



**Maco Corporation INDIA Private Limited (MACO)** is a solution provider in mining sector for last two decades. MACO represents world class technology in mining.

Maco provides **ANSUL, USA brand Auto fire Detection and suppression system** for all kind of off-road mobile HEMM, and other engineering solutions like **Clutch & Brakes (Danfoss, USA), Ground Engaging Tools (ESCO USA), Refuge Chambers for UG Mines (MineARC Systems, Australia), High Performance Wire ropes for underground mining (WIRECO, Germany), Mine Ventilation Monitoring System (Maestro, Canada)** and other accessories products for mining industry to meet your mining requirements in both open cast and underground Mines on Pan India basis.

We have earned recognition as a critical equipment / product supplier and service provider in the mining sector. Our service support centers are located in West Bengal, Rajasthan, Jharkhand, Odisha, Madhya Pradesh, Chhattisgarh, Hyderabad and Bangalore.

MACO has a comprehensive service support system. All service people are trained by our principal / partners as per Inter- national Standard.

We have central warehouse in West Bengal and other storage facility at different location, which can fully meet market demand and avoid machines stop caused by parts shortage. We provide solutions round the clock to ensure equipment can be restored on an immediate basis.

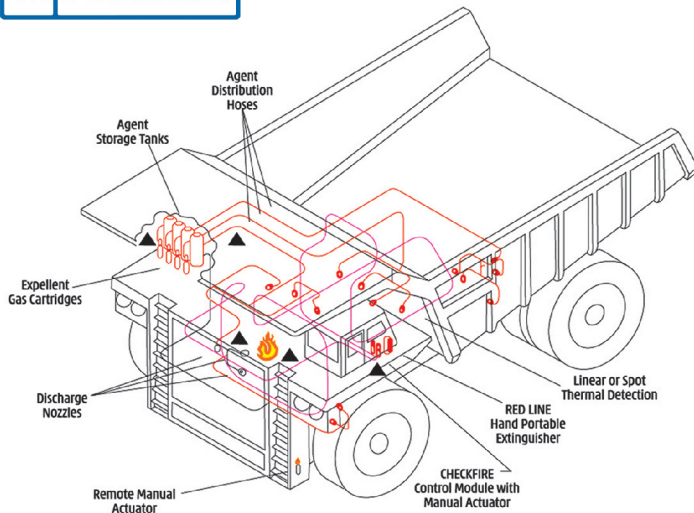
1967 Year of Establishment

1000+Clients

500+Employees

35+Partners





## Automatic Fire Detection and Suppression System

The **ANSUL** brand promises a full range of quality fire protection solutions from automatic detection and suppression systems (AFDS) to a complete line of wheeled and hand portable fire extinguishers and more. ANSUL is global leader in AFDS system and having approval from FM, MSHA, UL & CE.

The Automatic Detection System works in combination of Control Module- CHECKFIRE system and Dry chemical /Liquid Vehicle System (LVS) / Inergen system along with pressurized expellant Gas Cartridge to provide around-the-clock, automatic, fire detection and actuation. The rugged products are designed to withstand shock, vibration and extreme environmental conditions.

### A-101 Off-Road mobile Equipment Fire Suppression System

Protecting Heavy equipment 24 x 7 | Having Internal Battery | Effective System with fast Flame knockdown | Constant Pressure for Entire discharge. | International Approvals

#### • Dry Chemical System

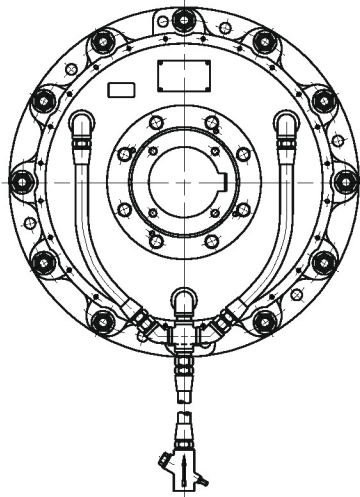
FORAY (mono ammonium phosphate base) dry chemical agent for Class A, B, and C fires. | Dry Chemical and the tank capacities are designed for use on off-road mobile mining equipment. | The dry chemical is discharged through fixed nozzles into the protected areas, suppressing the fire. | The dry Chemical tank remains in Zero Pressure and having shelf life of around 10 years | Doesn't form solid and cake due to special salt characteristics.

