D11R Bulldozer Cylinders

Chesterton Fluid Power Equipment Sealing Solutions

Mining
Chesterton Custom Kits
Case Study 019 FP

Challenge

Issue

One of the largest coal mines in the world was experiencing premature failures of the tilt and lift cylinders used on their Caterpillar® D11R bulldozer.

The OEM seals began to leak prematurely after an average of only 2,000 hours, requiring unplanned maintenance and costly downtime.

The goal was operate 24/7/365 and exceed the operational warranty period of 4,000 hours prior to any maintenance on the equipment.

Solution

Products

- Chesterton's local specialist recommended custom kits for evaluation, both the tilt and lift cylinders (4 in total). All seals were made from our exclusive high-temperature **AWC 860** material
- The sealing solution included a **21K** canned, wiper, **22KE** rod seal, **22KNBN** buffer seal, **22KE** O-ring replacement, 2-piece cap seal, and replaceable wear and bearing rings
- **AWC 860** proprietary polymer offers best-in class sealing technology, capable of use up to 120° C (250° F)

Results

Improved Performance & Reliability

Chesterton's custom seal kits were installed, far exceeding the warranty period of 4,000 hours and were not replaced until 9,000 hours of continuous operation.

This performance surpassed customer expectations and, as a result, the mine specified these kits for all cylinder upgrades on Caterpillar® D11R equipment in the future.

MTBR increased: 4x+

Caterpillar® D11R in operation – lift and tilt cylinders.

Custom kits developed specifically for the tilt and lift cylinders of the Caterpillar® D11R.

Caterpillar® D11R equipment performing leak free in operation.

Technical data reflects results of laboratory tests and is intended to indicate general characteristics only.
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