KODIAK

FIERCE VEHICLE FIRE PROTECTION

The *KODIAK* Advantage - *Quality • Experienced Innovation • Made in the USA*

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FIERCE VEHICLE FIRE PROTECTION

Because it Absolutely Matters

Amerex vehicle fire suppression systems are manufactured at our facility in Trussville, Alabama and meet the requirements of the "Buy America Act". Our products are made in the USA so we can provide you with the quality and flexibility your operation demands - when you need it most.

Quality without Compromise and Experienced Innovation

The best mining operations are uncompromising when it comes to the quality and reliability of their vehicles. At Amerex, we believe the same should be true when it comes to protecting those investments from debilitating fires and loss of production. With the experience of over 100,000 fire suppression systems sold, the Amerex vehicle fire suppression team has developed the most innovative fire suppression systems in the industry. The *KODIAK* Fire Suppression Systems provide *Fast and Fierce Fire Protection.*

Why Amerex?

- **Quality**   Manufactured in the USA, we provide higher quality products and ship them to you quickly

- **Experience**   At Amerex, we use our experience to develop programs focused on understanding the mining industry and implementing processes of continuous improvement

- **Innovation**   Our dedicated vehicle systems engineering team uses advancements in technology to develop customized solutions for mining industry challenges

AMEREX
Quality is Behind the Diamond

The *KODIAK* Advantage - *Stored Pressure Agent Cylinders*

Dry - ICE Cylinders

Dry Agent Cylinders

ICE Liquid Agent Cylinders

Vehicles are different, and so are the protection agent options

We know that all vehicle hazards are not the same, so we offer three different suppression agent options to protect your vehicle.

- *Dry Agent Systems* - provide the fastest fire knockdown as well as getting into those hard to reach areas where fire may hide.

- *ICE Liquid Agent Chemical* - Provides suppression and cooling of heated surfaces to help prevent a fire from reigniting.

- *Amerex Dry-ICE Systems* - Combines the strengths of both agents and provides the best possible fire protection option by providing rapid fire knockdown with dry agent and the cooling effects of the ICE liquid agent system.

Why *Stored Pressure?*

- Prevents moisture from entering the cylinder and contamination of the fire suppression agent

- Agent is fluidized and ready to go when needed; no need for delays while the cylinder is being pressurized from an outside source

- Stored pressure cylinders have a pressure gauge which allows maintenance personnel to verify readiness

- Stored pressure cylinders can also be fitted with a pressure switch which detects a low pressure condition and notifies the operator via the control panel

Fast Fact

Cartridge operated agent cylinders require semi-annual inspection. National Fire Protection Association (NFPA) Standard 17 states: "If there is evidence of caking the dry chemical shall be discarded". "Dry chemical stored pressure cylinders shall not require semi-annual examination but shall require examination at least every 6 years".

The *KODIAK* Advantage - *Control Panel Options*

Features of the 17 Series panel

- Single detection and releasing zone

- 24 hour protection with battery backup diagnostic flash code for easy trouble-shooting

- Programmable discharge and alarm relays

Features of the SafetyNet panel

- Full network ability to add additional detection and releasing zones

- 4000 event log - time and date stamped, down loadable log for easy troubleshooting and incident investigation

- AMT—Automatic Maintenance Testing mode to significantly reduce maintenance time

- Supports natural gas detection and infrared flame detectors for combination fire and natural gas detection systems

Features of the SA2Z panel

- Two independent detection and releasing zones

- Self contained battery power supply with no power drain on the vehicle

- 100 event log with time and date stamped for easy troubleshooting and incident investigation

- Integrated manual release on panel

Fast Fact

Event logs can be downloaded and provided to the vehicle owner to verify testing has been completed and kept as part of that units permanent record.

