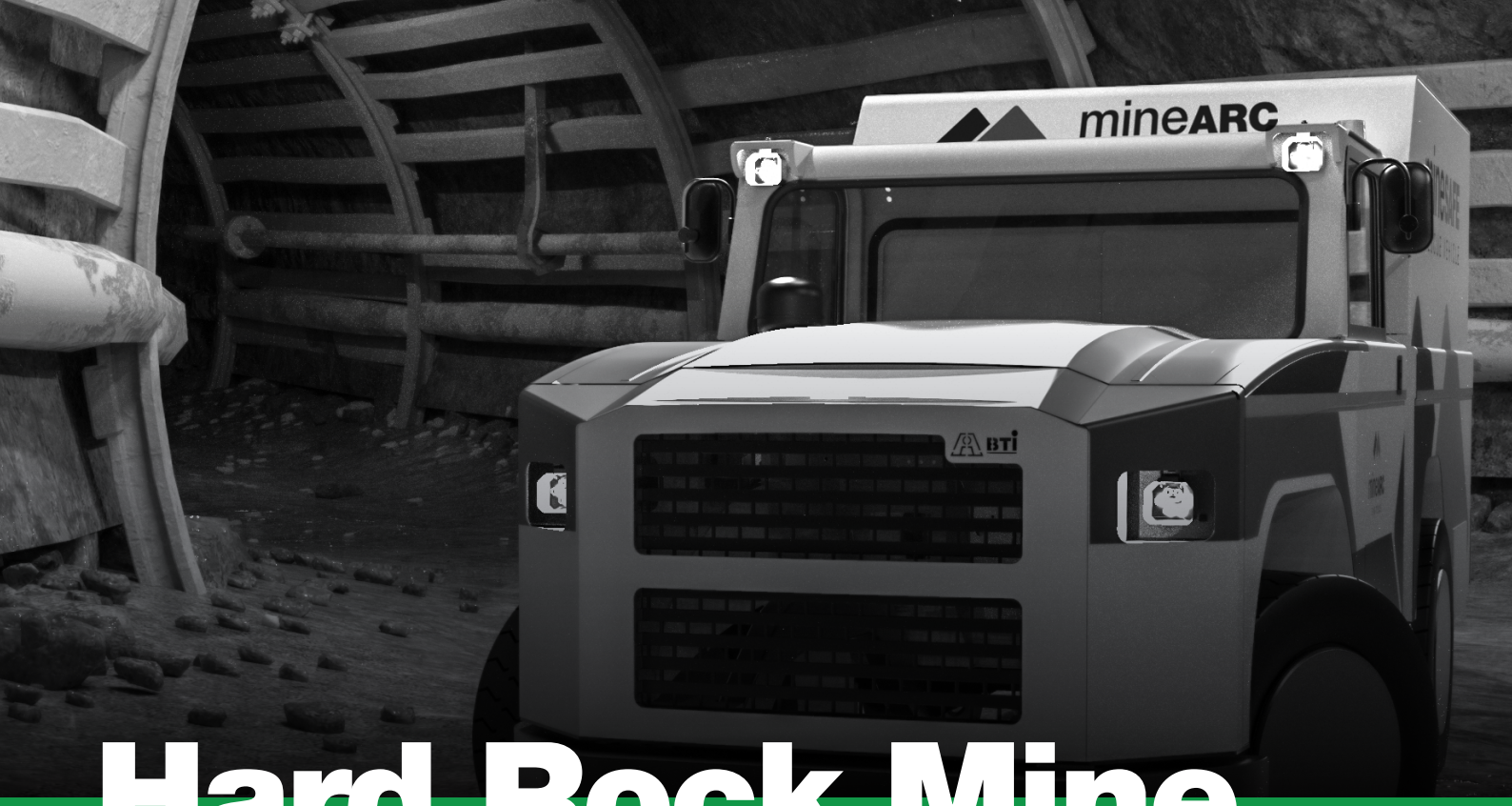
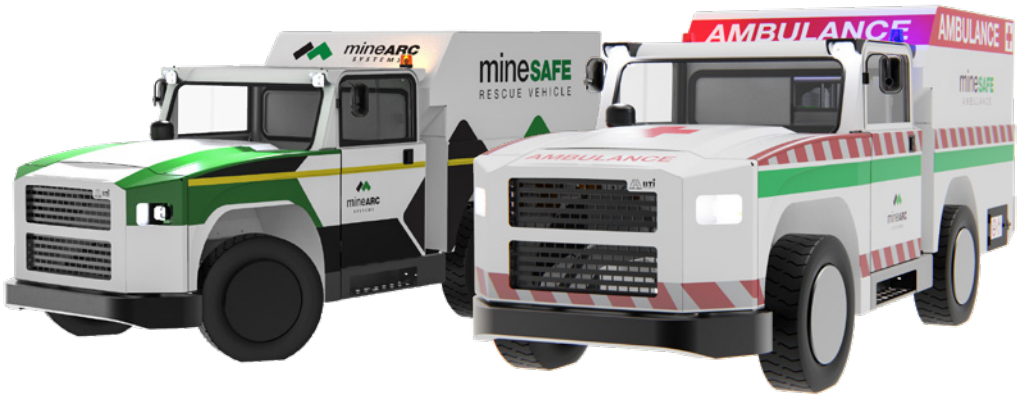


Hard Rock Mine Emergency Vehicles

For ERTs and Paramedics

Combining safety and manoeuvrability for remote rescue operations and patient extraction.

mineARC SYSTEMS | BTI BREAKER TECHNOLOGY



MineARC Systems - Built for Safety. www.minearc.com

mineARC SYSTEMS

Company Profile

MineARC Systems is the global leader in the manufacture and supply of emergency safe refuge solutions for the mining, tunnelling, chemical processing and disaster relief industries.

