper and the oil of Angola, to mention just a few. Unfortunately despite its mineral wealth, Africa still lags behind in development as compared to the rest of the world.

A robust mining sector is broadly understood as a fundamental path to economic growth and development. The key boon of mining is that it absorbs large swaths of workers and places them into productive and decent paying jobs. Throughout history, this exact recipe has transformed the United States, United Kingdom, France, Japan, and Germany into some of the world's wealthiest nations.

However, this narrative seems to exclude many African nations. Despite their manufacturing potential and promising trajectories, most African countries have remained relatively dearth of factories. This limited industrial development represents a missed opportunity for economic transformation and quality employment generation that alleviates poverty. Today, leaders are increasingly realizing that the mining industry is a major factor in helping Africa to achieve its goals and successfully reaching the next stage of economic development.

In this issue; Custom mining solutions from Bühler at MTE Richards Bay, Victaulic with improving backfill efficiency, - worker safety through automation, Enhancing mining operations in Africa through intelligent fleet and asset management, GCS with the importance of a comprehensive water monitoring programme in the mining industry and many more insights.

We hope to contribute more to the development of our mining industry by consistently presenting interesting and pertinent articles to our readers. We continue to solicit and publish contributions from different mining companies to enable them to present their side of the story.

Best regards  
Victor Mutero

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# MINERAL PROCESSING - GOLD LEACHING

## PREFACE

MixPro®, part of GMM Pfaudler, has been dedicated to delivering innovative and robust agitation solutions for gold leaching and CIL applications for over 25 years. Our experience includes large installations for 18m diameter CIL/Leach tanks. At MixPro® we use our extensive experience designing, manufacturing and servicing these critical agitators around the world to help solve challenges and support our customers. Below is a case study from Canada.

## PROJECT DESCRIPTION

A slurry containing 50% by weight ore flows continuously through a series of large tanks to extract the precious metal. Both cyanide and oxygen are required for the dissolution of microscopic gold particles from finely ground ore at the gold mill. The slurry is first aerated in a pre-aeration tank without cyanide present to minimize the cyanide consumption. It then flows into the CIL, (Carbon-In-Leach), tanks where cyanide, oxygen and activated carbon are added. Once the gold is leached from the ore it is then adsorbed onto the activated carbon. The carbon loaded with the gold is screened out of the slurry and processed further to make gold bars.

## MIXPRO® CHALLENGE

To design the agitators to maximize the customer's profit. Furthermore, the customer wanted to add the pure oxygen down the agitator shaft in both the pre-aeration and CIL tanks. Most of the oxygen is added into the pre-aeration tanks. Agitation in the CIL tanks will chip the activated carbon and these fine carbon particles (loaded with gold) will not be collected by the screens that are used.

The agitators in the CIL tanks must uniformly suspend the slurry throughout the tanks, disperse the added oxygen, and uniformly distribute the activated carbon throughout the slurry. Not all the oxygen gas added into a slurry will be transferred for the various reactions which can be seen as bubbles breaking at the slurry surface. Less oxygen gas is needed to satisfy the reactions when vigorous agitation is used, though this requires more electrical power.



## RECOMMENDED SOLUTION

MixPro® calculated the cost of the oxygen gas needed and electricity for various agitator designs and justified an agitator significantly larger than was expected for the pre-aeration tanks. We recommended the smallest possible agitator for the CIL tanks to achieve slurry uniformity and minimize carbon-fines & gold losses. To simplify our customer's future maintenance, the impeller blades were made to be identical.

MixPro® also recommended that an oxygen sparger be affixed to the end of the shaft that would create small bubbles using the high pressure inherent in pure oxygen systems and were asked to provide them. MixPro® has manufactured many agitators where air is added down the shaft. However, adding pure oxygen down the shaft is much different. We researched the special requirements for pure oxygen piping and completed testing in our laboratory. The result enabled MixPro® to develop an innovative solution to safely deliver the oxygen gas below the impeller.

## PROJECT SUCCESS

After commissioning the agitators, the customer stated; "There is only one word I can say about MIXPRO® Agitators - Outstanding!". In our follow-up visits, only the smallest of bubbles, (1 mm), could be seen breaking the slurry surface.

**FOR MORE INFORMATION  
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Phone: (905) 790-5444

info@mixproagitators.com

www.mixproagitators.com

# Custom mining solutions from Bühler at MTE Richards Bay



**B**ühler is set to showcase its advanced material handling solutions at the upcoming Mining & Technical Exhibitions (MTE) Richards Bay taking place in KwaZulu Natal on 5 June 2025. The highly diversified expo reflects the MTE philosophy of catering to a wide spectrum of industries from mining and smelting to agriculture, sugar milling, forestry and paper and pulp production.

Richards Bay is home to leading industrial operations like RBM, Hillside Aluminum and KZN Sands along with sugar milling, paper production and port operations. This makes MTE Richards Bay an ideal platform for Bühler to engage directly with key industry

stakeholders and decision-makers across these interlinked sectors.

At MTE Richards Bay, Bühler will present its heavy-duty chain conveyors and high-performance forged chains engineered specifically for demanding mining environments. These systems are transporting up to 1200 metric tons per hour across spans of up to 100 metres. They are built for strength, wear resistance and longevity the result of Bühler proprietary forging and hardening processes.

What sets Bühler apart is not only the quality of its equipment but also its ability to custom-design solutions. "If you can imagine it, we can make it", says Francois Knoetze, Head of Manufacturing at Bühler

Southern Africa. "Thanks to our fully equipped manufacturing workshop at our Johannesburg head office, we work closely with customers to design and build equipment that meets their exact operational requirements."

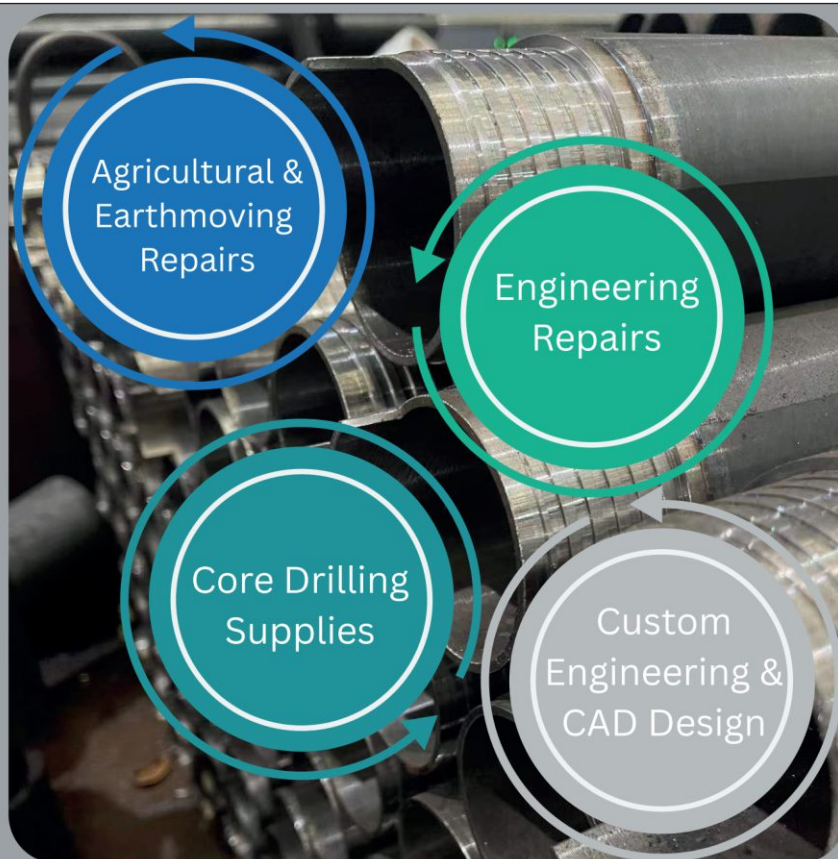
Bühler has been active in Southern Africa since 1972 and maintains a strong operational presence in Johannesburg. Its regional manufacturing facility builds and supplies precision-engineered components for both local and international markets, ensuring that customers benefit from quality, locally manufactured solutions backed by global expertise.

