



Extended life of underground mining equipment delivers significant cost saving benefits.

Underground mining is a tough environment – dusty, damp, vibrations, falling material and changing temperatures all take their toll on equipment operating at depths. A range of different equipment is used underground but unlike many surface mining operations, stopping for a service, or an unplanned breakdown, can be dangerous and time consuming. Maximising machine uptime and availability is critical to the successful efficient operation of underground mines.

The Problem:

Particles and moisture between steel on steel surfaces can lead to pitting, corrosion and perhaps worst of all, component seizure. If forced apart, the two surfaces can 'gall' with material being ripped from each surface. Having spare equipment on hand is expensive, and replacing components while underground is far less efficient, very time consuming and often hazardous for the operators. Because component and equipment repair is typically completed by major Original Equipment Manufacturers (OEMs), lead times and costs can be prohibitive to the efficient running of an underground operation.



Disassembled worn and damaged drum components in receiving area.
Inset: Galling of steel on steel seizure.

After benefits and feedback

The Solution

To stop excessive damage occurring on underground mining cutter drums and thereby increase usable life, LaserBond developed an intelligent solution – by devising a material with the right hardness coupled with low surface friction properties to reduce component seizures.

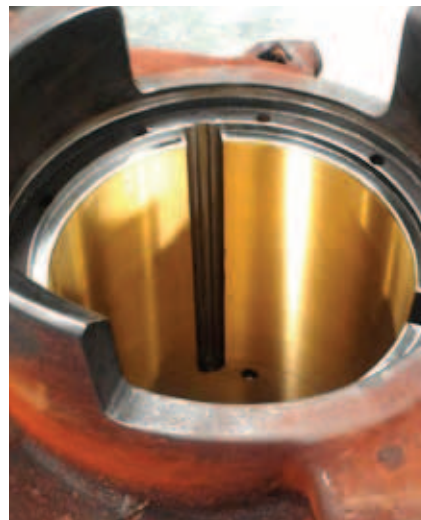
LaserBond is able to complete work on gear cutter cases, cutter drums, gear boxes, shearers and a range of other underground mining equipment which may usually be deemed too expensive to replace with new equipment.



LaserBond cladding process of mining drum to restore working surface to OEM specifications.

Key Benefits

- In some cases, such as base frames, we have successfully extended the useful life from 20,000 to over 40,000 hours, resulting in significant performance improvements for the end user.
- We offer tried and tested alternatives to simply replacing expensive equipment, such as LaserBond deposition of a wear surface that significantly extends the usable life of capital equipment.
- When individual underground mining components can cost hundreds of thousands of dollars to replace, cost savings by using reclamation can make a significant difference to operating and running costs.
- Higher machine availability is possible with less downtime due to maintenance and associated less exposure to safety risks.
- Better outcome for environment with less waste and low carbon footprint.



Repaired and refurbished inner and out drum components, with improved metallurgy to prevent galling.

Feedback

The customer said: "Intelligent material development by LaserBond offered a surface coating that reduced severe wear issues in underground mining equipment while improving performance and reducing our maintenance and operation costs"

About LaserBond

LaserBond Limited is an Australian engineering company specialising in surface reclamation and engineering, precision machining and fabrication. LaserBond manufactures, repairs, reclaims and enhances the performance of high wear, critical metal components in a range of capital intensive industries including mining, minerals processing, energy, agricultural, transport, steel, aluminium, marine and manufacturing sectors.