With 20 years' experience, our dedication to ongoing research and development is driven by our key focus to continually offer the best and most advanced safety solutions on the market.

Our team of qualified engineers, electrical designers and technical experts form a global network across seven international locations including;

- Perth, Western Australia
- Johannesburg, South Africa
- Dallas, Texas
- Santiago, Chile
- Beijing, China
- Barcelona, Spain
- Guanajuato, Mexico

This allows MineARC to provide 24 hour service and engineering support to our expanding list of clients in over 60 countries across the globe.

All MineARC Refuge Chambers and Safe Havens comply with the highest international regulations and recognised 'world's best practice' industry guidelines. Our key focus on quality control and product advancement has meant that MineARC Refuge Chambers have successfully saved lives in multiple real life industrial emergencies around the globe.

www.minearc.com

mineARC SYSTEMS | BTI BREAKER TECHNOLOGY

ISO 9001:2008 Quality Management Systems

MineARC® HRM Refuge Live Risk Assessment Testing

Australian C-Tick Standards: AS4100-1998, AS3570.1-18, AS2208, AS3000, AS1716-15

Canadian Standards Association (CSA)

United States National Electrical Code (NEC) 2013/14

European CE Certified to Machinery Norms

MineSAFE Rescue Vehicle

Designed for ERTs during underground rescue operations.

MineSAFE
Rescue Vehicle

The MineSAFE Rescue Vehicle combines the safety and security of a high-quality refuge chamber with the manoeuvrability of a modern mine transport vehicle.

Engineered specifically for underground mining environments, this rugged vehicle gives emergency response teams the flexibility to safely extract injured personnel from the mine during a fire or other underground incident. Its 4-person occupancy, along with an integrated stretcher compartment, means that Emergency Rescue Teams (ERTs) can be dropped into emergency zones, while general personnel can be ferried to the surface.

MineARC Refuge Chambers have been successfully used around the world in multiple mine and tunnelling emergencies to save lives.

- ✓ **Purpose-designed vehicle for the underground mining environment**
- ✓ **Advanced braking and tramming, with hydraulic wheel drive**
- ✓ **4-person carrier plus secure stretcher compartment**
- ✓ **Pressurised control system**
- ✓ **Aura-FX digital gas monitoring**
- ✓ **CO_2 scrubbing system and automated oxygen delivery system**
- ✓ **Split system air conditioning**
- ✓ **Positive pressure drive cabin filtration system**