Bühler's enclosed conveyor systems are another key advantage, offering not only operational safety and efficiency but also

helping to reduce dust and spillage, an increasingly important consideration in environmentally sensitive mining zones. As a trusted partner to the mining sector, Bühler continues to invest in innovation and sustainability. By providing end-to-end solutions for chain and conveyor needs from design and production to installation and after-sales service, Bühler's participation at MTE Richards Bay highlights its commitment to delivering robust, sustainable and custom solutions that reduce downtime, improve safety and performance.



[www.buhlergroup.com](http://www.buhlergroup.com)



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PLASSON is a vital ally in facilitating efficient work processes, enabling operations to be completed quickly, simply, and safely to ensure continuity in mining operations.

In the mining industry, time is synonymous with health, safety, and profitability; therefore, minimizing mine shutdowns is essential for optimal operational efficiency. With PLASSON's innovative solutions, you can achieve reliable performance and maintain the highest safety standards, ultimately enhancing productivity in your mining operations.

## Large Bore ElectroFusion Couplers



PLASSON Couplers are manufactured in sizes ranging from 20mm – 1200mm.

A significant advantage of PLASSON Large Bore Couplers is that they can be used in confined spaces when large welding machines cannot be used or brought to the location, such as when a HDPE pipe bursts or leaks and requires repairs with limited access space.

When using PLASSON Electrofusion Large Bore couplers on HDPE pipes, there will be no internal beading formed on the pipe, unlike with other traditional methods of welding.

This has the direct benefit of no slurry build up in the pipe around the joints. Overall, these couplers are quick, reliable, and easy to install.

## Large Bore ElectroFusion Saddles



PLASSON Large bore saddles are Rated PN16 and are produced for installation on PE Pipes of 280mm – 1200mm diameter, with branch connections of 90mm - 400mm.

The installer is able to pressure test each branch saddle after welding and before drilling into the main pipe, due to the saddle's specific test piece in the branch of the saddle.

The clear advantage is that the integrity of the weld and the seal is confirmed, prior to any drilling of the branch of the pipe.

This installation is fast and easy, which saves downtime and costs.



# Improving Backfill Efficiency, Worker Safety Through Automation

by Marcel Ley, Victaulic



Over the past decade, mine owners have increased the use of backfill systems to manage waste and enhance ore recovery in underground mining operations, and automated systems are now playing a significant role in effecting efficiency gains and improving worker safety.

Historically, mine owners were slow to adopt paste reticulation systems due to the cost of backfilling equipment and the amount of time required for manual operation. Owners opted for mining top-down in some cases, using cemented rockfill to stabilize stopes even though this approach is less effective than backfill paste for ensuring full confinement of hanging walls.

There is no question that manual backfilling is a time-consuming process. In reticulation systems where there are no diverter valves, a worker must travel to the lockout location, perform the lockout (which in some mines takes place on the surface), travel to the switching location, manually switch the pipe, and return to the lockout location to remove the locks. Performing this can take a team of three paste operators anywhere from two to five hours, depending on the layout of the mine and the lockout procedure employed.

Switching to an automated system eliminates these 2- to 5-hour delays, allowing paste filling to begin quickly and enabling rotation to occur during otherwise nonproductive times, such as shift changes. There is no need for physical intervention, which makes it possible for workers who were previously required for paste operations to perform other tasks on

*The internal rotating plug of the Victaulic Series 725T 4-way diverter valve has three flow positions, with two primary outlets for directing paste or hydraulic backfill through the reticulation system and a third, clearly marked, drain outlet for flush water diversion and dumping.  
(Image courtesy of Victaulic)*

site. This gain in productive time has a significant impact on the bottom line.

Unfortunately, many owners operating under the assumption that automated equipment is cost-prohibitive, have not yet adopted this technology. And that means they not only miss out on the financial benefits, but they also miss the opportunity to improve worker safety.

#### **New thinking delivers better design**

The Victaulic Series 725T 4-way diverter valve was designed for remote actuation to simplify backfill operations and optimize labor efficiency. The internal rotating plug has three flow positions, with two primary outlets for directing paste or hydraulic backfill through the reticulation system to fill the appropriate stopes and a third, clearly marked, drain outlet for flush water diversion and emergency backfill dumping. The 90-degree rotation to the tapered drain port enables quick diversion of flow to mitigate water hammer during flush water diversion.

The valve is compact, so it is easy to install even in tight underground environments and can be configured with several styles of grooved end connections. Manufactured with high-performance, resilient materials, it can accommodate pressures to 1,500 psi. A polyurethane seat provides long-life wear resistance, and martensitic stainless-steel wetted surfaces prevent premature erosion and corrosion.

#### **Proving value through performance**

In a recent installation, this automated diverter valve replaced manual diversion in a reticulation system. The mine had been using an open stope, retreat mining method that used backfill to extract gold ore. The open stopes ranged from 500 cu m to 2,700 cu m, with an average size of 1,500 cu m, requiring between 100,000-110,000 cu m of backfill per year. Because of the relatively flat dipping nature of the orebody, the hanging walls required topping up with a flowable mixture of sand, cement, and water to prevent hanging wall failure. Although this manual backfill method was effective, it was slow, and operating costs were high.

The decision to switch to paste backfill was made to ensure that the backfill achieved full confinement of hanging wall voids while allowing the mine to attain higher productivity, lower dilution, and reduced operating costs. The installation employed automated diverter valves in the reticulation system that could be monitored and actuated from an above-ground control room. This solution increased site safety while enhancing the efficiency of the paste reticulation system, which could be operated during shift changes to reduce system downtime. The installation of an automated diverter valve streamlined the paste reticulation process, minimizing nonproductive time and moving workers out of harm's way.

