



MATRIX

Engineering Safety
Advancing Automation

IntelliZone[®]HD Proximity Detection

IntelliZone[®]HD
PROXIMITY DETECTION



- **For mobile haulage, mining machines and light-duty vehicles**
- **Precise worker location & dynamic zones**
- **Lowest Cost of Ownership**

The Matrix IntelliZone[®]HD proximity detection system allows users to create customized Caution, Shutdown and Operator Zones around mobile mining equipment. IntelliZone detects workers in low-visibility or obscured line-of-sight locations while allowing the operator to work in a safe location.

Matrix IntelliZoneHD is durable, simple to operate and easy to maintain. Personal locators worn by support workers are compact (cell-phone sized), robust, simple to use and easy to maintain.

www.matrixteam.com 

Phone: 812.490.1525 • Fax: 812.490.1582 • 3299 Tower Drive • Newburgh, Indiana 47630 • email: sales@matrixteam.com



- **SharpZone™ technology minimizes false alarms and allows long-range, through-curtain detection**
- **Shaped zones allow precise location of support workers without reducing production**
- **Lowest cost of ownership**

The Matrix IntelliZone® proximity detection system helps train personnel to stay clear of danger zones present around mobile mining equipment. The system is designed for use on all brands of mining machines, shuttle cars and other mobile underground equipment.

- **Proven Technology in U.S. Coal Mines** – first introduced in 2009, more than 90% of all US underground coal mines operating with proximity detection systems use Matrix technology.
- **Highly Reliable** – machine-integrated “Drivers” are compact and robust for maximum uptime, and manufactured for harsh operating conditions.
- **Service & Support** – all Matrix IntelliZone systems are backed by Matrix’s outstanding field service technicians and distribution network.
- **MSHA Approved** (IS/XP version for use in underground coal mines)

The MOST ADVANCED proximity detection system operating worldwide in underground mines



Locator

The IntelliZone Locator uses audible and visual alerts to warn personnel of potential danger.

The Locator is compact, lightweight, simple to use and powered by a rechargeable battery.

All IntelliZone Locators for underground coal mines are Intrinsically Safe (IS).



Programmable Safety Zones

SHUTDOWN ZONE

Immediately shuts down equipment when locator detected in this zone.
Constant tone warning and flashing red light on driver & locator.
Operation resumes when locator leaves zone

OPERATOR ZONE

Created by Matrix SharpZone technology when shuttle car is loading.
Allows operator to stand in a safe position without triggering the Caution Zone warning.

CAUTION ZONE

Beeping tone warning and flashing yellow light on locator.
Flashing yellow light on driver.