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The *KODIAK* Advantage - *Fire Detection Options*

Linear Heat Detection cables have long been the industry standard and provide a continuous heat detection cable run inside the hazard area. The *Kodiak* Advantage has amped up the traditional cable with a more robust abrasion resistant outer jacket and factory installed connectors for reliability and ease of service. The cable is also available with a stainless steel wire protective covering for extreme environments.

Spot Heat Detectors are available in three different preset temperature settings for flexibility and provide rapid heat detection and system activation. Spot Heat Detectors have factory installed connectors for reliability and ease of installation and service.

The Kodiak IR3 Infrared Detector is the fastest responding detector in the industry, responding to fire within seconds. Faster response means less damage and less downtime. IR3 detectors "see" the fire by recognizing the light wavelength patterns thrown off by the hydrocarbon fire.
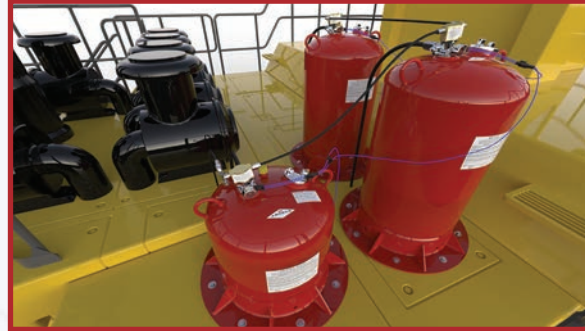
Fast Fact

Multiple types of detectors can be used on the same vehicle to provide faster response in high risk areas.

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The *KODIAK* Advantage - *ICE Liquid Agent Systems*

Amerex ICE suppression system

- **Amerex ICE System is an FM Approved, pre-engineered fire suppression and cooling system designed specifically for protection of vehicles**

- **Each system uses vertical and horizontal stored pressure agent cylinders discharging ICE agent to predetermined nozzle flow rates**

- **The ICE system works by blanketing liquid fuel surfaces preventing oxygen from combining with ignition sources and fuel**

- **Each system provides cooling of heated surfaces to reduce the chances of a fire re-ignition**

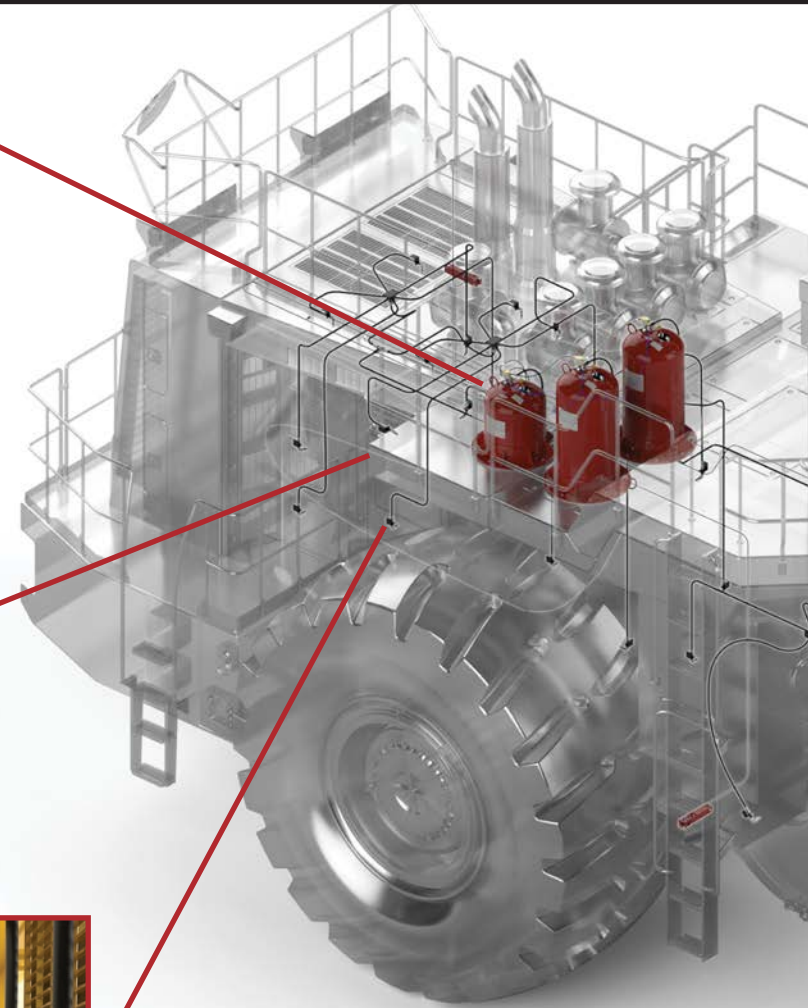- **Each system can operate within temperature ranges from -40F to 120F (-40C to 49C)**