The enhanced design of the diverter valve itself eliminates all exposed moving parts, which further improves worker safety. In the unlikely event of seal wear on the valve, all media remain contained within the valve body. This feature offers advantages over other diverter valves that rely on exposed compression seals between the body and sliding plates or rotating discs that expose operators to high-pressure media spray and

seal leakage if there is a failure during operation or during the flushing process.

Should the system require it, the valve design also allows for local actuation. An operator can travel to the level of the mine where work is to be performed, change the diverter control unit to local actuation, switch the valve away from the line that is being worked on, and lock out the actuator to isolate the line. This functionality provides the highest level of safety for operators because it allows them to manage the process without relying on someone else to ensure isolation.

#### **Facilitating efficient operations**

Today, valves developed specifically for backfill are more compact and safer to operate underground than ever before, and as backfill systems continue to evolve, so does the development of automated diverter valves. The results gained by installing these advanced valves prove that functionality and worker safety can be improved through automation and that better designs can deliver greater efficiencies and better economics for facility owners.

[www.victaulic.com](http://www.victaulic.com)



*Designed for either manual operation or remote actuation, the automated diverter valve enables mines to quickly and easily divert paste and dump backfill in the event of a blockage.  
(Photo courtesy of Victaulic)*

# Enhancing Mining Operations in Africa Through Intelligent Fleet and Asset Management



## Introduction

In recent years, mining operations across Africa have expanded into more remote and challenging environments. Companies are under pressure to maximize productivity, control operational costs, and, above all, ensure the safety of their workers. From our experience in field operations, implementing intelligent monitoring systems has become a vital step toward achieving these goals.

## Challenges in African Mining Operations

Mining fleets face extreme conditions: long distances, unpredictable road conditions, fuel logistics issues, tyre wear, and security risks such as equipment theft. These factors not only increase costs but also cause operational downtime, impacting output targets.

## How Intelligent Monitoring Addresses These Challenges

Drawing from on-site implementation, we

found that adopting Totemtek's integrated GPS tracking, fuel monitoring, tyre pressure management, and video surveillance systems significantly improves operational stability.

### 1. Real-Time Visibility on Fleet Movements

With GPS systems, we can monitor vehicle locations in real-time, set geofences around high-risk areas, and track route deviations. This not only prevents unauthorized use but also supports faster decision-making during emergencies.

### 2. Tightened Control Over Fuel Usage

Fuel sensors allow real-time monitoring of tank levels and consumption patterns. After implementation, many sites saw fuel losses drop significantly, highlighting an immediate cost saving.

### 3. Extended Tyre Lifespan

The TPMS solutions gave early warnings of abnormal pressure or temperature, enabling

preventive maintenance and significantly reducing tyre blowouts on rough mining roads.

### 4. Visual Oversight and Safety Enhancement

Integrating video monitoring with GPS data allowed management teams to oversee vehicle behavior and site conditions remotely, strengthening overall site safety protocols.

### 5. Centralized, Remote Management

Using a unified cloud platform, all monitoring data could be reviewed on a single dashboard, accessible from any device. This eliminated the need for complex local infrastructure.

Deploying Totemtek's intelligent systems brought measurable benefits to mining operations — reducing costs, enhancing

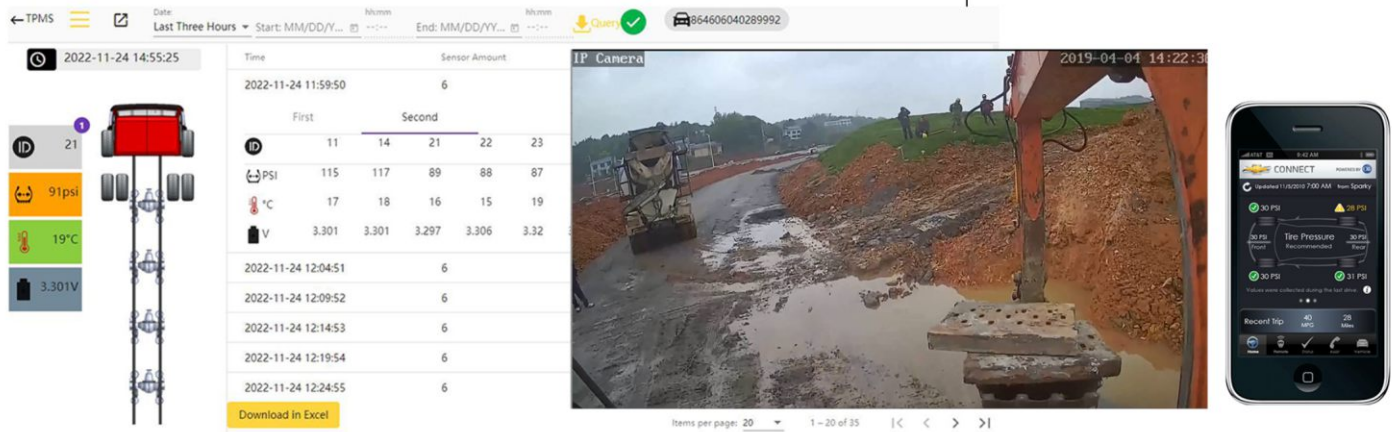
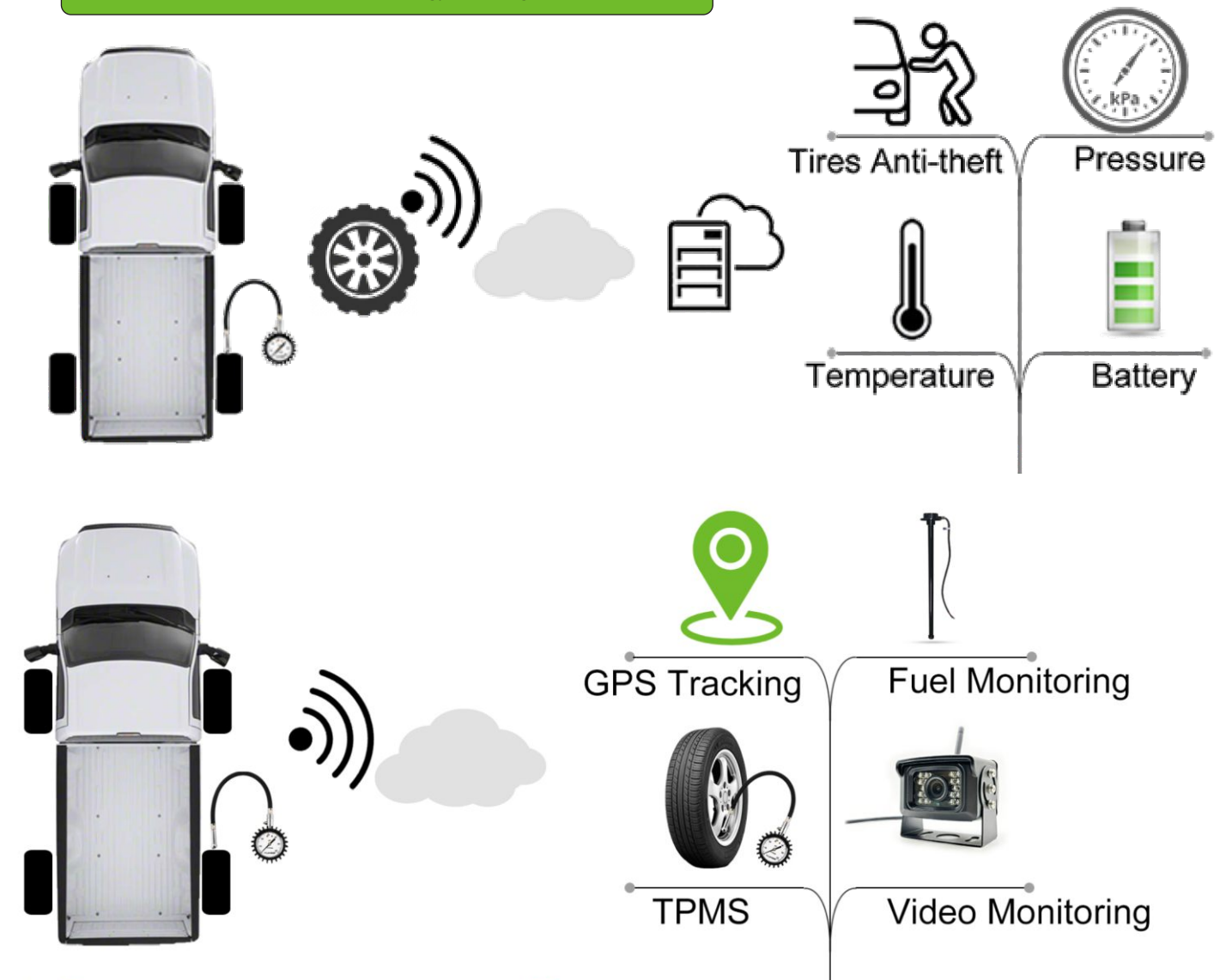
safety, and improving transparency. For African mining companies seeking sustainable growth under increasingly challenging conditions, adopting such smart technologies is no longer optional but necessary.

