

Increasing Availability of Hydraulic Excavators

The Challenge

Chesterton[®] was challenged by a certified Hitachi[®] repair shop to develop a sealing system capable of exceeding the OEM cylinder warranty period for a EX3500 hydraulic excavator.

Parameters of Equipment	
Equipment	EX3500 Hitachi Excavator
Cylinder	Boom Cylinder
OEM Seal Kits	Injection moulded urethane seals
Cylinder	260 Rod / 360 Bore

The well known coal mine company had a premature seal failure on the hydraulic boom cylinders that required unscheduled downtime to repair. The unconditional warranty requires the cylinder to operate leak-free for a minimum of 8000 hours before maintenance is necessary. The cylinder lasted only 6000 hours before excessive leakage led to a premature failure. The repair shop responsible for the maintenance contract at this mine had to incur all costs associated to repair the cylinder and get it back into production.

This equipment is large, difficult to service and very costly to change out a cylinder at an estimated cost of \$18,000 (not including lost production). The difficulty was developing a rod seal rebuild kit that ensured the warranty period of 8000 hours for this cylinder was met, thus eliminating any additional costs incurred by the repair shop.

Reduce downtime and improve production by upgrading to custom Chesterton repair kits

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The Chesterton Solution

Chesterton utilised its experience and engineering expertise in the mining industry to develop a custom rod seal kit. The seals are manufactured from an exclusive, high-temperature thermoset AWC860 seal material that offers outstanding wear, abrasion and extrusion resistance while proven to withstand the most hostile environments.

The end user was extremely satisfied with the performance resulting in less frequent downtime. Recently, a cylinder was rebuilt where the seal life exceeded 20,000 hours which is a phenomenal achievement in such a demanding application. Since the Chesterton kit routinely exceeded the warranty period, the cylinder repair shop has now standardised Chesterton repair kits.

MTBR increased 2.5X



What does the Chesterton rebuild kit offer ?

- Turnkey Aftermarket Repair Kits
optimise equipment availability
- Superior Designs and Differentiated Materials
reduce downtime and improve productivity
- Satisfy Warranty Terms
extend hours of operation
- Reduce Environmental Concerns
leak-free operation

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