THE COMPLETE SHAFT SIGNALLING AND SAFETY SYSTEM

DRIVERS CONSOLE

The Winder Engine Driver typically operates from a Drivers Console which is fitted with two Deebar Drivers Signalling Units (1), one for signalling between the Driver and the Banksman and the other for signalling between the Driver and the Onsetter.

The drivers console is also equipped with either a Deebar Sounder or a Deebar Bell (2) for the identification of signals rung.

Lockbell signalling is used for the interchange of coded signals between the Driver and the Banksman and the Driver and the Onsetter at the various stations. Either the Banksman or the Onsetter being specifically authorised and in possession of a key, which has to be inserted into the lockbell unit known as the Deebar Belltronic™ Unit (3) before signals can be transmitted.

The Deebar Relay Panel (4) electrically interlocks the signals rung between the Driver, Banksman and the Onsetters Belltronic™ Units.

SHAFT SIGNALLING; a term generally used to describe the communication between the Driver of a mine winder with the Banksman positioned on surface and the Onsetter who normally travels with the skip (cage).

SIGNALLING COMBINATION PANEL

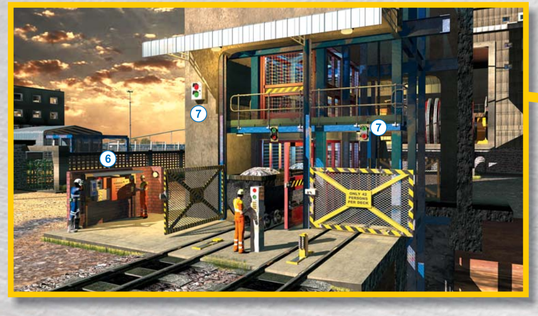
Deebar Station Stop Blocks, Huizens Devices, Technopost Stopping Devices and Farm Gates can be fitted and operated pneumatically via the Pneumatic Panel (18) and Interlocking Panel (19) which can also be interlocked to the shaft bell signalling system which is a Deebar patent.

The Deelock (17) and Interlocking Panel (19) has been designed to ensure that the responsible person (Onsetter or Banksman) follows a set procedure when operating safety devices on the specific station.

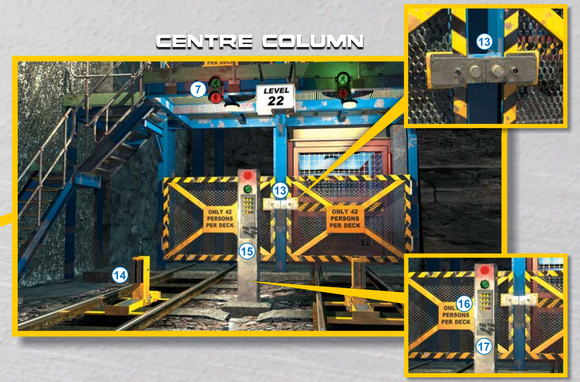
The system also ensures that the responsible person cannot leave the station if the safety devices are not in a safe position.

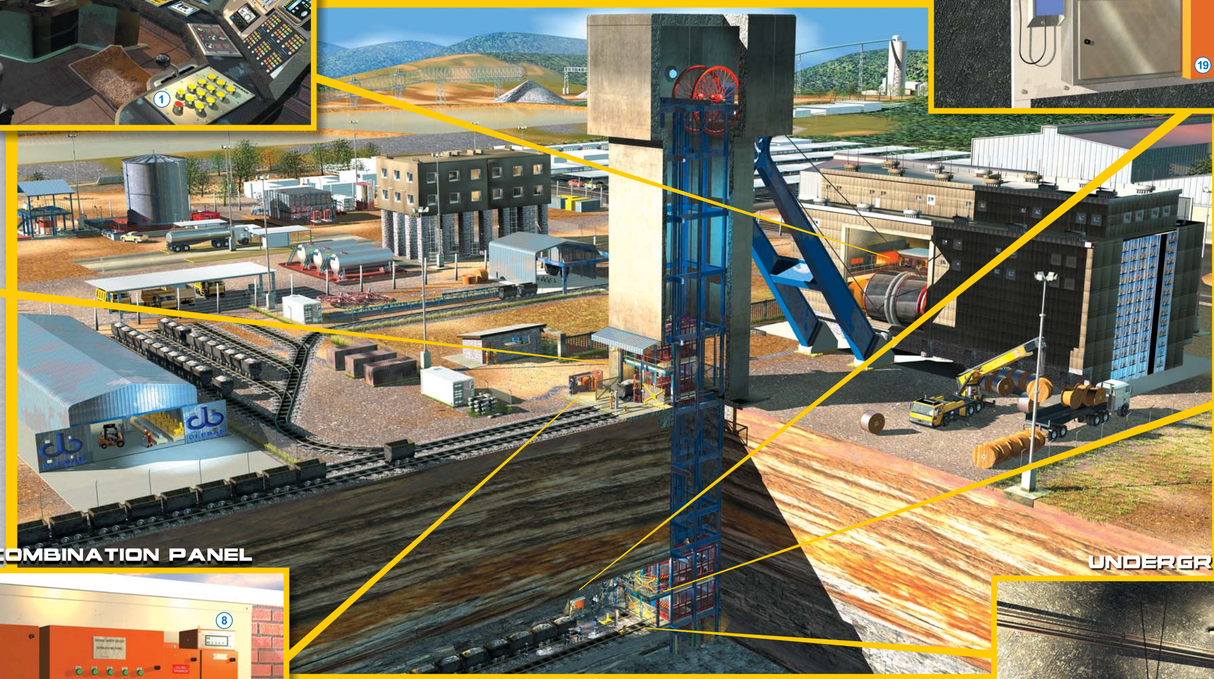
All Deebar products are manufactured under strict quality controls. Deebar is certified and conform to the ISO 9001:2015 quality management system to guarantee customers reliable products at the highest level of quality.