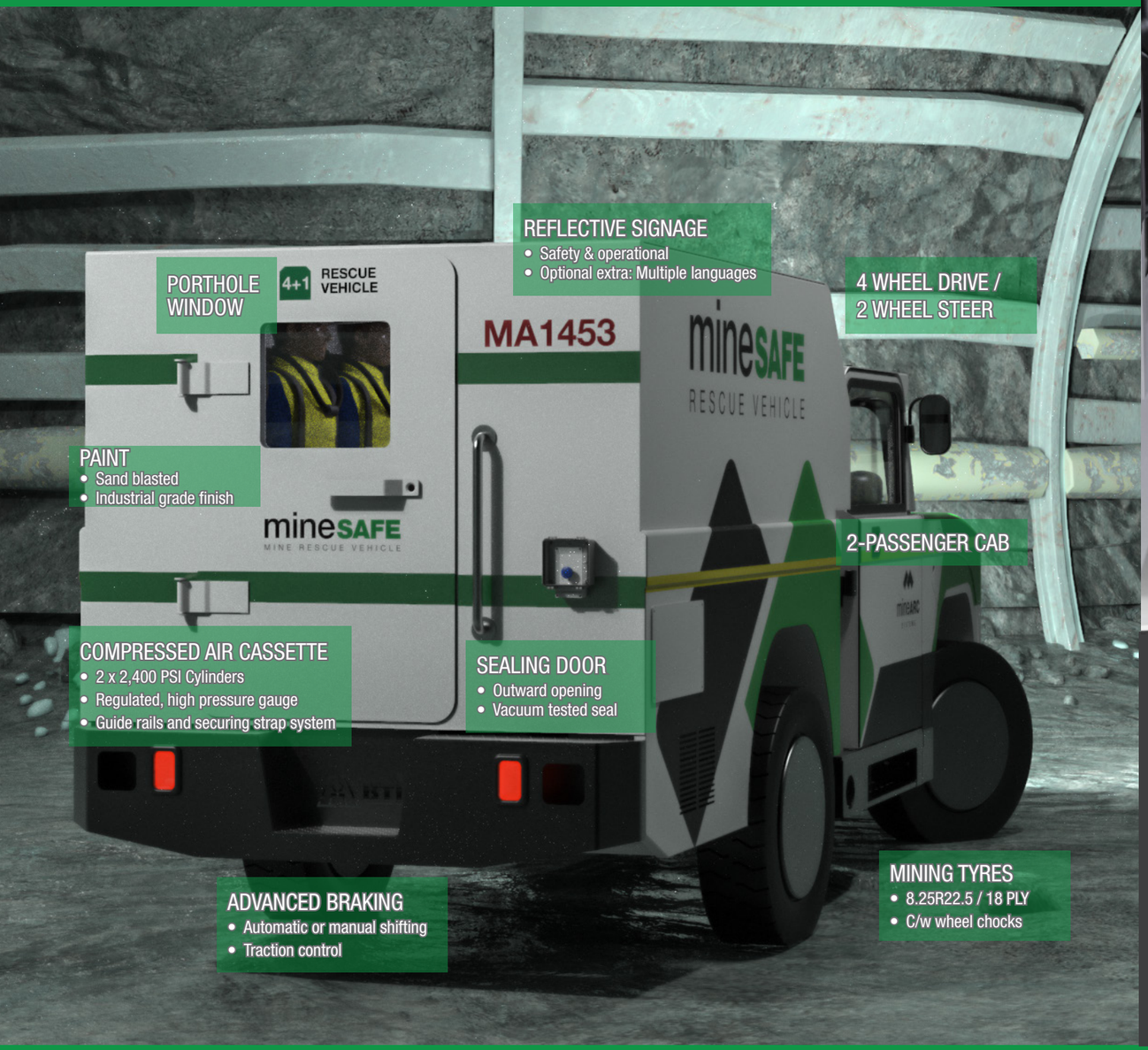
Rescue Vehicle Exterior

Unlike other emergency transport, the MineSAFE Rescue Vehicle has been specifically designed with the harsh conditions of underground mining in mind. The reinforced exterior and airtight carrier make it perfect for fast and effective emergency response missions.

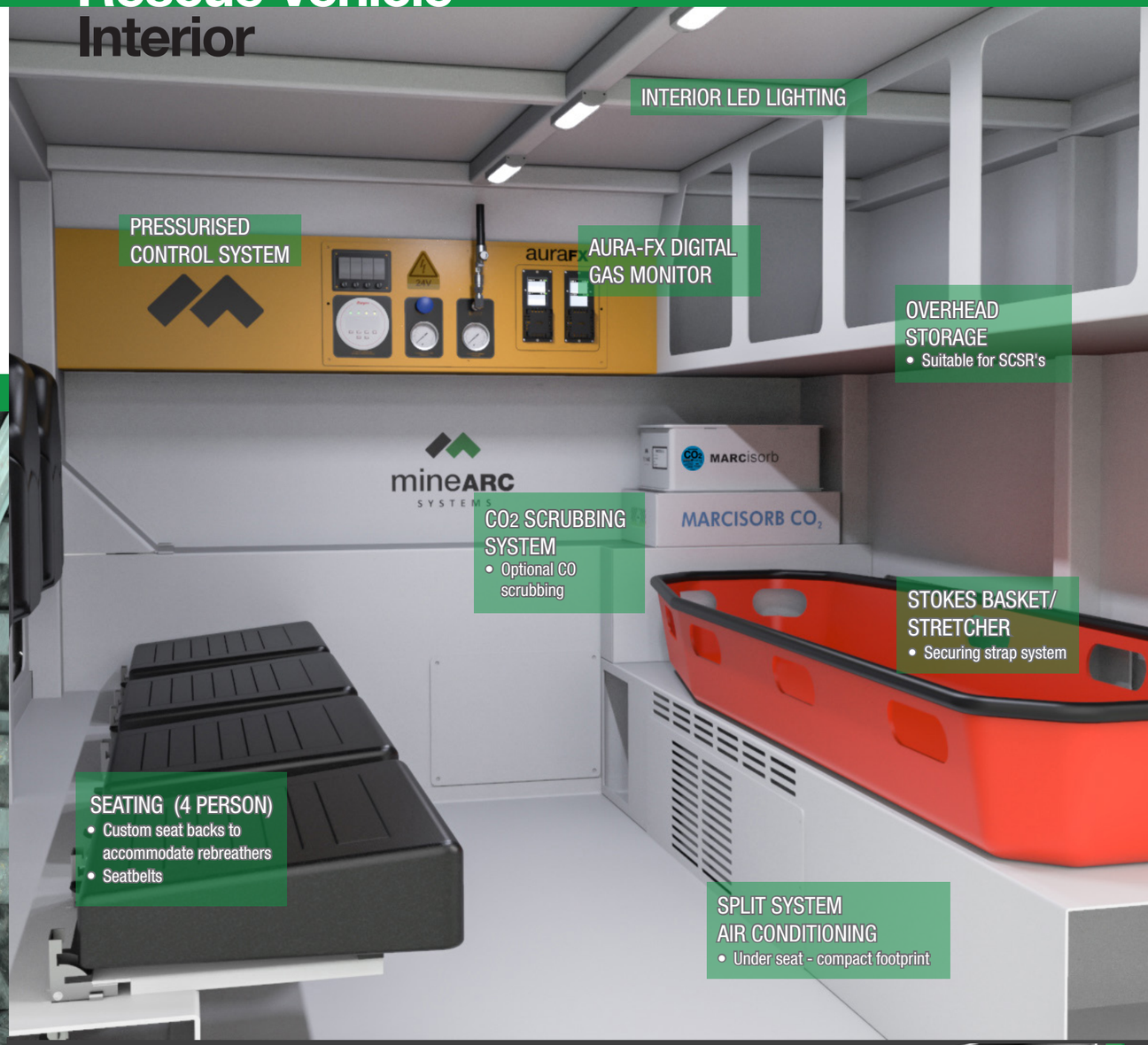
The base vehicle, designed and manufactured by **Breaker Technology Inc.**, boasts more power, less maintenance and a lower emissions footprint. Advanced braking and hydraulic wheel drive (HWD) ensure that the vehicle will perform in any tough condition.

