

Innovation designed for the realities of mining tyre maintenance

Tyre inflation and wheel inspections are two critical maintenance activities where missed steps or undetected defects can have serious consequences. Catastrophic tyre failures can expose tyre technicians to severe safety hazards, while undetected wheel cracks can lead to costly downtime and asset loss.

Kal Tire's latest innovations being showcased at Electra Mining Africa 2026 are designed to help mines manage both challenges: The KalPRO™ Goliath-25, designed to contain high-energy tyre failures during inflation, and the latest generation of KalPRO Argus, an on-site wheel inspection system to detect cracks before they become costly failures.

A new layer of protection during tyre inflation

Inflation remains one of the highest-risk activities in tyre maintenance. If rim or tyre components have been compromised or incorrectly installed, a rapid deflation event can result in a violent release of energy. Technicians are meant to stand outside the tyre's trajectory zone during inflation, but accidents can still occur if safety steps are missed or someone is in the wrong place.

The Goliath-25 was developed to provide an additional layer of protection during this critical task. Designed to wrap around the tyre and wheel assembly, the system uses a heavy-duty nylon containment structure resembling a web and continuous anchoring strap to help contain wheel and rim components should a catastrophic failure occur.



"While established safety procedures remain essential, Goliath-25 provides another level of protection for technicians performing inflation work," says Kyle Madill, manager, innovation and research and development, Kal Tire.

The first model has been developed for 25-inch tyre assemblies, with additional sizes under development. Tested in controlled environments, Goliath-25 represents a practical innovation focused on protecting lives and helping service providers manage one of the industry's most significant safety risks.

Bringing wheel inspections closer to the mine

Traditionally, wheel inspections often require rims to be shipped long distances to specialised facilities, adding transportation costs, extending turnaround times and potentially removing serviceable assets from operation. Argus, a portable wheel inspection solution, helps eliminate those inefficiencies by bringing advanced inspection capabilities directly to the customer.

Using electromagnetic non-destructive testing technology, Argus scans critical areas of the wheel for cracks and other defects, helping identify issues before they progress into failures that can lead to downtime, costly repairs or safety concerns.

The latest version features a redesigned universal probe that follows wheel contours more effectively, including weld areas, simplifying inspections while improving technician efficiency. It is adjustable to inspect 51", 57" and 63" wheels. Already supporting operations in Latin America, Argus will continue to be introduced to additional remote mine sites to help make faster, more informed maintenance decisions.

"The goal of innovation at Kal Tire is to solve real challenges maintenance teams face every day," says Madill. "With Goliath-25, we're adding another layer of protection during tyre inflation, and with Argus, we're giving mines a faster, more practical way to detect wheel cracks before they lead to failures, downtime or safety concerns."



Progressive Innovation

KalPRO tools

WheelJaws: Secure, remote-controlled clamps for safer tyre removal

Takes technicians out of harm's way during the installation and removal of the tyre and wheel using a remote-controlled clamp mechanism securing the assembly.

GATR: Gravity Assist Tooling Rig for weightless tool operation

Supports the weight of heavy hand tools such as torque guns so technicians can perform tasks with less fatigue, fewer injuries and more precision.

VGRIPS: Magnetic holder secures and protects air valves

Secures and stabilises valve stems to prevent abrasion, leaks and damage. With a strong magnetic base, VGRIPS stays firmly attached to the wheel to protect valve stems from abrasion during wheel rotation. Universal fit and no modifications needed.

RamDrive: Secures rams for safer bead breaking

Holds the ram securely so technicians can break the bead during tyre removal in a way that's efficient and eliminates risk.

ValveShield: 100% success in preventing valve stem damage

Prevents flying rocks from displacing valve stems, which can cause leaks, tyre damage and downtime. Mounted over air valves and with stable yet removable magnetic backing.

TorqBlade: Controlled removal of seized wheel nuts

A mechanical splitter that removes seized wheel nuts without damaging the wheel stud. Using a torque wrench to apply controlled force, it helps technicians work more safely and efficiently while avoiding grinding or cutting.

