



Location:
North America-based phosphate plant

Industry:
Mining

Problem:
Bearings at a phosphate plant were failing a few days after installation.

Solution:
Rex ZAF 6000 Series SHURLOK Adapter Mounted Roller Bearings

Results:
With Rexnord Bearings installed, the plant expects cost savings from reduced downtime and repair costs. A cost saving analysis by Rexnord estimates the plant will save more than \$39,000 annually.

Summary:
Rexnord Bearings are resulting in reduced downtime and added service life, leading to significant cost savings for the plant.

Rex Bearings Cut Downtime Dramatically at Major Phosphate Plant

Bearings on a chain mill application at a major phosphate plant are still in operation more than eight months after installation, while the bearings they replaced failed in as little as three or four days. The resulting reduction in downtime and added service life has resulted in significant cost savings for the company.

At the facility, the company processes phosphate for use in animal nutrition. Raw material that has been partially crushed and cleaned after mining is pulverized in chain mills. In the mills, chains inside spinning drums break the material down into small particles that can be processed for use in animal feed products. Shock loading on the bearings supporting the 3-15/16 inch shafts on which the drums turn can be severe, and the SAF-type bearings used in this application were failing after as little as three or four days of service.

Bearings Meet the Severe Service Challenge

To extend the service life of the bearings, the company replaced the existing split-block SAF-type bearings with Rex® ZAF 6000 Series SHURLOK® Adapter Mounted Roller Bearings.

A company spokesman explains, "The previous bearings literally started failing a few days after they were installed, so the user was faced with both the replacement cost and the downtime. Instead of replacing the bearings with an exact interchange and likely to fail, we selected the higher capacity Rexnord Bearings, which could be installed with minor mounting modifications." In addition, the bearing design provides better sealing to protect against

possible contamination, including corrosive and abrasive damage from long-term exposure to the phosphate material.

The ZAF 6000 Bearings are solid-housed, shaft-ready units for installation. They are greased and the clearance is preset, so they can be taken out of the box and mounted to the shaft. They feature a positive locking system that maintains mounting tightness during operation. The tapered adapter sleeve provides greater shaft grip and eliminates the shaft damage caused by loose bearings. In addition, the SHURLOK technology makes it easier to remove the bearings from the shaft without causing damage, saving both time and repair costs. The new bearings also incorporate Spyglass™ Optical Strain Sensing (OSS) technology, which provides instant feedback to achieve optimal shaft grip. It eliminates damage to the shaft and bearing that can be caused by improper tightening during bearing installation.

The company anticipates significant cost savings from the reduced downtime and repair costs the new bearings are expected to deliver. A guaranteed cost saving analysis by Rexnord estimates that the company will save more than \$39,000 annually. As bearings on additional mills fail, the company plans to replace them with the new bearing design.



Previous bearings used on this chain mill at a major phosphate plant failed quickly because of shock loading, while the SHURLOK Roller Bearings that replaced them were still in operation months later.



New SHURLOK Roller Bearings provided higher load capacity as well as better sealing and easier installation than previous bearings.



Spyglass Optical Strain Sensing (OSS) technology, seen in this view, provides instant feedback to achieve optimal shaft grip and eliminates damage to the shaft and bearing from improper tightening during installation.