SURFACE LEVEL



CENTRE COLUMN





The Deebar Bell Event Recorder (5) is situated in the winder house and is designed to record and log all signalling events that take place in the shaft area.

Deebar offers a comprehensive solution to shaft equipping for surface and underground levels. The Signalling Combination Panel (6) includes a Distribution Box, Belltronic Lockbell, Callbell Unit, Digital Display Unit, Wallcomm, Deecom 101 Telephones, Pneumatic and Interlocking Panel for rolling stock station stopping devices.

On the bank and all underground levels, Lock and Clear Lights (7) are fitted to indicate whether the entering or exiting of the cage is safe or unsafe. The Lock and Clear Lights can be supplied in different units such as D-Lites, Robot Boxes, either incandescent or LED type.

The Belltronic Digital Display Unit (8) will visually show the last signals rung on the LCD display.

SIGNALLING COMBINATION PANEL

The Call Bell Unit (9) is an emergency signalling unit as required by the MHSA Reg 16.43.6 and is designed with two buttons both behind a breakable glass. One button to be used for accident to person, the other for an accident to shaft, both signals are followed by a station ID. An option to trip the winder after activating the accident to shaft button can be included.

The Distribution Box (10) is used to terminate and distribute shaft station cabling on the bank and each level.

The Wallcomm (11) “Biza Khuluma”, is a 2 wire intercom system with a battery backup (10 hour standby time), in the case of a power outage to enable communication.

The Deecom 101 (12) is a robust PABX/auto type telephone communication unit manufactured from stainless steel, powder coated and fitted with a neoprene handset.

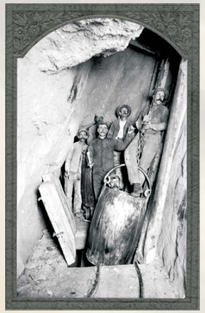
UNDERGROUND LEVEL

Deebar, known for its shaft safety products in mining, designed and manufactured the Deebar Slam-It, Slide-it, Lock-it and Latch-it Station Gate Lock (13) which is specifically designed to prevent a double operation and can, in addition, be electrically interlocked to the winder safety circuit via the integrated interlocking magnetic switch utilizing RS 485.

Deebar has various combinations of Station Stopping Devices (14) with the option to mechanically couple and interlink to a Centre Column (15) which incorporates the Belltronic Signalling Unit (16) and the Deelock Safety Lock (17) to provide safety when moving rolling stock.

This system both electrically and mechanically interlocks the shaft bells to the Deebar Station Stopping Devices and ensures the ultimate in safety. The interlocking station stopping devices with electronic bell signalling, together with the Slam-It are covered by Deebar patents.

DEEBAR DESIGNS AND MANUFACTURES REVOLUTIONARY SHAFT SIGNALLING AND STATION SAFETY PRODUCTS TO SATISFY ALL SHAFT COMMUNICATION REQUIREMENTS



In the early 70's, mine shaft signalling was done by means of manual bell ringers signalling between Hoist Driver and Banksman (surface) and Hoist Driver and Onsetter (underground). The reliable Martco No.70 and S101 type bell ringers were used for all signalling. These are still manufactured today for sinking and marginal mines.

In 1975, Anglo American (Labs) designed an Electronic Signalling Generator to replace the manual type bell ringing units, primarily to give a clearer and more distinct signal to eliminate any misinterpretation of what signal was rung. After Anglo designed the electronic signalling board, the unit required testing in real mining conditions. Martco Electrical, who at that time had been manufacturing manual signalling systems for 25 years and due to their experience and position in the market place were selected to assist Anglo Labs with the testing of this new electronic signalling unit by equipping them into Martco enclosures with all Martco's additional ancillary equipment. Martco was also committed to supplying test units to certain mines for testing under harsh mining conditions.

Once the units were approved, Martco negotiated the exclusive rights to manufacture and market the new Belltronic Signalling units.

In 1976, Deebar entered the market with their own brand of shaft signalling units called the Desybell and was in competition with Martco Electrical in the industry. In 1984 Deebar acquired Martco and later merged their entire shaft signalling range of products together with Martco's and continued to market its products under the brand name Belltronic™.

To date Deebar is still the market leader in the field of electronic lock and call bell shaft signalling and communication.

Mineshaft signalling has changed significantly over the years with Deebar having instituted numerous additional safety features into the originally designed unit. This has been made possible through ongoing research and development into communication within a mine shaft that includes a number of safety devices that work in conjunction with the signalling units.

Deebar's extensive range of signalling products together with its range of ancillary safety products ensures that it remains a market leader in the field of shaft signalling, station stopping safety devices, shaft gate interlocking, bell and event monitoring and scada displays.

With the strict laws governing safety in mines worldwide, every mine is required to take the necessary precautions when equipping itself with signalling and safety products.

Deebar with its 150 years of collective experience within the industry has been in the forefront of signalling in mine shafts around the world, which safely transport thousands of personnel and their material daily to their respective work stations and back to surface safely.

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