

# levelok<sup>®</sup>

SAFE MULTI-TASKING SYSTEM

Holding conveyances during loading/ unloading.  
Controlled emergency braking.



- **Rope life** on Skip systems is significantly increased.
- **Time saving** as re-decking of the cage will not be necessary.
- **Safe** transfer of men and materials while loading or unloading of the cage.
- **Emergency Braking**, the system can be adapted to operate as an emergency brake.

The Levelok<sup>®</sup> system consists of a power pack and clamps which hold a cage or skip steady during the transfer of loads. The clamps then release their grip at a controlled rate to allow the rope stretch to be taken up smoothly.

The Levelok<sup>®</sup> system has been developed over the last thirty years and is currently being used in mines in southern Africa, North America and Australia. During this time the safety record of Levelok has been excellent. Ongoing improvements to the system have ensured that the system is even safer today.

## How does the levelok Cage System operate?

- When the cage is in position, the station air supply quick coupler is connected to the Levelok connection on the cage.
- The power pack (air/oil intensifier) boosts the hydraulic pressure up to the required pressure. The pump stalls and clamp force is maintained indefinitely. This operation usually takes about 10 seconds for the pump to boost the pressure to full clamping force.
- When loading or unloading of the cage is completed, the station air supply is removed, resulting in a rapid loss of air pressure in the power pack. This starts the decompression cycle, which takes about ten seconds.
- As the oil pressure drops, the clamps release their grip at a controlled rate and the cage slides smoothly to its new position in the shaft.
- The clamp arms will then fully retract, thus allowing the cage to be moved.

## Interlocking of the Levelok<sup>®</sup> Cage system

When using a levelok system it is essential that the winder driver is aware of whether the clamps are on or off, so that the winder is prevented from moving with the clamp still applied.

Various interlock options are available, including semi-automation of the cage, which is designed to suit the individual customers requirements.



Clamp



Power Pack



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## Emergency Braking

Emergency braking under slack rope conditions can easily be added into a standard cage holding system. This is achieved by incorporating an accumulator into the system.

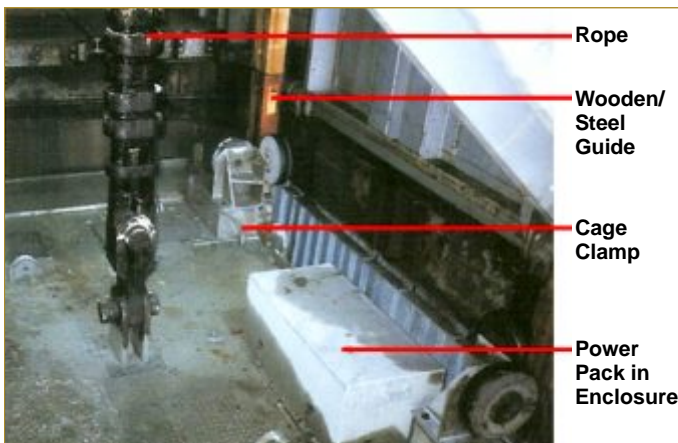
The accumulator is charged to working pressure when the system is used for the first time. Should the conditions for an emergency situation be met, oil would then automatically be released from the accumulator, thus activating the Levelok® clamps, which then grip onto the shaft guides in a controlled manner. The deceleration rate is adjusted according to the individual customer's requirements.

## The Levelok Skip Holding System

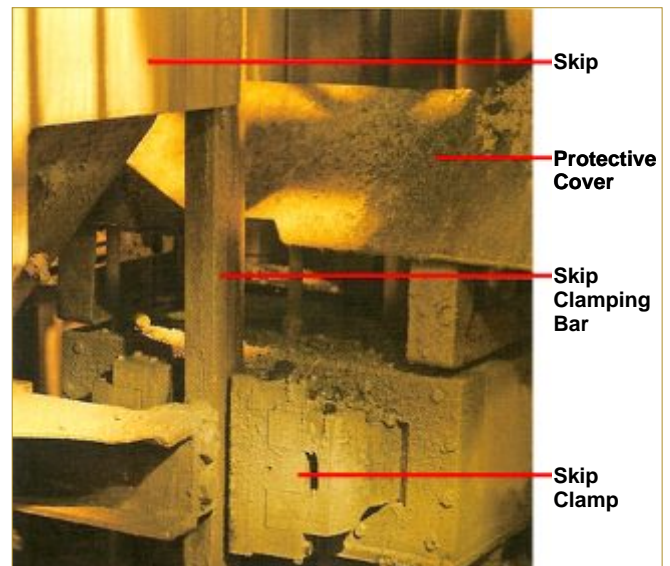
This system is designed to hold a skip in the shaft during loading of ore. This eliminates spillage and the transfer of shock loads to the rope, thus increasing rope life.

The skip system is installed at the level in the shaft where the loading occurs. The skip is fitted with Clamping Bars, onto which the clamps grip, thus holding the skip in position. The system is PLC controlled and is therefore fully automated.

Pre-tensioning of the rope before the clamps release will ensure that there is minimal movement of the skip. An alternative would be to use the patented decompression system to allow the skip to slide in a controlled manner to its new position when the clamps release, again depending on the design requirements of the customer.



Top Mounted Cage System



Skip Clamp