SUPPLIERS OF FLAMEPROOF AND NON-FLAMEPROOF MINING AND SWITCHGEAR
Expert Mining Solutions

The only solution
Mission Statement:

To provide a dedicated solution to the mining and industrial sector for the supply, installation and maintenance of safety system specialising in proximity detection and fatigue management electronic solutions. Perfection is a lot of small things done right.

Our UGR’S:
Around here safety comes first.
Around here we meet and beat our targets.
Around here we earn the mines trust.
Around here we do what we say we are going to do.
Around here we care for the mine its environment and the safety of the workers on the mine.

Company Information:

Situated in Emalahleni (Witbank) Mpumalanga.
Various site offices across Southern Africa.
Ronald Venter – Managing Director.
Paul Venter – Operation Director.
Etienne Landsberg – Service and Maintenance manager.
Total Employees 67 staff members.
Strategically situated in the hub of coal mining and on the corridor of platinum and chrome.
Company has a tier 3 safety record with no reportable incidents and maintains a green level 89% safety compliance record.
Company is BBBEE certified level 5.
We also carry preferred supplier status with some of our vendors as we specialise.
Actively involved in South African off road motorsports.
Products

Specialising in the supply of custom flameproof and non-flameproof equipment.
We offer an extensive range of flameproof and non-flameproof equipment and enclosures. We also specialise in the supply of custom-designed equipment to suit your every need.

All of the flameproof equipment undergoes vigorous testing to ensure that they comply with current mining regulations. These equipment are also tested by the SABS and approved accordingly, so that we can give you only the best product in the market.

The enclosures can also be customized to suit your requirements. By altering entries and bushings, adding or removing accessories, altering the actual size of the enclosures, we can ensure that you get the most out of our products!

Mining products currently being supplied:

- Hazardavert Coal Proximity Systems
- Portable Refuge Bay Chambers up to 96 Hours –Coal Mines
- Hazardavert Hard Rock / Collision avoidance systems.(Open Cast)
- Smart Cap operator fatigue management system.
- Movex under conveyor cleaning machines.
- Full range of Expert flameproof lights and accessories.
- Minecom Leaky Feeder Underground communications systems.
- Electrical Installations.
- Flameproof machine inspections and on site repairs.
With our supplier, Jewll Industries, and as a new addition to our extensive product range, we can supply various vehicle jacks, with the latest offering being a 40 to 400 ton mechanical hydraulic jack.
Underground stone dusting
Expert Mining Solutions
The only solution
Milestones of business development:

- 2011-Installation Sasol Hazardavert Proximity Detection at ithembalethu Shaft
- 2011-Supply and install 8 portable refuge chambers at Zimplats
- 2011-Supply and install 5 portable refuge bay chambers Exxaro coal
- 2011-Supply and install Hazardavert Proximity detection
- 2011-Complete Great Basin Phase 3 order Hazardavert proximity detection system
- 2011-Roll out of Surface Collision Avoidance Optimum Coal
- 2012-Received additional for Hazardavert proximity detection installation
- 2012- Anglo Coal New Vaal Smart Cap fatigue monitoring project
- 2012- Installation of Hazardavert proximity detection at Glencore Klipbank
- 2012-Installation of Hazardavert proximity detection system a Sasol Bossjespruit
- 2012-Supply and install Hazardavert proximity detection system at Gloria mines
- 2012- Supply and Install portable refuge bay chamber Optimum Coal
- 2012-Install Hazardavert Proximity Detection at Ingula Eskom Project
- 2013-Supply and install Hazardavert proximity detection Gloria koornfontein.
- 2013-Installation of Hazardavert proximity detection Glencore south Witbank.
Sales & Service Sites

Approved vendors:
• Sasol Mining
• Optimum Mining
• South Gold Exploration
• Boschmanspoort GB
• Zimplats
• Xstrata Alloys.
• Nkomati Joint Venture
• DRA Projects
• Koornfontein Mines
• Assmang
• Anglo Coal
• SP World Wide.
• Rio Tinto
• Kuasa Coal
Service offerings

- Offers a fleet of 21 roaming service crews
- Offers a specialised installation crews.
- 3 Underground Vehicles –Non Flameproof.
- Breakdown Technicians 24/7- 365 days a Year
- All Technicians trained and certified for installations- SABS /FLP
- Certified Installer for Hazardavert Proximity Systems.
- Certified Installer and Dealers for Minecom Leaky Feeder Systems
- All Technicians Completed MASC training for Flameproofing.
- Short Term and Long term Maintenance agreements.
- Flameproof Repairs and re-certification of underground machinery.
- ICASA Registered Radio Communication supplier and Installer.
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Suppliers & agencies:

- Strata Hazardavert Proximity Detection System
- Smart Cap Fatigue Management
- Movex Conveyor cleaners
- Expert flameproof accessories
- Pyoot Boone electronics
- Expert Flameproof industries
- Minecom Leaky Feeder Systems
- Vertex radio Mpumalanga distributor
- Underground machine hire of Bobcat’s Mini Dozers and LHD
Flame proofing
Certification | What it is | Its use | Why we need it
System certification and why we need this and how does it work

1. System certification is one of the most common certifications that are not adhered to.
2. System certification consists out of a couple of major components.
3. A machine or product is delivered to the mine and then taken underground. No modifications are done or equipment is put on a machine. All fine everything legal.
4. A proximity system or an additional light and is fitted to the machine and the machine becomes illegal.
5. The procedure to fix this is the following. The original machine certificate plus the certificate of the new light needs to be added and a booklet needs to be made up. The test house then comes out and then a new no for the machine with a new IA no has to be issued.
6. The machine then has a new unique number.
7. This system is there to protect the OEM from people adding and adding new equipment on the machines and piggy backing on them.
8. A couple of examples will follow:
   1. Fan and a controller box
   2. A Manitou machine and changes
   3. Pump and a starter.

There are many of these examples I am sure you will recognise in the mines and in your work place. We offer the service and the mines can benefit allot from it.
Flameproof Diesel Equipment
Specialising in the supply of custom flameproof and non-flameproof equipment.
Diesel Ex is an innovative and fast-growing company in the field of diesel flameproofing. Diesel Ex is well recognized and fully accredited by the SABS and IECEx standards. We believe that quality is the only way to go. With their well-trained and fully qualified staff and state-of-the-art manufacturing plant, you can be assured to only receive the best! They specialise in the design and manufacturing of custom diesel equipment to fit your flameproofing needs.

We offer a truly extensive range of flameproof and diesel flameproof equipment.

The available flameproof diesel products range from:

- Flameproof engine turbos
- Flameproof manifolds
- Full engine conversions to that of a flameproof engine
- Electrics and hydraulics on virtually any vehicle
- As well as full machine conversions from top to bottom
Flameproof Diesel Machines
Diesel Machines | Repairs | Maintenance | Certification
Repair of holes and flameproof equipment underground

1. Mine identifies the equipment to be repaired by means of regular flameproof maintenance and inspections by an accredited company or mine inspectors.
2. A dedicated company will then come to the mine premises and with a hot work permit repair the job.
3. Please see attached approved method of certification this is a method that has been used by Jewll Industries for the last 14 years and has been approved over and over when deemed necessary.
4. Please note that all repair agents must have a similar approval if not they are illegal to perform the repair.
5. Please note that the repairer also needs to have a mark scheme that he works to one of the test houses.
6. The individual that performs the repair does not have to be a flameproof inspector but the guy that signs it of needs to be a valid flameproof inspector with a certificate which states that he is an inspector and what discipline (flameproof, exe or IS)
7. A new label plate needs to be fitted to the enclosure.
REPAIR NO: SM7/14-072

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Diesel Machine Repairs

Jewell Industries Pty Ltd
Attention: Mr W van der Liagro
P O Box 751598
GARDEN VIEW
2047

REPORT NO: SM7/14-072

Page: 1 of 3

Jewell Industries Pty Ltd
Attention: Mr W van der Liagro
P O Box 751598
GARDEN VIEW
2047

REPAIR PROCEDURE - THREADED INSERTS (FLAMEROOF)

1. SUBJECT
The testing and assessment of Repair Procedures on the use of Threaded inserts on repaired flameproof enclosures for compliance with the relevant requirements of the following specifications:

1.2 Specification: The following specifications apply:

SANS 60079: "Explosive gas atmospheres"
- Part 6: 2012 "General requirements"
- Part 4: 2009 "Flameproof enclosures (d)"

SANS 10886: "The installation, inspection and maintenance of equipment used in explosive atmospheres"
- Part 3: 2001: "Repair and overhaul of apparatus used in explosive atmospheres"

2. DESCRIPTION

2.1 General: Rejections of threaded holes for fasteners by using good engineering practices. Threads which have been damaged beyond an acceptable extent may be reclaimed by oversize drilling, retapping and the fitting of a proper threaded insert.