#### • Liquid Vehicle System (Non Fluorinated)

LVS (Liquid Vehicle System) agent is a wet chemical agent that is a unique blend of organic and inorganic salts, coupled with surface active ingredients to protect off-road mining equipment. | NON FLURINATED Chemicals, safe for the environment. This blend provides a strong measure of freeze protection along with the foaming properties associated with conventional Class B liquid agents. | The agent flows readily into areas where flammable liquids may settle. | Provides both fire suppression and superior cooling of super-heated surfaces while blanketing the fuel and cutting off oxygen to help prevent reflash.

#### • INERGEN Gas System

The INERGEN Fire Suppression System is an engineered clean-agent system utilizing a fixed nozzle agent distribution network. | The system is designed and installed in accordance with the National Fire Protection Association (NFPA) Standard | The INERGEN system will suppress surface burning fire in Class A, B, and C hazards by lowering the oxygen content below the level that supports combustion. | INERGEN agent is a mixture of three inert gases. | The INERGEN Fire Suppression System actuates at 200 Bar (2900 psi) pressure during discharge.



## Clutch & Braking Solution For Mining Equipment

EATON AIRFLEX now acquired by Danfoss is, the World leaders of industrial Clutches and Brakes have been the original supplier to all the Global Mining Equipment OEMs' like BEML, HEC, Marion, Bucyrus International, Caterpillar, Terex etc.

### Emergency Brakes fitted on Electric Motors used for -

Crowd Application | Hoist Application | Drag Application | Swing- Application | Propel Application

### Features and advantages of Airflex Pneumatic Disc Brakes

High level of torque absorption. Immediately stops the swing motion after application of brakes that prevent bucket from hitting the face of mine wall.

Most effective Emergency breaking action when loaded bucket is required to be stopped immediately during lifting/hoist action. Takes care that the combined load i.e. load of OB, self weight of bucket and gravitational action is countered by complete absorption of twisting force generated in the motor shaft.

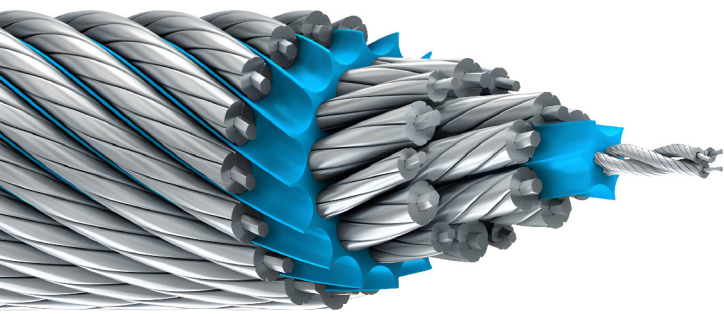
Spring action immediately holds the rotating motor shaft through disc with in seconds of air supply snap. An important safety measure that prevents probability of accidents and takes care of safety concerns.

Torque absorption capacity exceeds Recommend Levels by 3.5 Times! Highest safety factor considered to ensure reliability of Emergency Brake.

Brake is made up of components that are stacked together on studs, which provides excellent heat dissipation.

Airflex disc brakes are dynamically balanced hence eliminates vibration problems and the rotors have a high heat sink capacity to absorb the heat generate during emergency stops.

The Airflex units have a larger friction material surface area and total lining volume than competitive designs of the same size. This provides excellent wear resistance, high energy capacity and infrequent component replacement.



## HIGH PERFORMANCE ROPES UNDERGROUND MINING

### High Performance Casar Mining Ropes

CASAR stands for highest technical demand. All wire ropes are developed by the use of special computer technology and approved at one of the various test facilities. CASAR Special Wire Ropes are known all over the world because of their high breaking loads, their excellent rotation resistance and their particularly long service time.