Totemtek offers businesses across Africa and

the Middle East a flexible, open-platform fleet management solution, designed to promote safer driving practices and maximize the productivity of mobile assets and teams. Through "Intelligent Monitoring for Smarter Fleets," we deliver premium tracking solutions at competitive prices. With a strong presence

across the region, Totemtek enables seamless fleet monitoring and management from anywhere in the world. Our solutions are fully customizable for your current operational needs and easily scalable to meet the demands of future growth.

### Totemtek TPMS Online gps tracking



# Massenza Drilling Rigs: introducing our machines for core drilling and mineral exploration



*Mi4 Job Site Moletolo*

**C**ore drilling machines play a crucial role in various industrial sectors, including construction, geotechnical engineering, mining exploration, and infrastructure projects. That's why we design drill rigs specifically to drill through solid materials such as concrete, stone, rock, and even metal, extracting cylindrical samples of material.

Massenza mineral exploration drilling rigs are ideal for mineral research and core drilling in mines. We offer a range of solutions depending on the depth to reach, hole diameter, and type of soil to be analyzed. For

example, we have smaller models that can reach depths of up to 378 meters, and larger models that can reach from 875 meters to 3200 meters!

Our core drilling machines can be truck or crawler mounted for both narrow and large-scale projects, such as deep rock or soil coring. They are equipped with powerful motors and mechanisms that allow for drilling at significant depths.

With this broad range of models, our drilling rigs are ideal for a wide range of core drilling applications, including: geotechnical

engineering projects, mining exploration, construction, water wells.

## **Introducing two Massenza Drilling Rig Models perfect for core drilling projects Mi4 Massenza Drilling Rig in Action for Water Wells and Core Drilling**

Our Mi4 drilling machine is characterized by its compactness, small size, and, above all, its high technical specifications. On our YouTube channel you can see the Mi4 drilling rig in action on two geotechnical construction sites: one for piezometer installation and the other for core drilling.

Here are the key features of this Mi4 on a crawler:

#### 1 Mast:

- Capacity: 5.6 tons - 3.7 m (12 ft 1") rotary head stroke
- Max pull-up and pull-down: 52 kN - Up and down speed: max. 18 m/min

#### 2 Massenza Rotary Head:

- Maximum torque: 6880 Nm - Maximum speed: 500 RPM

#### 3 Double Hydraulic Clamp:

- Maximum passage diameter: 280 mm (11")

#### 4 Service Winch (wire-line winch available according to customer specs):

- Direct line pull: 22 kN (4946 lbf) - Complete with 30 m of steel cable Ø 10 mm (3/8")

#### 5 Triplex Water/Mud Pump "200":

- Maximum flow: 200 l/min (52.8 US gal)
- Maximum pressure: 30 bar (435 PSI)

In response to an additional customer request, this Massenza Mi4 drilling rig for

water wells and core drilling includes a 1.90-meter mast extension, which can be dismantled to maneuver 6-meter rods and pipes.

At the end of the video, you'll see a special moment: the extraction of the core and the sealing of the material, ready to be sent to the laboratory in Milan (Italy) for analysis. For our customer, it was crucial to deliver the material intact and uncompromised by external agents.

#### A Special Massenza Mi12 drill rig model with a multipurpose rotary head

We introduce the new Mi12 drill rig with a multipurpose rotary head, specially designed to serve a wide range of customers who need to carry out various types of drilling, from deep core drilling to RC (reverse circulation) to drill and analyse samples faster.

This new machine was custom-designed (a regular request for Massenza Drilling Rigs, as we offer many options to meet customer needs) for a customer working on a mining

site. Initially, this customer will use a down-the-hole hammer to drill through fractured rock, and then begin core drilling. The machine initially drills with reverse circulation RC to reach and analyse more quickly, once the layer of interest is reached the ground is analysed by coring to allow for more detailed sampling. A new Massenza system specifically designed for this type of activity, allows you to switch from one configuration to another (from RC to coring) in a very short time, around 1 minute.

**The Mi12 features another innovation:** a hydraulic double clamp, with the upper one sliding vertically. Driven by seven hydraulic cylinders, it can clamp, screw, and unscrew drill rods, tricones, and casing pipes.

Here are some other features:

#### 1 Fully radio-controlled

#### 2 Stroke: 6.7 m (22 feet)

- Maximum pull-up: 15,290 daN (34,373 lbf)
- Maximum pull-down: 10,600 daN (23,830 lbf)

#### 3 Diesel Engine: Max power: 245 hp (180 kW)

#### 4 Free handling system: For both vertical and inclined drilling modes with a box for different diameters (holds 30 rods, 4.5" OD on board) with automatic rods arms charger

#### 5 Triplex Water/Mud Pump: 200 l/min (52 gpm) – 50 bar (725 psi)

#### 6 Generator: Power: 3 kVA single-phase / 6.5 kVA three-phase 380V

#### 7 Wireline Winch: Complete with 2,700 feet of rope

- Max. direct pull: 2,900 pounds - Max. lifting speed: 360 ft/min at 8 layers

#### 8 Infrared Cage Protection and angle Drilling Package

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# ISO Seal Saver is a smart way to protect hydraulic, pneumatic cylinder rods



In today's tough economic landscape, unplanned equipment failure is more than an inconvenience, it is a financial liability. Yet many industries continue replacing hydraulic cylinders instead of preventing their premature wear. Seal Saver, exclusively imported and distributed by ISO-Reliability Partners, presents a smarter solution by protecting hydraulic and pneumatic cylinder rods from the start.