Agent Cylinders

Detection Network

ICE Nozzles

Fast Fact

ICE liquid agent significantly reduces clean up time after a discharge by containing the agent to the hazard area.

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The *KODIAK* Advantage - *ICE Liquid Agent Systems*

17 Series Panel

High Flow Extinguisher

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Manual Actuator

Fast Fact

The Amerex ICE system is also highly effective on cooling and wetting ordinary combustible Class A materials.

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The *KODIAK* Advantage - *Dry-ICE Dual Agent Systems*

Amerex Dry-ICE dual agent suppression system

- **Amerex Dry-ICE System provides the best possible fire protection option by combining the rapid knockdown power of dry agent with the cooling effect of ICE liquid agent**

- **The dual agent is designed for simultaneous discharge or with a time delay between Dry and ICE release for an extended discharge for larger vehicles**

- **The Dry-ICE system meets the dual agent requirement of NFPA 122 12.3.6.1.1 for hydraulic/diesel excavators with hydraulic systems larger than 150 gallons**
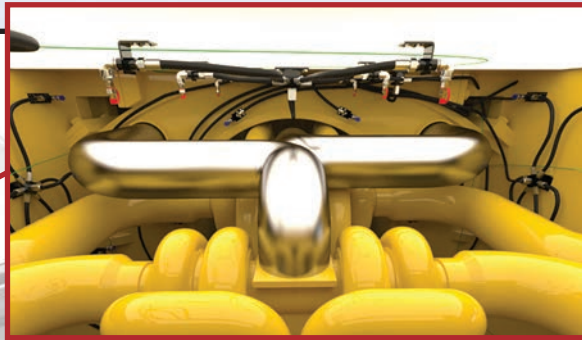