The rear carrier features **MineARC System's** proprietary life support equipment; from the latest in gas monitoring technology to advanced breathable air management. A sealed, positive pressure environment prevents the ingress of toxins and smoke during rescue operations.

Custom seating and overhead storage provide space for rebreathers (SCSRs), while a purpose-designed stretcher compartment allows for the safe, secure transportation of injured personnel



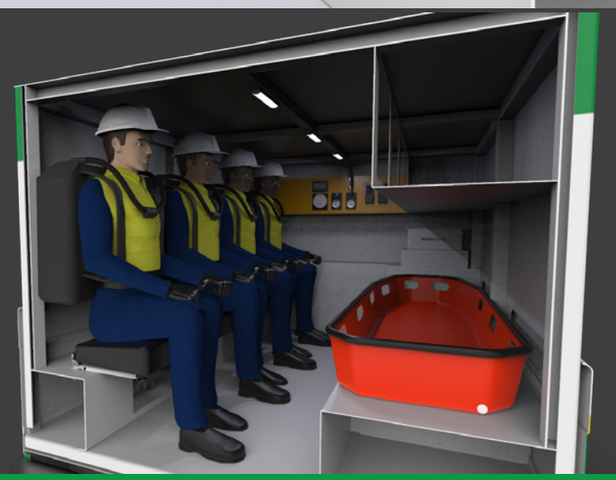
Rescue Vehicle Interior



Custom Seating

Purpose-designed seating is a unique feature of the MineSAFE Rescue Vehicle.

The ergonomically-considered seats have been engineered to accommodate the bulky nature of an ERT's rebreathers, and fold back to allow for additional space within the carrier during entry and exit.

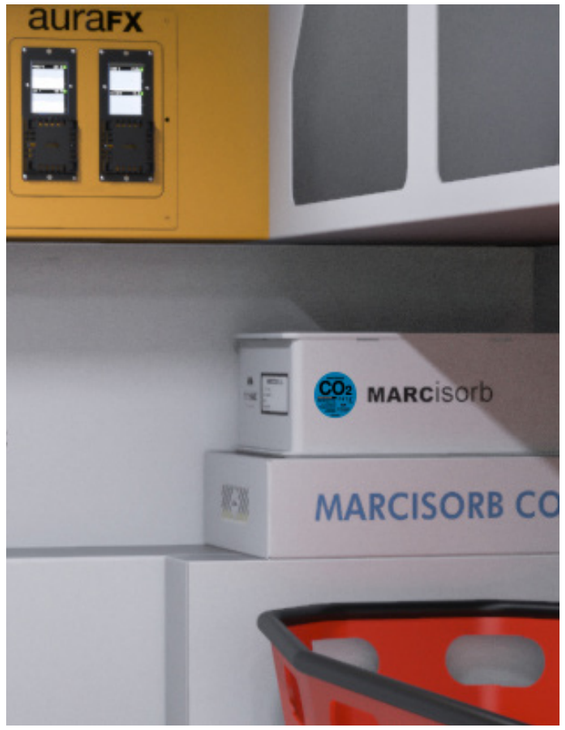


Rescue Vehicle
Rear Carrier Componentry

Breathable Air System

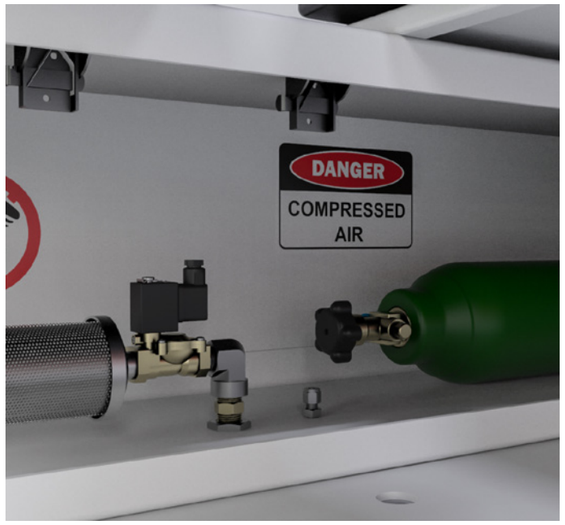
A compact Carbon Dioxide Scrubbing System uses pre-packaged MARCISORB chemical absorber cartridges. The custom designed, single-tray scrubber fits neatly into the rear carrier, steadily removing carbon dioxide from the air. MineARC's MARCISORB CO_2 cartridges provide superior scrubbing capacity, are easy to load, safe to handle, and can store for long periods.