**Craig FitzGerald** emphasises this shift in approach: "We are telling our clients: stop replacing your hydraulic cylinders and start protecting them. ISO Seal Saver is a breakthrough in preventative maintenance, especially in industries facing tough environmental conditions."

ISO Seal Saver is a custom-fabricated protective boot, specifically designed to guard hydraulic cylinders, rods and wiper seals from exposure to heat, dust, oil, water, and chemical agents. It is a proven solution in a variety of sectors, offering high-performance material options tailored to your working environment.

Options include Kevlar for mining and chemical exposure, Ballistic Nylon for general and marine applications, Coated Silica Cloth for high-temperature conditions up to 985°C, and Aluminised Kevlar for reflective heat protection up to 316°C.

Installation is quick and straightforward, usually completed in 15 minutes or less without any need to disassemble the cylinder. The ISO Seal Saver wraps around the cylinder

with a Velcro closure and functions like an accordion, expanding and contracting as the cylinder operates. Despite its simple application, the impact is substantial.

By preventing the intrusion of microscopic particles that pass through wiper seals, ISO Seal Saver protects internal hydraulic components from becoming worn by abrasive contaminants. This not only extends the lifespan of the cylinder and its seals but also protects valves, pumps, and the entire hydraulic system from avoidable damage.

"It is quick to fit, but the benefits last long. By blocking silt-sized contaminants from reaching the rod seals, you are protecting the entire hydraulic system from premature wear," highlights FitzGerald. ISO Seal Saver's

design reduces the risk of oil leaks, lowers the chance of overheating, shields the cylinder from falling debris, and significantly cuts repair costs. In many cases, it can increase a cylinder's service life by a factor of three to 12.

Each ISO Seal Saver is fabricated to match the unique specifications of the machine it will protect. This includes considerations such as cylinder dimensions, stroke length, fluid line positions, surrounding machine guards, and environmental hazards. Heavy-duty clamps, mounting straps, and cut outs for fluid lines ensure a secure and reliable fit. Alongside Seal Saver, ISO-Reliability Partners also offers Hose Saver, a related product that extends the same preventative philosophy to hydraulic hoses and pipes. ISO Hose Saver is a durable sleeve designed to shield hoses from heat, chemical exposure, vibration and physical abrasions. Like its counterpart, it features a Velcro wrap-around design for fast, no-disassembly installation. It is supplied in

15-m rolls and cut to size according to hose or pipe diameters.

ISO Hose Saver acts as a physical barrier, reducing wear on hose surfaces and lowering the risk of leaks and failures in high-temperature or high-friction environments. FitzGerald describes it as a simple but powerful addition to any maintenance plan: "It is a simple barrier that makes a huge difference. Both ISO Seal Saver and ISO Hose Saver are about keeping systems cleaner, safer, and more efficient, all while reducing

your maintenance budget."

He concludes: "These are not just accessories. They are essential tools for any business that depends on hydraulic equipment. They deliver long-term value by minimising downtime, extending the life of critical components, and improving operational efficiency. In industries where reliability is everything, choosing to protect rather than replace can make all the difference."

*ISO Seal Saver protects internal hydraulic components from becoming worn by abrasive contaminants.*



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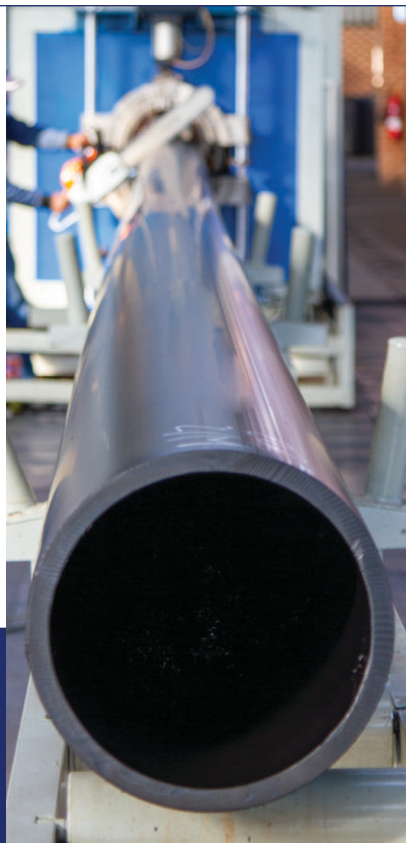


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# ABB innovation for energy efficiency and sustainability at Enlit 2025



ABB's Tmax XT moulded case circuit breaker (MCCB)

The application of sensor technology to reduce the operational and standby power losses of traditional current and voltage transformers means that, over the lifetime of a typical switchboard in the African environment, the energy saving equates to 181 MWh over a 30-year period. This is according to **Egon Worthmann**, Business Manager – Commercial and Operations in the Distribution Solutions Business at ABB.

Sensor and digital technologies used in conjunction with ABB's switchgear assist its customers' operations to run more efficiently, thereby reducing their carbon footprint. This enables African customers, in particular, to be less reliant on coal-fired power stations.

“ABB has long championed energy efficiency and sustainable operations. We have invested

a huge portion of our revenue into research and development,” comments Worthmann. The event will see the technology leader presenting its digital substation architectures with CPC/VPAC (SSC600) to enable centralised protection and control.

Local substation operators benefit by having the flexibility to meet the growing and changing demands on the modern distributed

power network. The system also enables condition monitoring of assets, ultimately reducing lifecycle costs.

"We are also using the opportunity to showcase and present our medium voltage (MV) secondary switchgear, which is SF<sub>6</sub> free, to assist our customers achieve their sustainability goals," adds Worthmann. ABB's SafePlus Air 24 kV is an innovative, eco-efficient medium voltage gas-insulated switchgear (GIS) that eliminates the use of sulphur hexafluoride (SF<sub>6</sub>), a potent greenhouse gas. Instead, it utilises dry air as the insulation medium, offering a sustainable alternative for secondary distribution networks.

By replacing SF<sub>6</sub> with dry air, SafePlus Air significantly reduces environmental impact. Dry air has a Global Warming Potential (GWP) of zero, compared to a GWP of 25 200 for SF<sub>6</sub>. The switchgear complies with IEC standards and the EU F-gas regulation (EU) 2024/573, aligning with global efforts to phase out SF<sub>6</sub> in electrical equipment.

ABB's SafePlus Air switchgear has been successfully implemented in pilot programmes aimed at reducing carbon emissions. For instance, Northern Powergrid in the UK adopted SafePlus Air for substations in County Durham, contributing to its goal of decarbonising its network by 2040. The switchgear's compatibility with existing systems allowed for seamless integration and significant reductions in SF<sub>6</sub> emissions.