SA2Z Panel

Detection Network

Manual Actuator
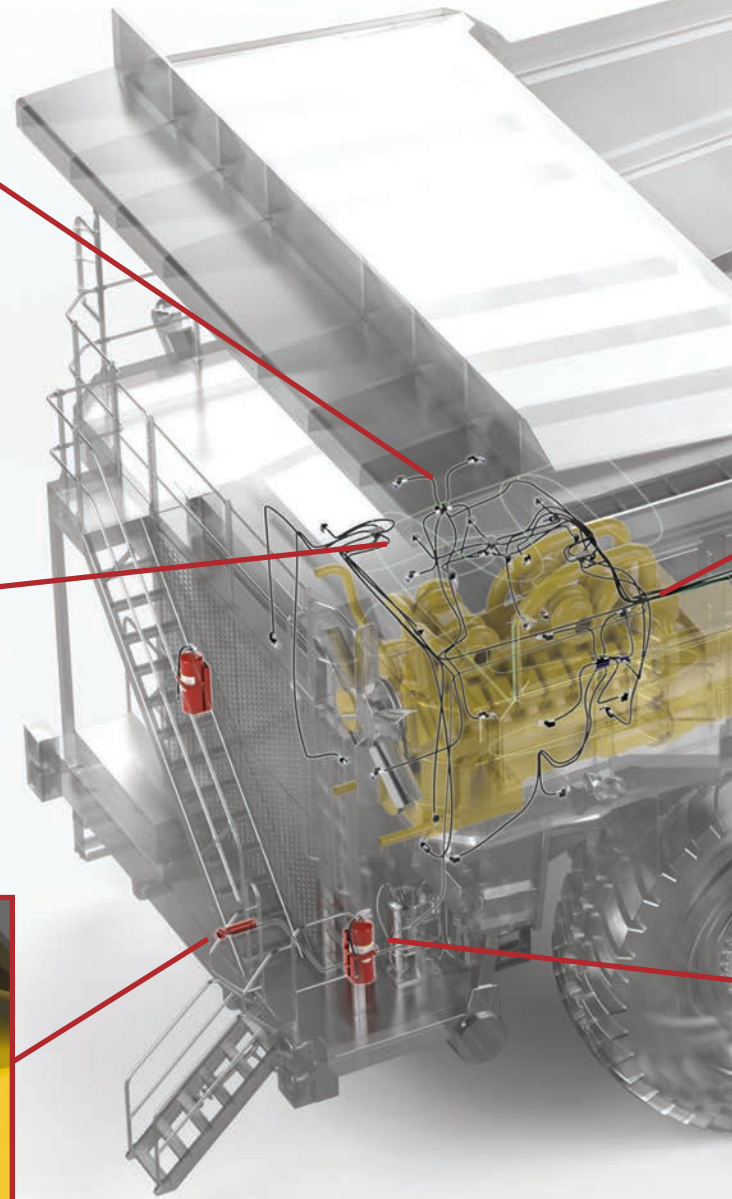
Fast Fact

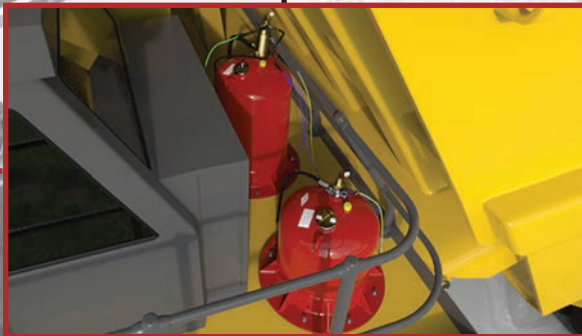**Amerex control panels have programmable discharge delays from 0-15 seconds in 5 second increments.**

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The *KODIAK* Advantage - *Dry-ICE Dual Agent Systems*

Engine Compartment

Cylinders

High Flow Extinguisher

◇ **FM** ◇
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Fast Fact

Fires on mining equipment with large volumes of hydraulics and diesel fuels can reignite after a fire is suppressed if the flammable fuel is not shut off, or the ignition sources aren't cooled.

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The *KODIAK* Advantage - *Amerex Fleet System*

The Amerex Fleet System

- **Allows maintenance supervisors to know which vehicles have disabled fire suppression systems at any given time**

- **Allows fleet operations managers to verify that all vehicles running are not in bypassed status**

- **Can notify cell phones of personnel that a system has been disabled**

- **Can be setup to provide a time and date stamped record of system status for documentation and event analysis**

