

Spring-Energized Seal (SES) Provides 4X Increase to MTBM in Plunger Pump

Chemical Industry
100 Series Cantilever Spring-Energized Seal (SES) and 9K
SES Case Study

Challenge

Background

A customer uses a plunger pump to extract plant oil. Liquid carbon dioxide supplied to a customer's pump was becoming contaminated. The OEM seal system was lasting only 2 months which was unacceptable to the customer. They wanted to maximize mean time between maintenance (MTBM) intervals and approached Chesterton for a better solution.

Solution

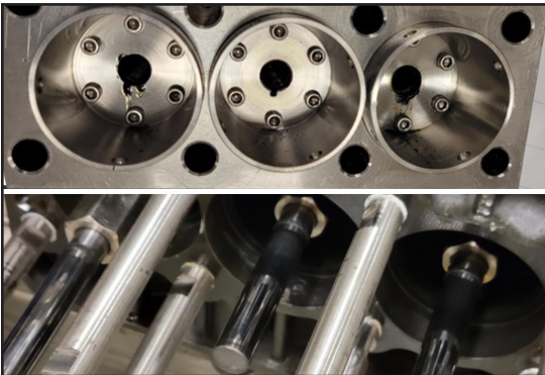
Product

We proposed a **Chesterton® Cantilever Spring Energized Seal (SES) 100 Series** with an FDA-compliant UHMW-PE (**AWC610**) jacket and stainless steel spring, along with a **9K Backup Anti-extrusion Ring (AER)** made from **AWC630**. The seal system is designed to offer lower friction performance and, thereby, smoother system actuation while allowing operation to 3,750 psi.

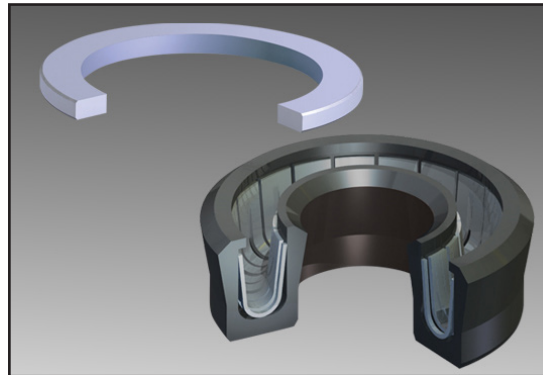
Results

4X Increase in MTBM

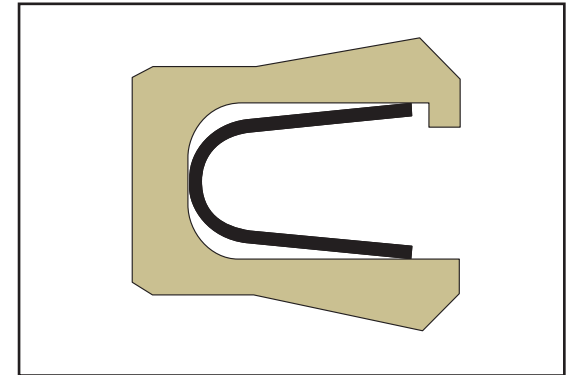
As a result of the **SES 100** and **9K** solution, system performance and seal life increased substantially. The system is used daily and service life increased to 8 months before seal changeout was required.



Plunger pump system.



Chesterton 9K and SES100 seal.



Chesterton SES 100.