Building on the sustainable innovations demonstrated in its medium voltage (MV) portfolio, ABB is also advancing low voltage (LV) solutions with the same focus on energy efficiency and environmental responsibility. This highlights ABB's holistic approach to reducing emissions and improving operational efficiency across the power distribution value chain.

At Enlit Africa, ABB will also spotlight its advanced LV offering, the Tmax XT moulded case circuit breaker (MCCB), designed to

complement MV innovations like SafePlus Air in achieving customers' broader sustainability goals. The Tmax XT MCCBs feature a range of integrated technologies that contribute meaningfully to energy efficiency and environmental responsibility.

Among these features is the Ekip Power Controller, which facilitates dynamic load management and peak shaving. This capability can reduce energy consumption by up to 20%, helping users avoid penalties for surpassing contracted limits and managing peak demand more cost-effectively. The Tmax XT also delivers high-precision metering with 1% energy measurement accuracy, enabling detailed monitoring and optimisation of energy use.

Through ABB Ability™ connectivity, the MCCBs allow for real-time data analysis and remote energy management via the cloud. Their Ekip Touch trip units support comprehensive power quality assessments, including voltage, energy, power and harmonics, allowing for more proactive maintenance and system optimisation.

In line with global green building initiatives, the Tmax XT supports compliance with environmental certification standards such as Green Mark Platinum, thanks to its precise energy monitoring and reporting capabilities. Its modular and upgradeable design ensures that customers can easily enhance system functionality without complete hardware replacement, reducing electronic waste and lowering lifecycle environmental impact.

In addition, safety and reliability have been enhanced with features such as arc fault protection and adaptive protections, which reduce the risk of system failures and maintenance interventions, further contributing to operational sustainability.

"ABB has been driving sustainability across the entire value chain of its circuit breaker product line. Our goal is not only limited to the sustainable production of circuit breakers, but also to ensure that the end users of our

products in Africa get access to technologies that help reduce energy consumption," explains Veron Maharaj, Product Marketing Specialist in the Smart Buildings Division at ABB.

He adds that circuit breakers, once used purely as protective devices, have now evolved into multifunctional tools thanks to ABB's innovation. The Tmax XT MCCBs have been engineered to reduce power losses over their operational lifespan, lowering the total cost of ownership. With integrated digital communication across eight industrial network protocols, the devices offer seamless data sharing and control within complex electrical systems.

ABB will be exhibiting at Enlit Africa 2025 from 20 to 22 May at the Cape Town International Convention Centre, billed as Africa's premier gathering for the power, water, and energy sectors. Keynote speakers include Minister of Electricity & Energy Kgosientsho Ramokgopa and Eskom Group Chief Executive Dan Marokane.

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**T**AU Mining is a proud owner of all of its equipment which includes a full range of mining equipment to suit any application, 90-to-240-ton trucks, Dozers, Excavators etc. All equipment is well maintained by a team of maintenance specialists that ensure the highest availability and excellent operational performance. TAU Mining is also partnered and fully supported by our original equipment manufacturers (OEMs), which contributes to the success of our machine performance and availability as well.

“Along with our 30 years of mining experience TAU Mining is capable of delivering complete open cast mining solution, ranging from rental of equipment to a comprehensive long term mining contract” says Mikhail Makhnach, TAU Mining Chief Executive Officer. “We own a wide range of equipment and are always readily available should an opportunity arise in any part of Sub-Saharan Africa.”

“We started as a consulting company, so I would say, we went through the ranks in understanding what our clients expect and as a result, we deliver on those expectations” Mikhail answers the question on why TAU Mining is distinct from other contractor companies.

At TAU Mining, our work is guided by a clear purpose and strong values. We believe in approaching each day with passion and enthusiasm, and in taking full accountability for our actions. Efficiency is important to us - not only in completing tasks, but in ensuring they're done to a high standard and that our decisions are made with TAU Mining's overall success in mind rather than individual preferences. We actively encourage innovation and are always looking for the best way forward for business. Most importantly, we are committed to being open and honest in all areas of our work.

At TAU Mining, staying ahead means continuously adapting, improving, and leading with intention. TAU Mining is committed to investing in the right people, reliable equipment, and proven systems to ensure consistent, high-quality service delivery. Prioritizing training and upskilling teams to keep pace with industry developments and regulatory requirements, while also embracing technology that enhances efficiency, safety, and precision on site.

“Our approach is rooted in building strong client relationships, understanding their evolving needs, and delivering solutions that add real value. By fostering a culture of accountability, innovation, and operational excellence, TAU Mining will remain focused on sustainable growth and long-term impact throughout the industry” Mikhail concludes.

[www.taumining.co.za](http://www.taumining.co.za)



# The Future of Road Safety: Anti-Puncture Tires

In the ever-evolving landscape of automotive technology, safety and performance remain paramount. One significant innovation that has garnered attention in recent years is the development of anti-puncture tires. Designed to enhance road safety and minimize the inconvenience of flat tires, these advanced tires are transforming the driving experience for consumers and fleet operators alike.

## Understanding Anti-Puncture Technology

Anti-puncture tires incorporate a variety of technologies aimed at preventing air loss from punctures. Common methods include the use of specialized sealants, reinforced materials, and innovative tread designs. These features work together to seal small punctures instantly, allowing drivers to continue their journey without the immediate need for a tire change.

For instance, many anti-puncture tires are equipped with a gel-like sealant that fills holes as they occur. This means that even if a sharp object penetrates the tire, the sealant prevents air from escaping, maintaining tire pressure and performance. Such innovations not only enhance safety but also reduce the likelihood of roadside emergencies.

## Benefits of Anti-Puncture Tires

1. **Enhanced Safety:** The primary advantage of anti-puncture tires is the increased safety they offer. By minimizing the risk of sudden deflation, drivers can maintain better control of their vehicles, especially in critical driving conditions.

2. **Cost-Effectiveness:** While anti-puncture tires may have a higher upfront cost compared to traditional tires, they can lead to significant savings over time. Reduced tire

replacements and fewer roadside assistance calls translate to lower overall maintenance costs.

3. **Convenience:** Drivers no longer have to worry about carrying spare tires or tire-changing tools. Anti-puncture tires provide peace of mind, making them an attractive option for long-distance travelers and urban commuters alike.

4. **Environmental Impact:** By prolonging the lifespan of tires and reducing waste, anti-puncture technology contributes to environmental sustainability. Fewer tires disposed of means less strain on landfills and natural resources.

## Market Trends and Consumer Adoption

As awareness of anti-puncture technology grows, an increasing number of consumers are considering these tires for their vehicles. Automotive manufacturers are also beginning to offer anti-puncture options as standard equipment in new models, particularly in SUVs and trucks where durability is crucial.