### PROPERTIES



Swivel



Lubricated



Tolerance



Plast rope



Compacted



Ultra Deep

- High performance mining rope
- Fully lubricated
- Plastic layer between steel core and outer strands
- Very high breaking force
- 80% Increased service life



**coalSAFE**  
INTERNATIONAL HIGH SEAM



**mineSAFE**  
ESSENTIAL DESIGN

## Underground Refuge Chambers

**Refuge Chambers** are designed to provide a refuge or 'safe heaven' for miners suddenly trapped in hazardous or toxic environment. Refuge chamber capacity starts from 6 persons to 20 persons seating capacity.

MineARC is the global leader in the manufacture and supply of emergency refuge chamber. They have supplied refuge chambers in operations to over 40 different countries.

MineARC's CoalSAFE refuge chambers are approved in United States by the West Virginia office of Miners' Health, Safety and Training and are built to the Mine Safety and Health Administration (MHA) federal regulations '30 CFR Refuge Alternatives for Underground Coal Mines'.

MineARC is the only refuge chambers manufacturer in the world with an ISO: 9001 quality rating.

### Standard Features of Intrinsically Safe Chamber

- Breathable Air System
- CO<sub>2</sub> & CO scrubbing system
- Pre-Packaged Chemical cartridges
- Powerless Cooling & Dehumidifying
- 100 hours minimum life support
- 15 PSI blast resistant
- Internal & External Gas Monitoring
- Communication Ports
- Ergonomic Designed Seating
- Emergency Repair Material
- Lifting & Towing Eyes
- External Toilet Disposal System
- First-Aid Kit | Fire Extinguisher

## Other Products



**Digital Gas Monitoring**



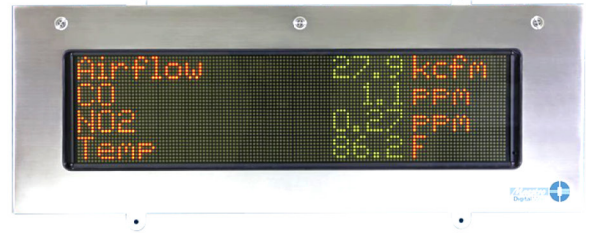
**enviroLAV**



**stenchGAS**



**Cooling Vest**



**Maestro Digital Mine manufactures Industrial Internet of Things (IIoT) devices and last mile digital networks for the underground mining sector.**

**Real time Gas and Airflow Monitoring system through Vigilante AQS™ from underground metal mines.**

- Vigilante AQS™ is an IIoT device and can be powered through PoE switch and can transfer data to control room through customer existing network.
- The Vigilante AQS™ accurately measures airflow and direction, wet and dry bulb temperature, gas concentration and dust particulates; reducing downtime and enabling miners to return to the face sooner and safer.
- Reduces post blast re-entry by ending physically checking of gas levels by section Foreman's and Mining Mates, which increases production after blasting.
- The Vigilante AQS™ aids the reduction of the mine's greenhouse gas emissions and global warming initiatives, providing energy savings by reducing the ventilation demand by 20-50%; bringing critical data and control capabilities to increase productivity and enhance worker safety through Ventilation on Demand (VOD) by measuring Airflow.

**Data and power using flexible coaxial cable through Plexus PowerNet™ in underground metal mines.**



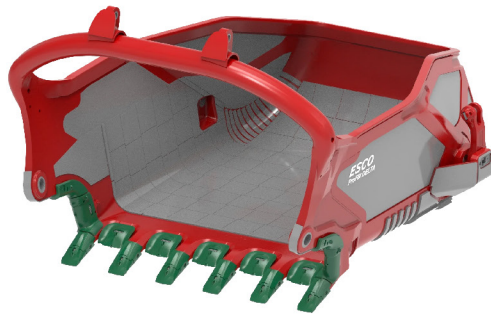
- The first gigabit network providing both data and power using flexible coaxial cable.
- Plexus PowerNet™ delivers a high speed, low latency digital communication network that provides PoE+ power to Access Points (APs), cameras and other IP based devices.
- Eliminates the need for costly outside fiber optic contractors and can be installed and maintained by any internal tradesperson. Easy to power, install, advance, and repair.

**MaestroLink™ Server**

- MaestroLink™ Server is a networked-based software platform that monitors all of Maestro's equipment underground and enables troubleshooting from surface as well as real-time measurements and trending functions.
- It can detect network problems, communication problems, and sensor problems using the diagnostic data.
- Data from all Vigilante AQS™ and PowerNet™ can be summarized in one dashboard for a particular mine.



