



Two of the four identical drill rigs during independent trials that proved three times longer life and 7.5% saving in total drilling costs.

New DTH Hammer gives three times longer life.

In Down-The-Hole (DTH) drilling the hammer unit is a relatively large pneumatic powered device that operates “down-the-hole” adjacent the rock-cutting bit. High velocity exhaust air is used to flush the rock cutting up past the DTH hammer and back to the surface. Through an intensive R&D effort LaserBond has designed, proven and is now offering a game-changing DTH hammer, targeted at hard metalliferous drilling. It lasted three times longer as totally objective and independent tests proved, reducing total drilling costs by 7.5% .

The Problem:

When drilling in particularly abrasive rock formations, the actual cutting erodes the outer casing to the point of destruction. This wear can represent up to 20% of a mine’s total drilling costs. LaserBond’s innovation process began with an investigation into how the cut rock particles hit the casing. Particle size and the angle of incidence against the casing were found to be the cause of high wear rates. Extending wear-life highlighted the need for surface engineering of internal components.



Comparison of wear after 3500m from an industry leading brand (which was scrapped) and the LaserBond Hammer which went on for another 8000m. Inset: internal galling and crack initiation.

After benefits and feedback

The Solution

LaserBond's DTH hammer innovation is a direct result of technology developed by its R&D team, (patent applications apply). Extensive trial results guided the design of a casing that would resist abrasion and erosion. It required a strategic series of rings along the casing, changes to the drive chuck and subtle modifications to the internal design. Then, to extend the life of the casing and counter the effects of the continual erosion impact of high velocity rock particles, the casing was laser clad. Finally, to clearly prove the solution, an independently supervised comparative trial was undertaken.



DTH hammers designed and produced at LaserBond's SA facilities.

Key Benefits

- Three times life improvement over recognised industry- leading brands.
- 7.5% total drilling cost saving.
- Other benefits associated with 3 x longer life are saving inventory costs, reduced safety risk and better for the environment.
- An unintended benefit was a significant increase in penetration rate.

Feedback

The LaserBond DTH Hammer is a 'game changer'.

"Congratulations LaserBond. The performance of your new DTH Hammer system we are trialling has exceeded all our expectations. We are drilling in granite and gneiss, with almost no wear, over 3500m when other hammers would be scrap. The LaserBond® Hammer significantly reduces our total drilling costs."



Game-changing LBH 100, 125, 150 Hammers & Drive chucks.

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.