An Automated Oxygen Delivery System (AODS) within the cabin is utilized in conjunction with the scrubbing system to replenish breathable air.



Aura-FX Gas Monitoring

MineARC's Aura-FX Digital Gas Monitoring System is a proprietary fixed gas monitoring unit, designed specifically for use in MineARC refuge chambers. The inbuilt Aura-FX has the ability to individually monitor up to three gases as well as ambient temperature via a series of user-friendly, digital screens. Audible voice alarms will prompt occupants to replace scrubbing chemicals or adjust oxygen supply levels in the cabin as required.



Pressurised Control System

The Pressurised Control System (PCS) is centrally located within the vehicle's carrier for ease of access and simple monitoring.

The PCS maintains internal positive pressure in the carrier to prevent the ingress of smoke and other hazardous gases during transport. Additionally, the carrier can be over-pressurised manually to allow for the rapid removal of gases that may enter during entry or exit.

The under-vehicle compressed air cassette supplies the PCS with enough positive pressure for a 4-hour rescue mission. Light weight and easy to handle, the cassette can be replaced in less than 10 minutes without any special tools.

MineSAFE
Ambulance

Designed for on-site paramedics for the use of patient extraction.

MineSAFE Ambulance

The MineSAFE Ambulance provides a unique solution to safe and secure patient extraction from underground mining environments.

This modern transport vehicle, engineered specifically for off-road mining environments, gives paramedics the flexibility to safely transport injured personnel to the surface. The rear cabin features space for two medics, as well as room for a stretcher and first aid equipment.

The unique design of the rear carrier makes transfer from the MineSAFE Ambulance to a traditional surface ambulance quick and easy.

- ✓ **Purpose-designed vehicle for the underground mining environment**
- ✓ **Advanced braking and tramming, with hydraulic wheel drive**
- ✓ **2-person carrier plus secure stretcher compartment with anchor points**
- ✓ **Five-point seat belt for rear cabin passengers**
- ✓ **Medical grade oxygen cylinder with flow meter and therapy masks**
- ✓ **Internal storage compartments for first aid equipment**

Ambulance Exterior

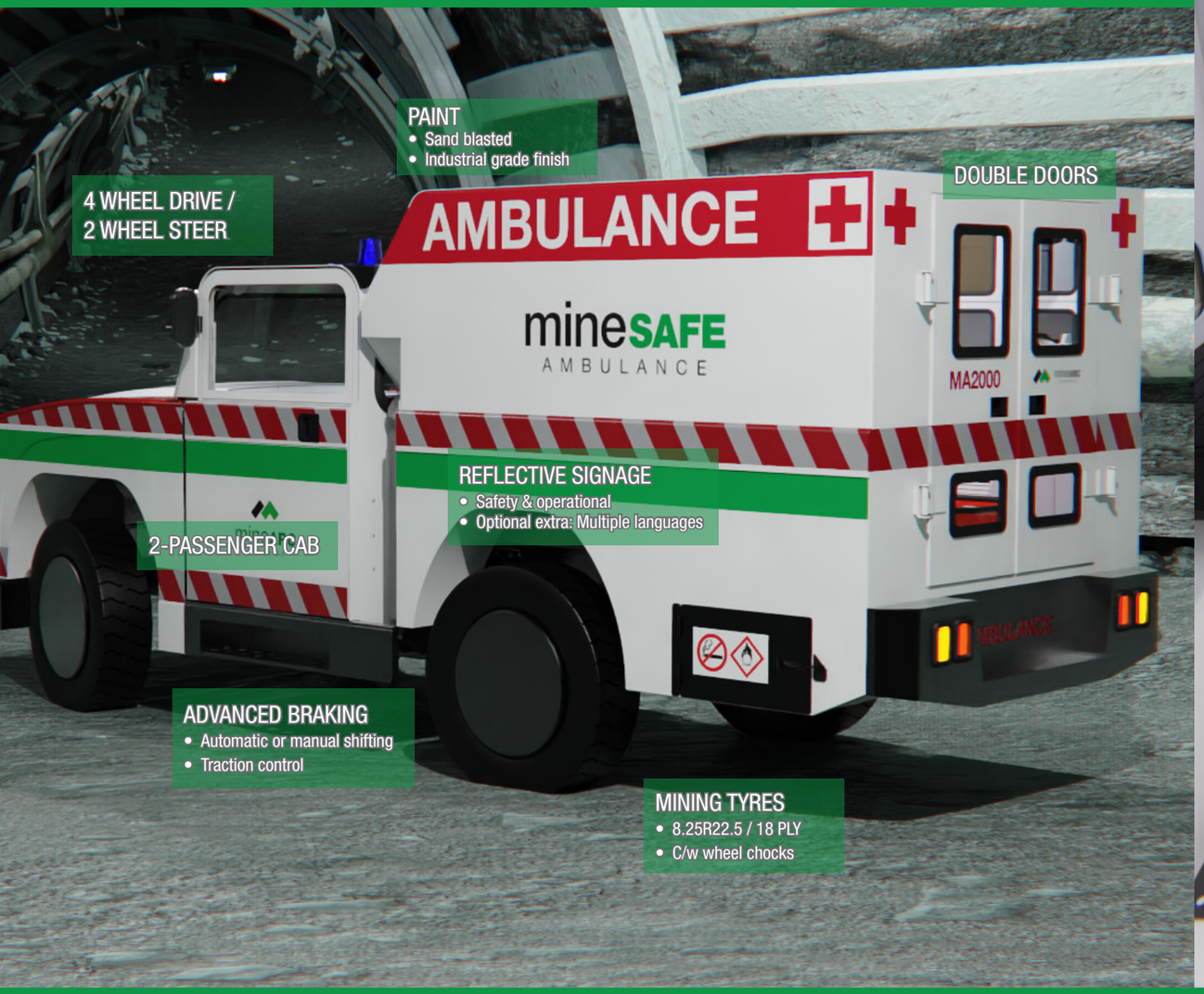
Unlike other emergency transport, the MineSAFE Ambulance has been specifically designed with the harsh conditions of underground mining in mind, with a reinforced exterior making it perfect for fast and effective patient extraction.