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FLEET
MONITORING YOUR ASSETS • YOUR OPERATIONS

Once a vehicle is put into maintenance bypass mode, a wireless signal is sent to the selected individual devices
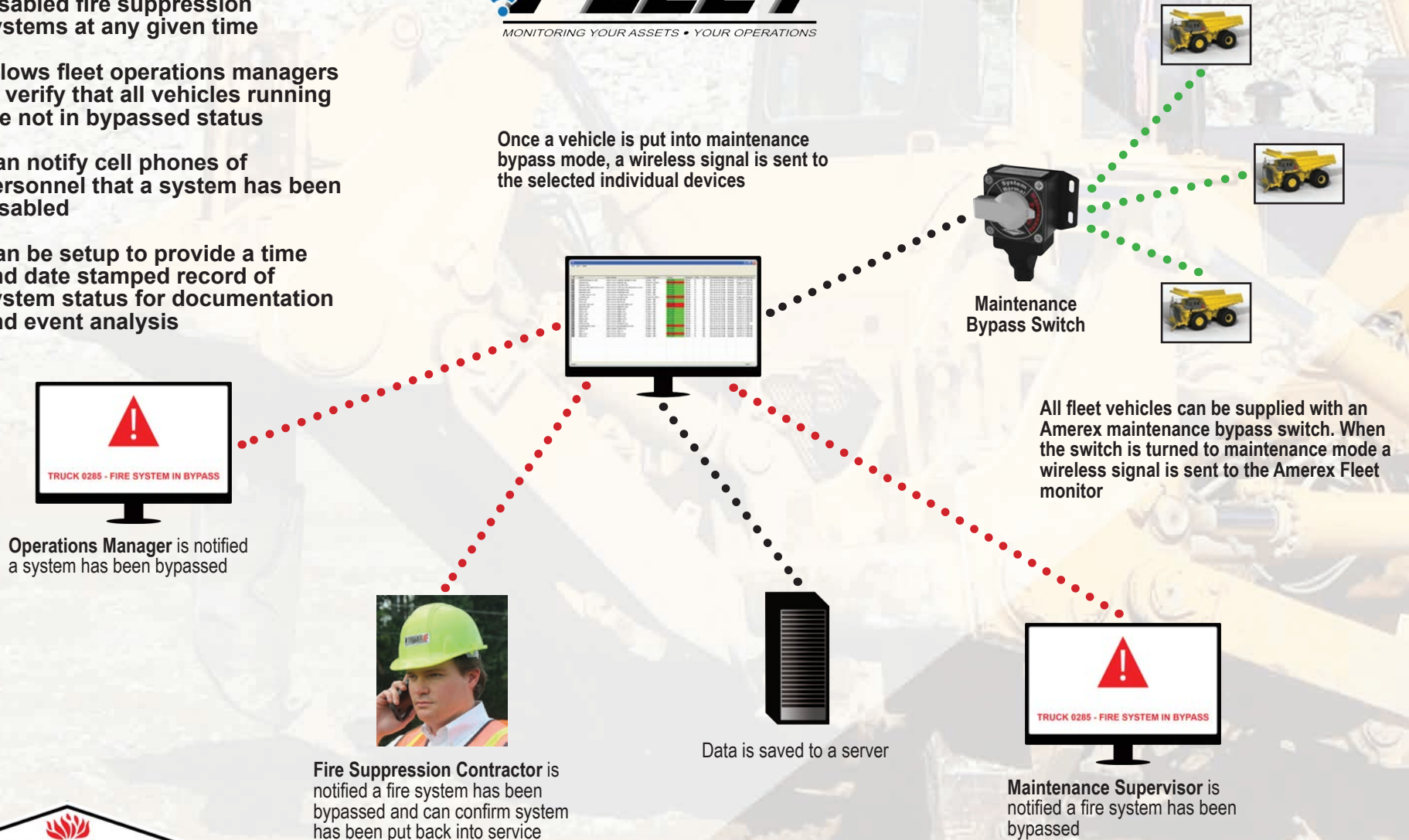
Maintenance Bypass Switch

All fleet vehicles can be supplied with an Amerex maintenance bypass switch. When the switch is turned to maintenance mode a wireless signal is sent to the Amerex Fleet monitor

TRUCK 0285 - FIRE SYSTEM IN BYPASS

Operations Manager is notified a system has been bypassed

Fire Suppression Contractor is notified a fire system has been bypassed and can confirm system has been put back into service