The feeds/data from Maestro Products can be synchronized with customer existing network.



## ESCO® Dragline Buckets, Rigging and Accessories

Building on nearly a century of innovation, ESCO Corporation is a global group of companies that manufactures metal parts and components for industrial applications.

ESCO products are trusted at mines worldwide for improved productivity and safety.

Over 100 years of dragline experience has culminated in ESCO's most innovative dragline bucket ever. A bucket that fills faster, uses less drag energy and delivers exceptional productivity.

### Increased productivity

- Faster cycle times
- Higher fill factors on average
- Consistently higher payloads

### Improved safety

- Safer, quick-change
- **Hammerless G.E.T.**

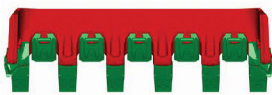
### Reduced maintenance

- Increase in operating time between required refurbishing
- Requires less drag energy, extending drag rope life and reducing loads on drag motors
- Longer-lasting ESCO cast components for less maintenance.

## CONFIGURATION OPTIONS

ESCO's engineering team collaborates with you to tailor the optimal ProFill bucket configuration to best meet your site's needs. Below is a sampling of some of the available options.

### LIPS



Straight lip

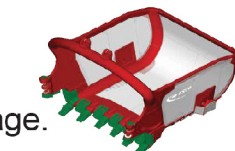


Reverse Spade Lip (recommended)

### ESCO REVERSE SPADE LIP (RSL)

A proven ESCO innovation that provides faster fill times than conventional straight lips. As the bucket engages the cut, the rear of the bucket lifts slightly, pulling the center teeth out of the material and concentrating the force on the corner teeth for maximum digging efficiency.

More cast components.  
Higher quality cast components.  
The ESCO advantage.



### ARCH ANCHOR BRACKETS



Male Arch Anchor Brackets



Female Arch Anchor Brackets

### PRO SERIES CHAIN



### HITCHES



Horizontal Hitch



Vertical Hitch (recommended)

### VERTICAL HITCH

Reduces stress loads and provides better weight distribution for improved digging performance. Increases drag chain clearance while chocking.

### DRAGLINE SHROUDS & G.E.T.

ESCO offers a comprehensive range of dragline-specific components, engineered for maximum digging efficiency and increased safety.





## Safety Products-

### Operator Fatigue Monitoring System:

Operator Fatigue Monitoring System uses cameras, infrared sensors, or biometric data (like eye movements, blink rate, head position, or steering patterns) to identify signs of drowsiness or inattention. When fatigue or distraction is detected, the system issues warnings through alarms, vibrations, or visual alerts to prompt the driver to stay alert or take a break, enhancing road safety



### Rear View Camera:

Rear-view camera captures video footage while reversing, providing real-time visual assistance to avoid obstacles. It comes with the optional features that records the footage to an internal storage for up to 24 hours, useful for evidence in case of incidents.



### 360-Degree Camera:

360-degree camera provides a bird's-eye view of the vehicle's surroundings using multiple cameras placed around the car. It stitches these views together to help the driver navigate tight spaces, park, or avoid obstacles more effectively.



### Proximity Sensor:

Proximity sensor detects objects around the vehicle using electromagnetic signals. It alerts the driver to obstacles, enhancing safety while parking or manoeuvring in confined spaces.



### Electronic Mirror System:

Electronic mirror system replaces traditional mirrors with cameras and digital displays, offering a wider field of view, reduced blind spots, and clearer visibility in poor weather or low light conditions.