The base vehicle, designed and manufactured by **Breaker Technology Inc.**, boasts more power, less maintenance and a lower emissions footprint. Advanced braking and hydraulic wheel drive (HWD) ensure that the vehicle will perform in any tough condition.

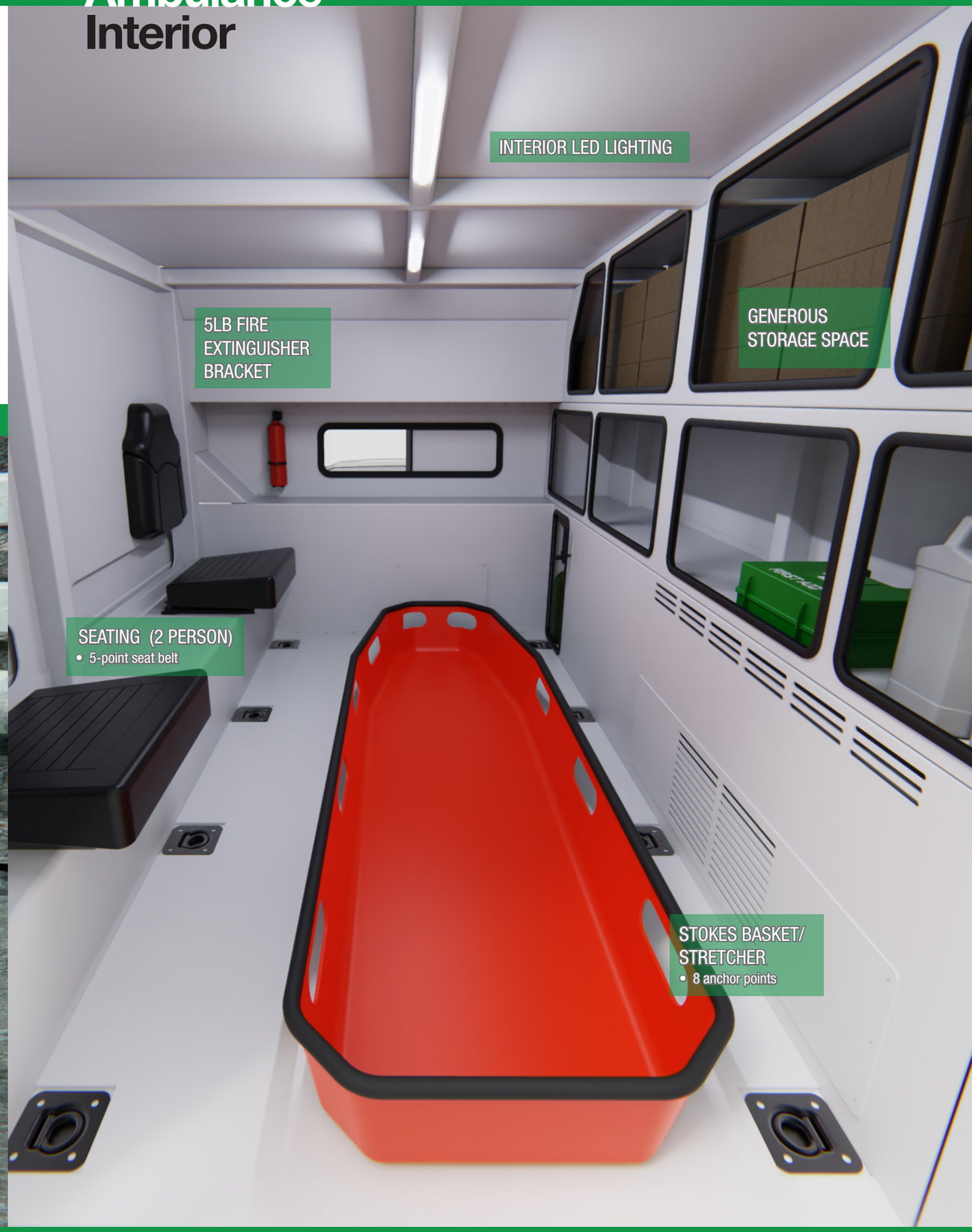
The rear carrier features custom seating and plenty of storage space for first aid equipment. Medical grade oxygen with therapy masks allow paramedics to administer oxygen during the process of transporting injured personnel to the surface. A fire supression system and external storage compartment are also standard features.