Furthermore, the rise of electric vehicles (EVs) has influenced the market for anti-puncture tires. As EVs gain popularity, the demand for tires that can withstand the unique challenges posed by electric drivetrains—such as increased torque and heavier weights—has led to further innovations in anti-puncture designs.

## Challenges and Considerations

Despite the numerous benefits, there are challenges and considerations that consumers should keep in mind. For example, the effectiveness of sealants can diminish over time, necessitating periodic checks and maintenance. Additionally, while anti-



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**Nail test**    **Tire directly over 5cm long nail diameter 6mm**

**0.05s Self repair**

**The nail pierced tire**    **Self-sealing technology turned on**    **Self-sealing after pulling out the nail**

**ARESTONE SAFETY TYRE**

puncture tires can handle small punctures, larger damages may still require replacement.

Consumer education is also vital. Many drivers may not fully understand how anti-puncture technology works or the maintenance required to ensure optimal performance. Manufacturers and retailers must prioritize educating consumers about the benefits and limitations of these tires.

## Conclusion

In conclusion, anti-puncture tires represent a significant advancement in tire technology, offering enhanced safety, convenience, and cost savings for drivers. As the automotive industry continues to innovate, these tires are likely to become a standard feature in vehicles of all types. By embracing this technology, consumers can enjoy a more reliable and secure driving experience, making our roads safer for everyone.

Thank you. Elian Chong@Tyre Automart (PG)  
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# Sealing Every Threat On Road

## Advance Tyre Automart: Introduces Loake Safety Tyres

First-time participant Advance Tyre Automart (PG) Sdn Bhd, now entering its third year of selling Loake safety tyres, brought the brand to TyreXpo Asia 2025 to expand market reach.

"With Loake safety tyre, an anti-puncture tyre, the driver does not have to panic in the case of nail leakage or tyre puncture. Driving with punctured tyres poses significant risks as it could lead to loss of control through tyre blowouts, resulting in accidents, injuries, irreversible damage of tyre and wheel. It also takes away the hassle to change and repair the tyre on site," said Sales and Business Development Manager Elian Chong.

One of its key innovations is a self-developed polymer memory rubber coating that enables large-scale production and application of synthetic Eucommia rubber TPI in semi-steel radial tyres. This technology offers enhanced puncture resistance and self-sealing capabilities with a protective layer thickness of up to 6mm, and achieved a safety standard on par with international benchmarks.

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Evaluation of Self sealing Performance of Coated Piercing Self sealing Tires (GB/T38510-2020)



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# The Importance of a Comprehensive Water Monitoring Programme in the Mining Industry



**M**ining is one of Africa's most significant economic drivers, however, the mining industry is also amongst the largest consumers and polluters of critical water resources. As such, mining has a long and complicated relationship with water quality and availability.

Without constant oversight, the impacts from

the mining industry can spread far beyond mine boundaries, threatening agriculture, water supplies and biodiversity. The simple and effective solution to this, is the implementation of a comprehensive water monitoring programme.

The objective of a comprehensive water monitoring programme should be to

measure, document, understand, manage and improve the water quality within the surrounding surface water and groundwater systems. Such a programme provides early warnings of contamination, facilitates compliance with environmental regulations and informs better water management strategies. As such, it transforms reactive environmental management into proactive stewardship.

## Looking Ahead: The Power of Proactive Monitoring

Proactive monitoring represents a paradigm shift in environmental management, with a focus on **Risk Management** and **Technology**. By investing in a comprehensive water monitoring programme, industries position themselves to develop responsibly, operate sustainably and adapt confidently to future challenges.

### Risk Management

Proactive water monitoring is a cornerstone of **modern risk management** in mining. It turns water data into foresight, enabling safer operations, regulatory compliance and long-term environmental responsibility. As the industry faces increasing scrutiny and changing climate realities, investing in proactive water strategies is both a risk management priority and a competitive advantage, enabling mines to:

- Identify Risks Before They Escalate
- Reduce Environmental and Regulatory Liabilities
- Improve Decision-Making Under Uncertainty
- Strengthen Tailings and Infrastructure Oversight

- Enhance Stakeholder Confidence
- Adapt to Climate and Water Scarcity Risks

### Technology

The integration of **new technologies** has further amplified the power of water monitoring data. Advanced monitoring equipment, remote sensing and cloud-based analytics allow for continuous data collection and real-time access. Subtle shifts in water quality and quantity can now be more easily detected, offering predictive insights that allow companies to prevent problems before they arise. These innovations not only improve environmental outcomes but also streamline regulatory reporting and reduce human error.

At **GCS Environment South Africa**, we regard monitoring not only as a scientific necessity but as a strategic foundation for responsible decision-making. We partner with clients across sectors—from mining and energy to infrastructure and agriculture—to deliver tailored environmental solutions rooted in data, driven by science, and committed to stewardship.

### Our Approach at GCS

At **GCS Environment South Africa**, we offer a **multidisciplinary, science-driven approach** to monitoring. Our expert teams—comprising hydrogeologists, hydrologists, ecologists and environmental scientists—work collaboratively to develop site-specific monitoring programs tailored to both regulatory and operational needs. We use high-quality sampling protocols, accredited laboratory analyses and GIS-based data interpretation to ensure your project's monitoring data is legally robust, scientifically defensible and strategically actionable. We don't just collect data—we translate it into insights. Our methodologies are compliant with national legislation and international best practices.

We also emphasize **continuity and long-term value**. Our monitoring programs are designed to integrate seamlessly into long-term operational monitoring frameworks, supporting future compliance reporting, auditing and sustainability initiatives. At **GCS Environment South Africa**, we help mining companies set the standard for water responsibility because responsible mining begins with knowing your water.



**GCS**, founded in 1987, operates throughout Africa. At GCS, we regard monitoring not only as a scientific necessity but as a strategic foundation for responsible decision-making. We offer a multidisciplinary, science-driven approach to monitoring, including:

- Groundwater & Surface Water Quality & Quantity Monitoring
- Biomonitoring
- Dust Fallout Monitoring
- Soil Monitoring
- Contaminated Land & Hydrocarbon Monitoring

