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Protecting Motors from Abrasive Cement Dust

Abstract

- A cement manufacturer and packager faced ongoing issues with hydraulic motors due to highly abrasive airborne particulate.
- Abrasion caused premature shaft seal failure, in turn causing hydraulic fluid leakage that damaged product, posed a safety hazard, and incurred downtime and hard costs for cleanup and equipment replacement.
- An ingenious “off-label” use of an overhung load adaptor (OHLA) solved the customer’s problems and saved significant capital – not to mention aggravation.

Introduction

A longtime customer called us to ask if we had a solution to the premature shaft seal failure he was experiencing with his Eaton Char-Lynn H-Series hydraulic motors.

We at Stanley M. Proctor Company get a lot of calls from people with industrial automation problems. Often, solving a customer’s problem boils down to a question of figuring out how to make a machine faster, slower, more accurate, more durable, or run hotter or colder.

In this case, the challenge was to make a machine more durable to solve our customer’s vexing abrasion problem.

The Challenge

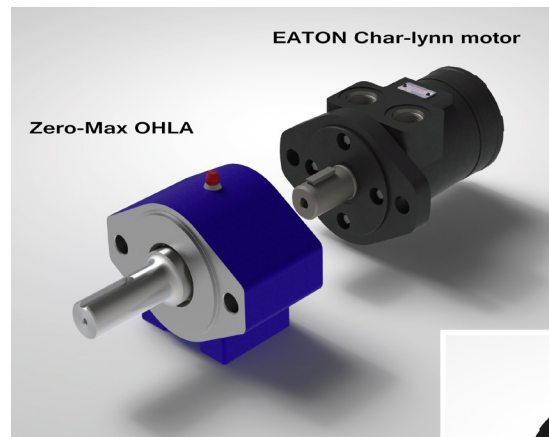
This customer is a manufacturer and packager of dry cement mix. Due to the dusty environment, the shaft seals of the hydraulic motors were constantly exposed to a very abrasive airborne particulate that would readily stick to any moisture, including hydraulic oil, turning it into a thick, abrasive paste.

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This paste would work its way under the lips of the shaft seals. The rotating shafts with abrasive paste would then literally sand away the soft Buna seal – causing big problems.

- Hydraulic fluid leaking onto the machinery, product and floor, creating an employee safety hazard and financial loss from damaged product.
- Excessive wear-and-tear on the motors, necessitating frequent replacements, with expensive downtime and replacement costs.

If we could solve the problem of protecting the motor from the abrasive, airborne particulate, we would save the customer a lot of money and help keep the Company's employees safer.



The Solution

An unusual problem requires an ingenious solution. We suggested the customer install a Zero-Max Overhung Load Adaptor (OHLA) to the front (shaft end) of the Char-Lynn H-Series hydraulic motor.

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Now, the normal purpose for a Zero-Max OHLA is to increase bearing capacity of the hydraulic motor. In this case, though, the purpose was to add additional sealing by completely covering the Char-Lynn shaft seal and isolating it from the abrasive particulate.

The Zero-Max OHLA has its own set of shaft seals, but they are not under pressure from the hydraulic system. The Zero-Max OHLA has a standard grease fitting that allows grease to fill the bearing cavity for lubrication and sealing, yet the heavy grease will not run out of the seal area even after abrasion takes place.

The Outcome

As intended, the Zero-Max OHLA eliminated the wear-and-tear problem.

We made the Company's motors a lot more durable – saving significant costs in equipment replacement – greatly reduced downtime, eliminated the safety hazard, and eliminated the fluid-damaged product.



How Can We Help You?

To request a quote or schedule a complimentary solutions consultation, just drop us a note using our [simple contact form](#).

We look forward to hearing from you.

About the Stanley M. Proctor Company

Since 1955, the Stanley M. Proctor Company has specialized in custom-engineered industrial automation solutions and the distribution of pneumatic, hydraulic and electric hydraulic plant automation products. We pride ourselves on consistently exceeding customer expectations and steadily building our reputation for delivering outstanding quality and service.