Rolled Steel - Pinch Roll Vices

Chesterton Fluid Power Equipment Sealing Solutions

Steel
Chesterton – 22KE, AWC 860, and SpeedSeal
Case Study 022 FP

Challenge

Issue

A prominent steel mill was experiencing performance issues associated with their hydraulic pinch roll vices, causing unplanned maintenance and lost production

The O-ring energized rubber seals would compression set and begin leaking severely after only 1-week leading to product quality and scraping issues.

Replacement of the seals would stop rolled steel production and require 3 men and 6 hours to replace. Production is typically 1 roll/hour.

Solution

Recommendation

Chesterton recommended a **22KE** piston sealing solution made from its proprietary high-temperature thermoset polymer.

- **22KE**: Single-acting energized dual component seal for added stability, integrating a FKM O-ring loader
- **AWC 860**: Thermoset wear resistance material with ability to seal up to 120° C (250° F)

SpeedSeal: Chesterton's regional manufacturing center for made-to-order product to fit original hardware with quick delivery

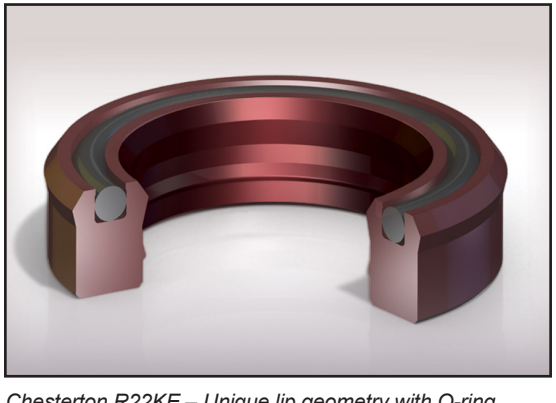
Results

Improved Performance & Reliability

Chesterton replaced 10 seals which have been operating leak-free for 4 ½ months to date. This solution has eliminated leakage and quality issues of the vices, as well lost profits associated with scrapped product.

- **Savings**: 1 roll of inox steel = €50,000
- **MTBR increased:** 18X and counting

Pinch Roll vice – operating at 110°C (230° F) and 70 bars (1015 psi)



Chesterton R22KE – Unique lip geometry with O-ring loader helps stabilize seal to prevent rolling and eliminates compression setting.

Installed P22KE/AWC 860 in original hardware.

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