### Seat Belt Warning System:

Seat belt warning system detects if occupants are not wearing seat belts and alerts them through visual or audible signals. It enhances passenger safety by encouraging seat belt use while driving



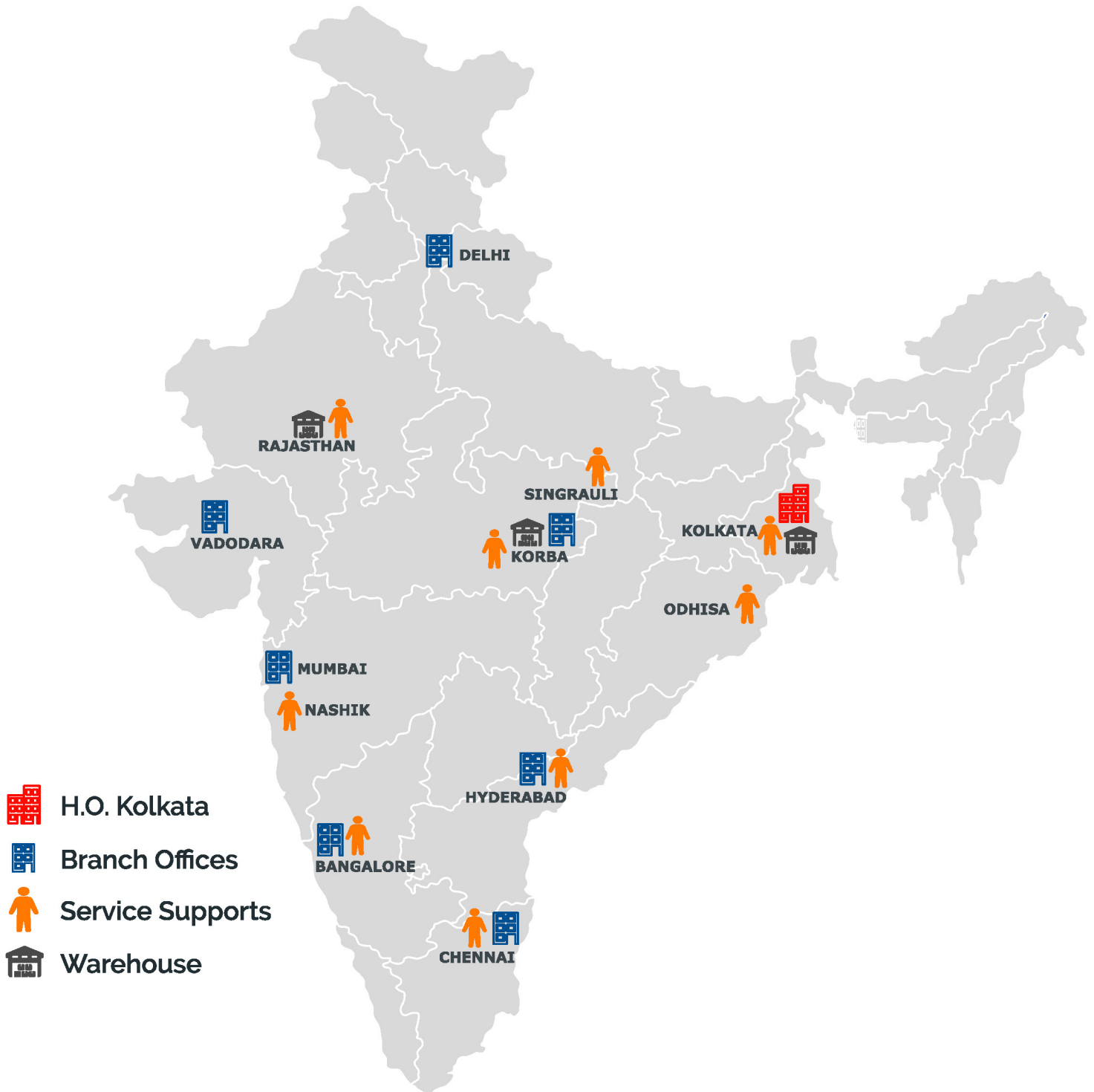
### ADAS AI Dashcam:

ADAS AI Dashcam is an all-in-one device with a built-in 4G/WiFi/GPS antenna and DMS camera. It features a 2K front camera for real-time monitoring and ADAS functions like lane departure and forward collision warnings. The device also monitors the driver's status, providing audible and visual alerts for abnormal behavior. Compact and easy to install, it supports remote monitoring and alarms, enhancing fleet management efficiency.



For More Product Details  
Please Scan the QR

## Our Presence accross India



## Our Major Clients

### End User



HINDUSTAN ZINC LIMITED



Coal India Ltd.



एनएमडीसी लिमिटेड  
NMDC Limited



### OEM





Minning\_SEPT\_2024



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