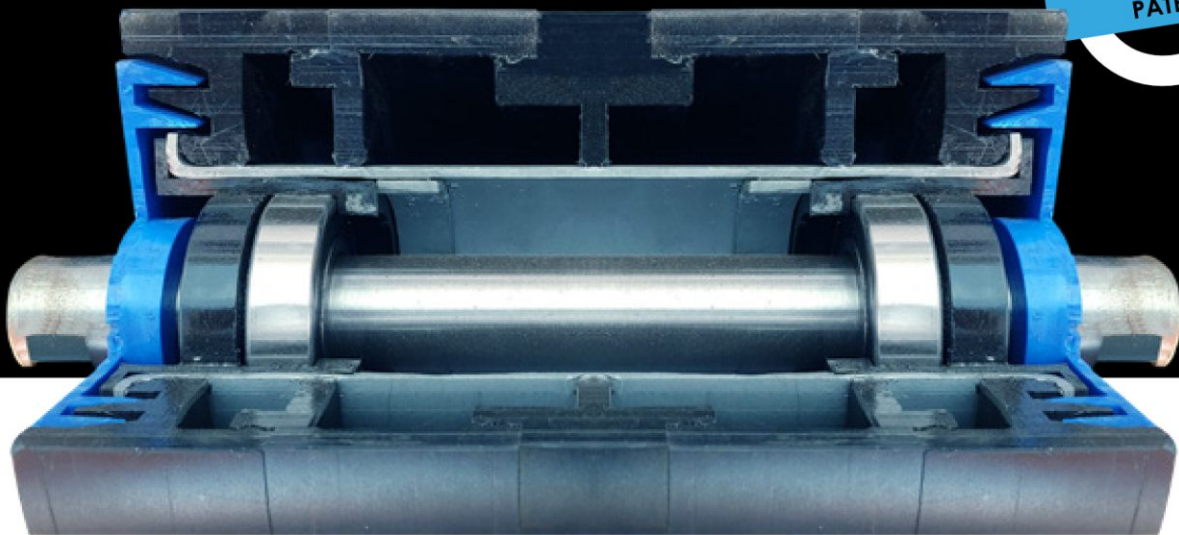
**eSymon**, a software designed by GCS, is used to:

- Store large volumes of monitoring data.
- Remotely access real-time data.
- Allow for data visualization using a GIS interface.
- Create outputs such as graphs, diagrams and maps.



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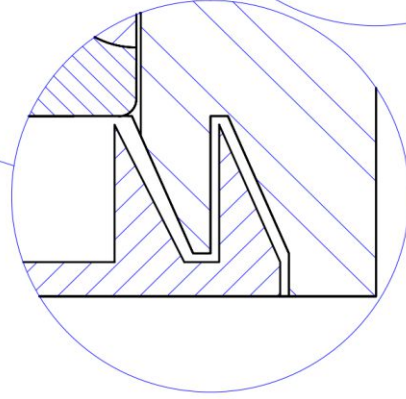
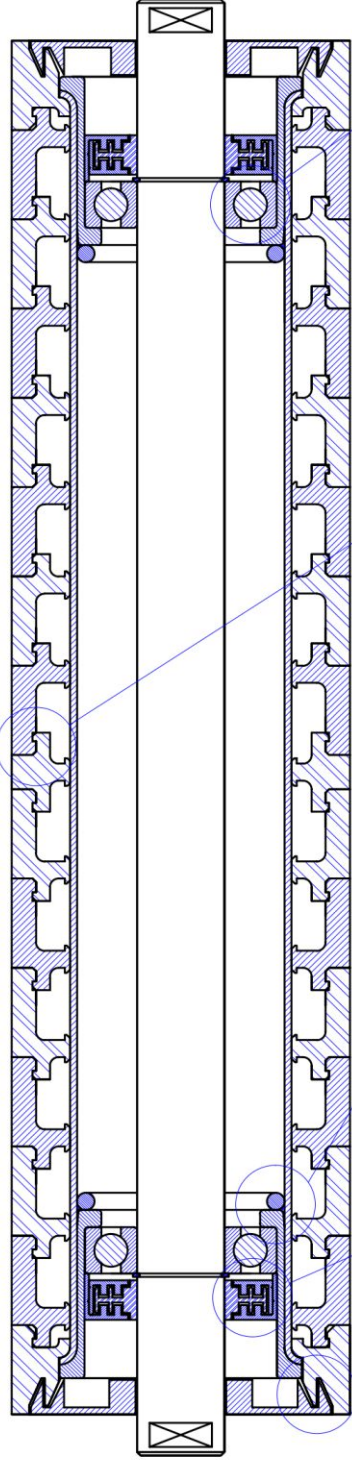
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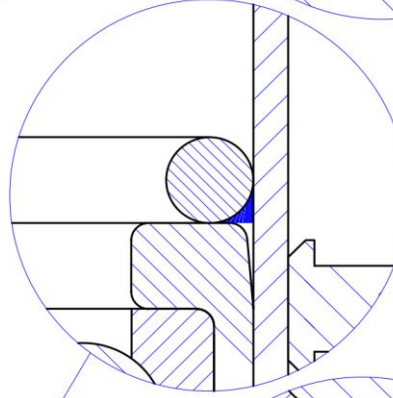
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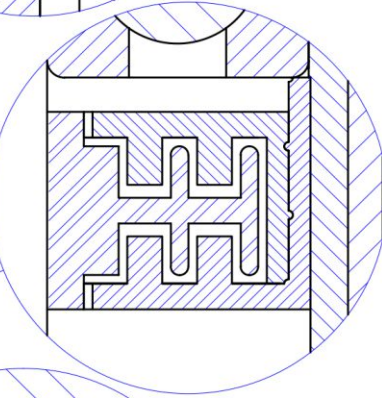
# CMI HDPE CONVEYOR IDLER



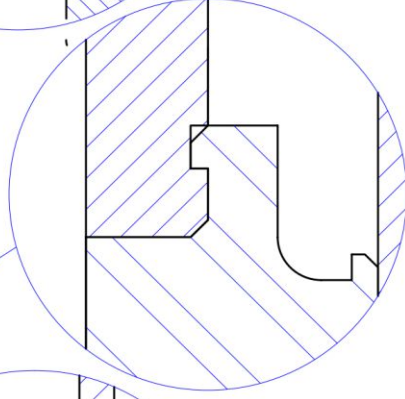
PRIMARY SEAL WITH TAPERED  
GROOVES FOR IMPROVED DIRT  
AND WATER DISPERSION



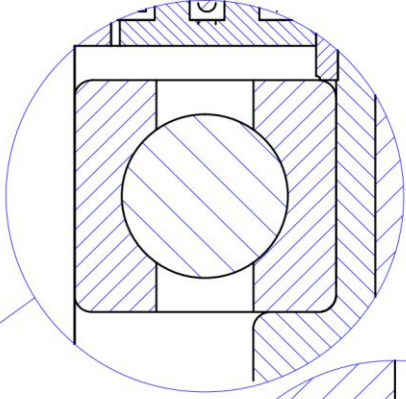
WELDED RETAINER  
TO MINIMIZE ANY  
SIDE-LOAD MOVEMENT



SECONDARY MULTI-LIP  
3-PIECE  
LABYRINTH SEAL



CLIP-LOCK  
DESIGN



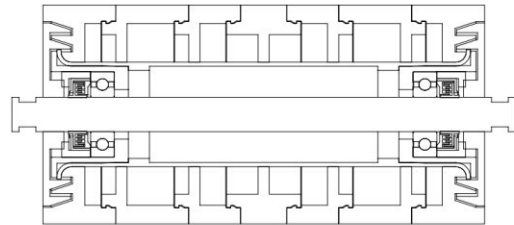
DESIGNED FOR USE  
WITH SEALED BEARINGS





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At Filter Concept, we take pride in our comprehensive range of air intake filters. These integral components play a crucial role in maintaining the performance and reliability of machinery while keeping a safe and hazard free environment for us and the world.


















For more enquiry  
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