Optional features are available on request:

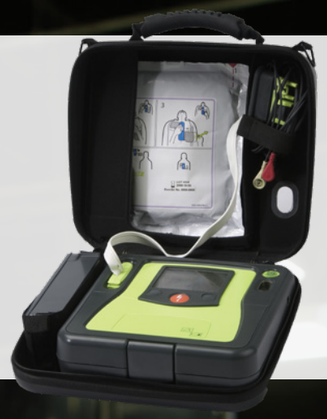
- Rugged Oxygen Generator
- ZOLL Automated External Defibrillator
- Rear video camera
- Park break release hand pump
- Rear cab work lights
- Engine block heater



Ambulance Interior



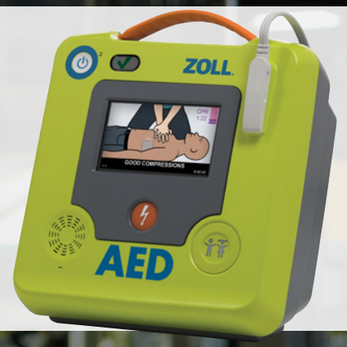
Optional Equipment



Whether in the field or in a clinical setting, the **ZOLL AED Pro Automated External Defibrillator** provides the right combination of support and services to help ensure a patient's safety and help improve a patient's chances of survival in a critical situations.

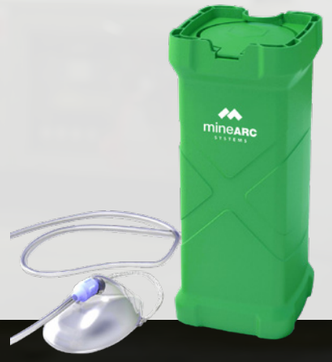
The AED Pro is ideal for first responders and medics, providing more advanced capabilities to the professional rescuer. It not only relays advanced CPR feedback, it also supports a vital signs patient monitor that can be configured based on personal preference.

Enclosed in a polycarbonate siloxane resin housing designed for military applications, the ZOLL AED Pro can be relied upon to perform in adverse conditions.



For most, performing CPR will be a rare and stressful experience. With the new **ZOLL AED 3 Defibrillator**, users are guided through the process of performing high-quality CPR and if needed, will deliver a potentially lifesaving shock to the heart.

The AED 3's Enhanced Real CPR Help technology features a full colour display with vivid rescue images, a CPR cycle timer and a large color bar gauge that shows compression depth. A calm voice provides audible prompts such as “Push Harder” or “Good Compressions". Further instructions include a pause during completion of a heart analysis, a clear alert when a shock is required, or if CPR should resume until trained personnel arrive.



The **Rugged Oxygen Generator (ROG)** is a portable, lightweight oxygen generator that delivers 90 litres of breathable oxygen for 15 minutes. Easy-to-use and small enough to carry in a backpack, the ROG gives immediate access to a potentially life saving oxygen supply.

Oxygen is produced by the thermal decomposition of sodium chlorate within the ROG. This decomposition requires a significant amount of energy input to drive the chlorate decomposition. The source of this energy is the oxidation of iron powder (formulated with the sodium chlorate as a fuel). The initial energy input from the interaction between chlorate and primer is generated by the initiation mechanism, in this case a phosphorous match.

Vehicle Specifications

BTI BREAKER TECHNOLOGY

Advanced Braking and Tramming

The MineSAFE Rescue Vehicle's primary and secondary braking systems are designed and tested to meet and exceed the CSA braking standard and performance for underground mining machines.