Data is saved to a server

TRUCK 0285 - FIRE SYSTEM IN BYPASS

Maintenance Supervisor is notified a fire system has been bypassed
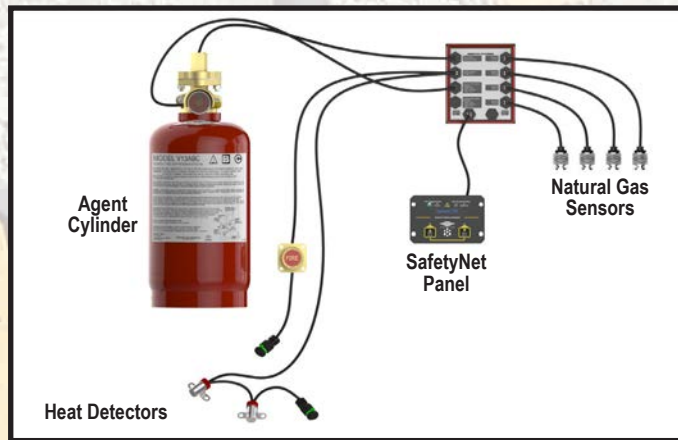
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Innovations In Technology

Natural Gas Detection and Fire Suppression Systems
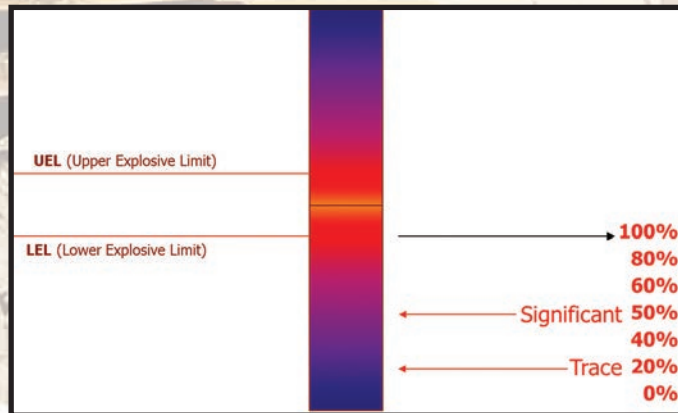
SafetyNet

Fire Suppression and Natural Gas Detection

Agent Cylinder

SafetyNet Panel

Natural Gas Sensors

Heat Detectors

AMGaDS IV

Natural Gas Detection System

AMGaDS IV Panel

Natural Gas Sensors

CNG

LNG

Natural Gas Engine

DANGER

NATURAL GAS

Natural Gas Sensor

UEL (Upper Explosive Limit)

LEL (Lower Explosive Limit)

100%
80%
60%
Significant 50%
40%
Trace 20%
0%
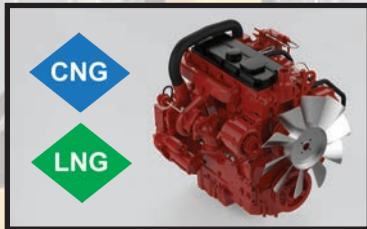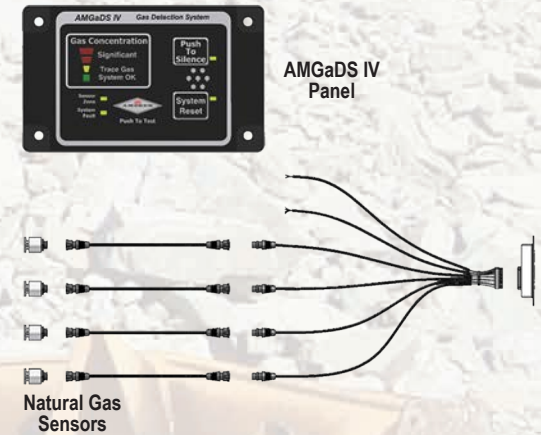
The Future of Mining includes *High Horsepower Natural Gas Engines.* Amerex has been the leader in natural gas vehicle detection for over 20 years. The AMGaDS IV system provides gas detection to notify the Operator of a gas leak. The Amerex SafetyNet system provides both gas detection and fire suppression capabilities

CNG

LNG

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