2.1.1 Documentation: The Repair Procedures were detailed on the following Jewell Industries documents:

<table>
<thead>
<tr>
<th>Drawing No.</th>
<th>Page</th>
<th>Rev.</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>M6 INSERTS</td>
<td>01368-J1</td>
<td>01 of 01</td>
<td>00</td>
</tr>
<tr>
<td>M8 INSERTS</td>
<td>01368-J1</td>
<td>01 of 01</td>
<td>00</td>
</tr>
<tr>
<td>M10 INSERTS</td>
<td>00297-J1</td>
<td>01 of 01</td>
<td>00</td>
</tr>
<tr>
<td>M12 INSERTS</td>
<td>00298-J1</td>
<td>01 of 01</td>
<td>00</td>
</tr>
<tr>
<td>M14 INSERTS</td>
<td>00399-J1</td>
<td>01 of 01</td>
<td>00</td>
</tr>
<tr>
<td>M16 INSERTS</td>
<td>00390-J1</td>
<td>01 of 01</td>
<td>00</td>
</tr>
</tbody>
</table>

Data sheet: Anaerobic THREAD LOCKERS by: RiChe.

The original documents and copies thereof were endorsed with the official Servimark:7 stamp. The copies are kept by Servimark in file: SM7/14-072 and the original by Jewell Industries.
6. GENERAL RESULTS
No failures contrary to the fitting of the threaded Inserts and constructional requirements of SANS 60079: Part-3, Part-6 and SANS 10086: Part-3 were found severe enough to jeopardize the flameproof properties of the flange.

7. CONCLUSIONS
The Repair Procedures for reclaiming of fastener holes as per procedures described in Paragraph 2 of this report and to the condition tested and assessed is flameproof, Group IIB-H2, in terms of SANS 60079; Part-6.2012 and Part 1.2009. It can be used for reclaiming of fastener holes on enclosures for use in a Zone 1 hazardous location in a coal mine or on surface in a Methane to Hydrogen atmospheres.

8. SPECIAL CONDITIONS OF SAFE USE “X”
None

9. ADDITIONAL INFORMATION
Replacement explosion protected equipment is required, according to the relevant requirements of the MHS Act and the OHS Act, to comply with third party quality assurance (an approved mark scheme or batch testing by an Accredited Test Laboratory.)

Signed and Assessed by: JG Gagiano

TECHNICAL SIGNATORY

End of Document
Manitou MT-X 732 - Specifications
Specifications of the MT-X 732 machine
The flameproof Manitou MT-X 732 features a Perkins 4-cylinder 1104C-44T water-cooled, turbo-assisted diesel engine with a swept volume of 4.4 ℓ in its standard configuration which has been customized accordingly to adhere to the current South African flameproof specifications under SANS-868.

The vehicle features a fully flameproof and custom-designed wet engine system complete with a flameproof intake adaptor plate, intake manifold, flame trap, exhaust manifold and adaptor plate, a water-cooled turbo, exhaust pipe and exhaust cooler with a flame trap.

The flameproof Manitou MT-X 732 comes with a fully programmable engine control system. In its standard configuration it monitors the engine temperature, hydraulic pressure, oil pressure, fuel level, battery voltage as well as driver training and information. The system can be customised to customer specification ranging from anything such as customised start-up screens to password access control.

A fail-safe braking system has been incorporated into the vehicle in order to prevent vehicle runaway and vehicle motion if the driver is not present. The original hydraulic electric control has also been fully flame-proofed.

The Manitou MT-X 732 vehicle also plays host to a complex, yet fully flameproof hydraulic system, which has been engineered to ensure that the vehicle runs at optimum efficiency all the time.

<table>
<thead>
<tr>
<th>Boom Specifications</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifting height</td>
<td>6,90 m</td>
</tr>
<tr>
<td>Capacity</td>
<td>3200 kg / 4200 kg</td>
</tr>
<tr>
<td>Maximum forward reach</td>
<td>4,16 m</td>
</tr>
</tbody>
</table>

SABS Flameproof Test Report No: SM7/13-280 | Certified D-number: D234
Manitou MT-X 625 - Specifications

Specifications of the MT-X 625 machine
The flameproof Manitou MT-X 625 features a Kubota 4-cylinder, water-cooled, turbo-assisted diesel engine, 55.4 kW @ 2600 rpm, with a swept volume of 3.33 ℓ in its standard configuration which has been customized accordingly to adhere to the current South African flameproof specifications under SANS-868.

The vehicle features a fully flameproof and custom-designed wet engine system complete with a flameproof intake adaptor plate, intake manifold, flame trap, exhaust manifold and adaptor plate, a water-cooled turbo, exhaust pipe and exhaust cooler with a flame trap.

The flameproof Manitou MT-X 625 comes with a fully programmable engine control system. In its standard configuration it monitors the engine temperature, hydraulic pressure, oil pressure, fuel level, battery voltage as well as driver training and information. The system can be customised to customer specification ranging from anything such as customised start-up screens to password access control.

The flameproof Manitou MT-X 625 also features a variety of flameproof components to ensure its compliance with flameproof regulations. These include the likes of front and rear LED lights, front and rear LED directional lights, a flasher/siren combo, a hooter, a combination box as well as a battery connection box. The 625 also plays host to a unique camera system coupled with an intuitive custom-designed flameproof dashboard from which the entire machine can be controlled.