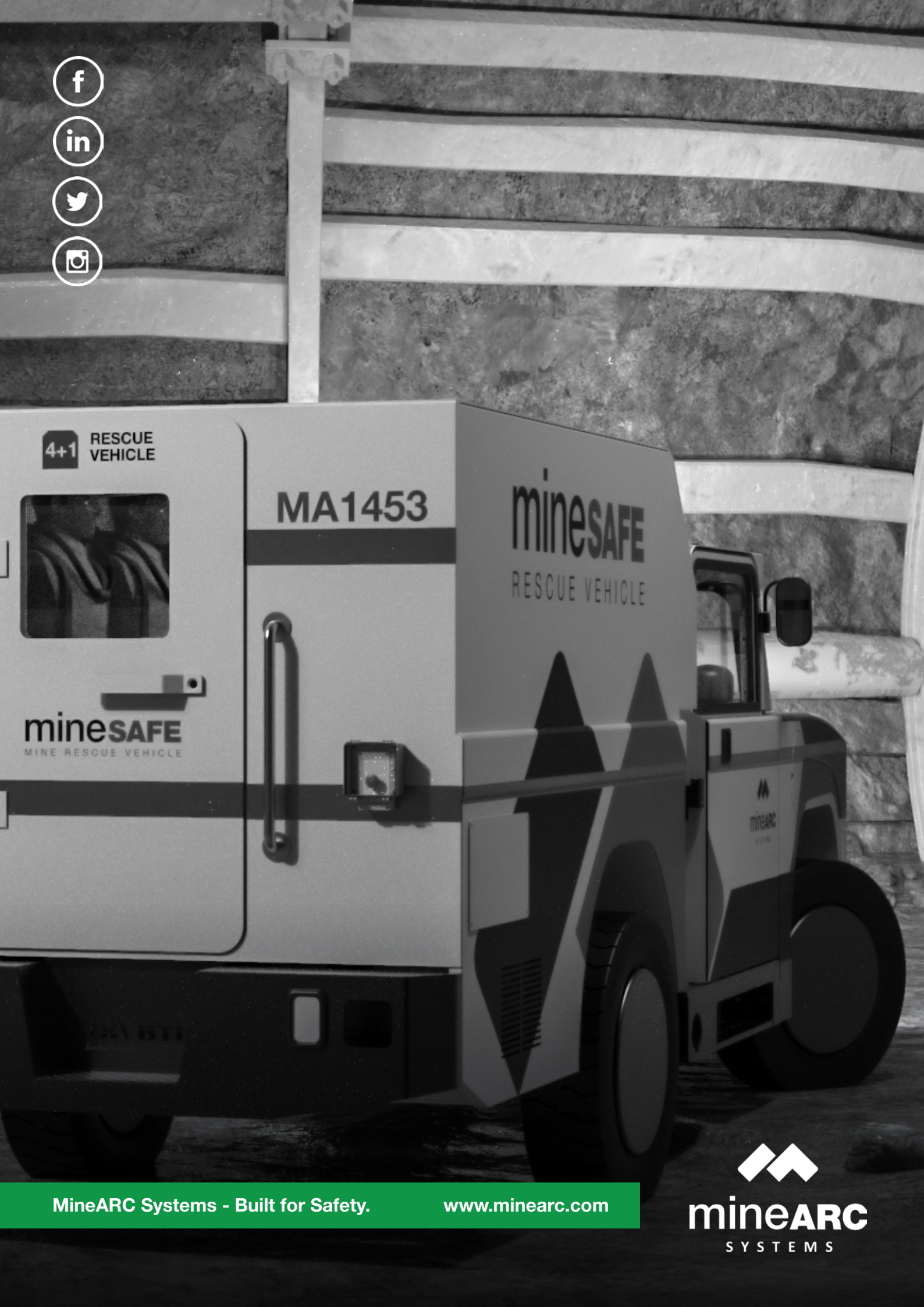
Service braking is accomplished using hydraulic pump and wheel motors, eliminating mechanical wear on parts. Using both accelerator and brake pedals for tram and braking control, the vehicle's Advanced Breaking and Tramming (ABT) system is smooth and seamless, with an automotive feel. With automatic or manual shifting and traction control, there are no underground conditions that are too tough to tame.

Hydraulic Wheel Drive (HWD)

The HWD powertrain provides optimised power delivery to each wheel independently, with up to 40% more overall efficiency beyond conventional transmission systems. This ensures the diesel engine is running within its optimal power band; delivering higher levels of performance.

Body Style	Center seated, engine forward
Suspension	Rigid Axles, with parabolic leaf springs and shock absorbers, approximately 7” of travel and 12” ground clearance
Top Speeds on 0-2% Grade (Loaded): 1st Gear: 2nd Gear: 3rd Gear: Automatic:	 13.7 mph / 22 km/hr 17.4 mph / 28 km/hr 25.0 mph / 40 km/hr 25.0 mph / 40 km/hr 13.7 mph / 22 km/hr
Top Speeds up 20% Grade (Loaded) Forward (Automatic) Reverse	 9.3 mph / 15 km/hr 9.3 mph / 15 km/hr
Engine	Deutz 2012 Tier III 129 HP / 96 KW @ 2200 RPM c/w CANMET or MSHA certified
Tyres	8.25R22.5 / 18 PLY - Mining Tyres c/w Wheel chocks
Controls	Automotive style, accelerator and service brake pedal Automatic and standard shift (1, 2, 3 & A Select, Forward and Reverse) Drive by wire 4WD Traction Control - minimal tire wear/scrub throughout entire turning radius

Fuel System	30 Gal Tank (113 L) / Pre-filter / Water separator with primer Dash mounted fuel gauge
Electrical System	24 Vdc 120 amp Alternator CAN based electronic control system Flame retardant wiring Lockable battery disconnect FWD/REV High output LED drive lights Roof mounted high output LED work lights FWD/REV Rear red LED marker/brake lights Back-up alarm Horn Roof mounted beacon light
Driver's Cabin	Safety glass windows, slider windows in doors Windshield wipers/washer system 2 independent adjustable seats with seat belts Cab pressurizer with RESPA® filtration system Fire Extinguisher Cab heating No hydraulics in the cab AC system Optional: ROPS/FOPS Certified
Options	Fire suppression system Hand pump manifold for release of Emergency Parking Brakes - for towing



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