SharpZone™ Technology for Precise Programmable Awareness Zones

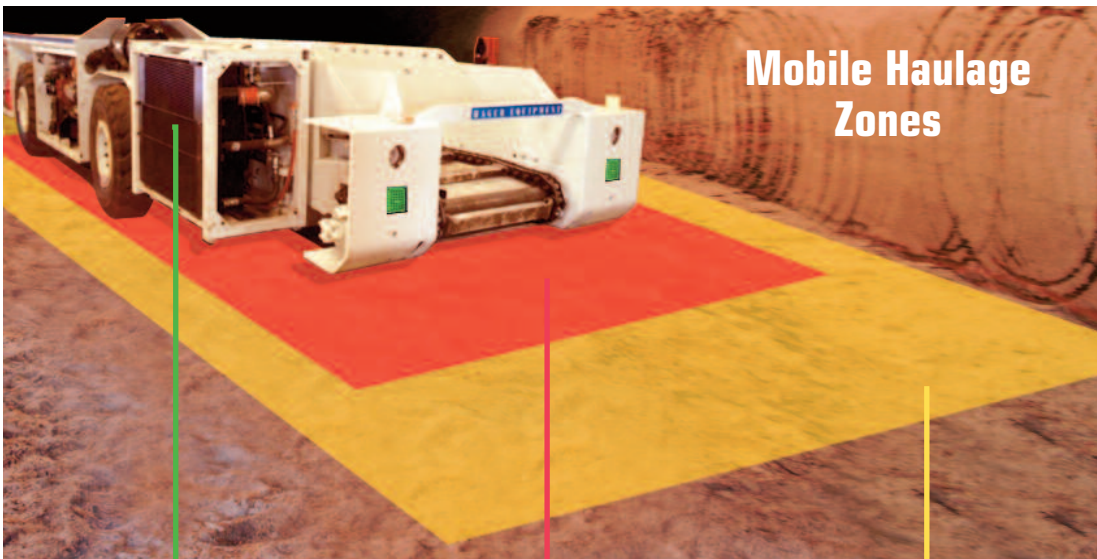
IntelliZone® HD PROXIMITY DETECTION

Matrix's leading-edge SharpZone technology creates equipment-specific straight line and angled safety areas for the most effective Caution and Shutdown zones. These zones help protect miners from mobile equipment injuries and minimize nuisance warnings or shutdown. For example:

- Mobile haulage awareness zones vary based on speed and direction of travel. Higher speed means longer forward zones to allow for higher stoppage time.
- Mobile haulage awareness zones can “see” through curtains to help avoid worker collisions.
- Zones around CM tail automatically shrink in cutting mode and expand while tramming.
- Customized “green” zones can be generated within the awareness zones to allow operators to stand, kneel or, if appropriate, ride in safe locations without setting off a zone alert.

SharpZone™ TECHNOLOGY

Unlike other prox systems, **Matrix IntelliZone** creates machine specific **straight-line and angled zones** which automatically change depending on the operational status of the equipment.



Mobile Haulage Zones

Zones Extend as Speed Increases

As shuttle car speed increases, the zones increase in length to accommodate the longer required stopping time.

The zones can “see” through obstacles which helps protect workers.

OPERATOR ZONE

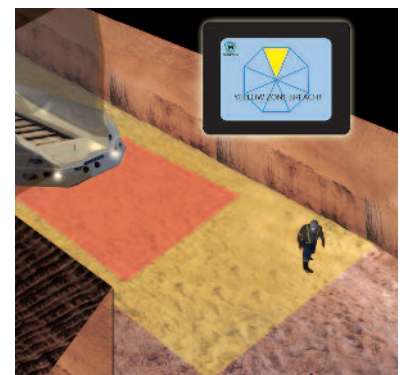
Matrix SharpZone technology creates an in-cab “green” zone so operator does not trigger alarms while driving the shuttle car.

SHUTDOWN ZONE

Auto-stops when worker detected in Shutdown Zone.
Audible warning and flashing Red light on driver & locator.
Operator receives in-cab warning. Operation resumes when worker exits zones.

CAUTION ZONE

Auto-slows speed when worker detected in Caution Zone.
Audible warning and flashing Yellow light on driver & locator.
Operator receives in-cab warning (optional).


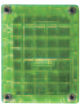








Engineering Safety
Advancing Automation



Matrix IntelliZone® Warning System Summary

Worker Location	Locator	Driver	Mining Machine	Mobile Haulage
Outside Zones	 Green Light <i>Constant or optional flashing mode</i>	Green Light 	Normal Operation	Normal Operation
Caution Zone	 Flashing Yellow Light & Beeping Tone	Flashing Yellow Light 	Normal Operation	Speed Auto-Slow
Shutdown Zone	 Flashing Red Light & Constant Tone	Flashing Red Light 	Auto-Stop	Auto-Stop

IntelliZone Locator
Charging Station



Joy SMARTZONE Compatible

IntelliZone is Compatible with SMARTZONE	
Matrix IntelliZone	Joy SMARTZONE
Continuous miners, shuttle cars and other mobile equipment Matrix Field Support	 All Joy Serviced Products Joy Field Support

NOTICE

Matrix IntelliZone is intended to help teach mine personnel to safely interact with equipment and stay clear of danger zones. It is not intended to replace safe operating practices. Matrix IntelliZone is a useful tool to assist in personnel training.

Information and specifications contained in this document are subject to change without notice.

IntelliZone and SharpZone are registered trademarks of Matrix Design Group, LLC.

IntelliZone® HD

PROXIMITY DETECTION

www.matrixteam.com 

Phone: 812.490.1525 • Fax: 812.490.1582 • 3299 Tower Drive • Newburgh, Indiana 47630 • email: sales@matrixteam.com