<table>
<thead>
<tr>
<th>Boom Specifications</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifting height</td>
<td>5.85 m</td>
</tr>
<tr>
<td>Capacity</td>
<td>2500 kg</td>
</tr>
<tr>
<td>Maximum forward reach</td>
<td>4.00 m</td>
</tr>
</tbody>
</table>

SABS Flameproof Test Report No: SM7/12-313 | Certified D-number: D230
Flameproof Gehl 4240 - Specifications

Specifications of the Gehl 4240 machine
The flameproof Gehl 4240 features a Yanmar 4-cylinder 4TNV88-XMS2 diesel engine which has been customised accordingly to adhere to the current South African flameproof specifications under SANS-868.

The vehicle features a fully flameproof and custom-designed dry engine system complete with a 400 W flameproof alternator, flameproof intake manifold complete with a flametrap, an exhaust manifold with a pipe, cooler and exhaust discharge chute.

The flameproof Gehl 4240 also features a variety of flameproof components to ensure its compliance with flameproof regulations. These include the likes of front and rear LED lights, front and rear LED directional lights, a flasher/siren combo, a hooter, a combination box as well as a battery connection box. The Gehl also plays host to a unique camera system coupled with an intuitive flameproof dashboard from which the entire machine can be controlled.

<table>
<thead>
<tr>
<th>Fuel</th>
<th>Diesel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Displacement</td>
<td>133 CID (2,19 ℓ)</td>
</tr>
<tr>
<td>Horsepower – Net (SAE)</td>
<td>46 hp (34 kW) @ 2600 rpm</td>
</tr>
<tr>
<td>Torque – Maximum</td>
<td>103 ft-lbs (139,7 Nm) @ 1200 rpm</td>
</tr>
<tr>
<td>Rated operating load (SAE)</td>
<td>1350 lbs (612 kg)</td>
</tr>
<tr>
<td>Operating weight</td>
<td>4600 lbs (2087 kg)</td>
</tr>
<tr>
<td>Shipping weight</td>
<td>4065 lbs (1844 kg)</td>
</tr>
<tr>
<td>Travel speed (Max)</td>
<td>6,8 mph (10,9 km/h)</td>
</tr>
</tbody>
</table>

SABS Flameproof Test Report No: SM7-M/13-0279 | Certified D-number: D229
Featuring a modern and streamline design, the Manitrax will play host to an ergonomically-designed framework and body with easy access to both the cabin and all crucial parts of the vehicle. Because of this unique design, the nose and rear end have been engineered to be easily removable and replaceable to ensure quick and effective repairs to the vehicle.

<table>
<thead>
<tr>
<th>Gross vehicle mass</th>
<th>10,4 ton</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (with crane)</td>
<td>5,71 m</td>
</tr>
<tr>
<td>Width</td>
<td>2,41 m</td>
</tr>
<tr>
<td>Height (with crane)</td>
<td>1,87 m</td>
</tr>
<tr>
<td>Height (without crane)</td>
<td>1,7 m</td>
</tr>
</tbody>
</table>

With a high strength and fully stress-relieved chassis, the Manitrax, which is fitted with the Manitou MT-X 732 axles and transmission, will feature a 4-wheel, 2-wheel and crab steer steering system to ensure that it can easily travel on almost any terrain. The Manitrax also has a 3.5 ton crane as attachment.

The Manitrax will boast a fully flame proofed Perkins 1006D 6-cylinder turbo-charged and after cooled engine to SANS-868 specification. Sporting 922 Nm @ 1350 RPM of torque and a displacement of 6,9 ℓ with 145kW at 2200 max RPM. The engine consists of a flameproof intake system, exhaust system complete with a water-based exhaust cooler, a purpose-built flameproof turbo as well as flameproof alternator, pneumatic and hydraulic starters and various PTO drives.

The Manitrax is also built around comfort and safety, featuring suspension seats and optional components such as air conditioning. As a safety measure, the Manitrax features a ROPS & FOPS-enclosed cabin to ensure passenger safety. A unique integrated electronic shut down system measures all temperatures and pressures and shuts down the engine automatically if any deviation is recorded. Numerous pressures and temperatures can be monitored at once. The system is also fully secured to prohibit any system overrides or alterations. The diesel tank and scrubber water tank has a capacity to operate for 3 shifts.
Proposed Final Product
A graphic representation of what the end product will look like
Manitrax vehicle with a cut out in the front bonnet to improve driver vision.

The hydraulic tank is fitted underneath the front bonnet.

Manitrax vehicle without the crane attachment.

Manitrax vehicle with the crane attachment.
Photos
Photos
Contact Us

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