

Pneumatic Paper Roll Lift Cylinder Retrofit Provides 2+ Years Reliable Performance

Pulp and Paper
Chesterton 28K V-Ring Set
Case Study 039 Fluid Power

Challenge

Background

A major pulp and paper mill owner was experiencing operating problems and malfunction (sliding down and hopping) of heavy-duty, large diameter pneumatic cylinders. The cylinders were old, manufactured in the 1970s.

Cylinder rods and bores were scored, scratched. Rod and piston seals were leaking, causing pressure loss and sliding down or hopping of the cylinders.

Because the original manufacturer of the cylinders was no longer in business, it was difficult to retrofit cylinders.



Cylinder prior to repair

Solution

Service

A complete cylinder upgrade, including replacement of the cylinder tube, redesign of the seal system and upgrading profiles materials.

Product

- **CW21K:** Positive-rake profile effectively wipes away contaminants and protects the equipment
- **R28K:** Split, multi-lip design provides tight, leak-free operation
- **16K Wear Rings:** Provides guide for the rod and eliminates metal-to-metal contact
- **AWC800 Seal Material:** Chesterton's thermoset polymer, durable wear, and hydrolysis resistant material was used for durability.



Seals to be installed in the rod gland

Results

Upgraded Cylinders with Improved Efficiency and Reliability

Smooth operation of the cylinders provides an accurate positioning of the rolls, without a sliding down or hopping motion. The upgraded cylinders have been in operation since December 2016 with leak- and trouble-free operation.

Benefits

- Upgraded cylinders are retrofit, no equipment modification is needed
- Improved equipment performance and greater reliability



Cylinder after repair