Case Study

Reconditioning Bearings for Ore Processing Plants in the Oil & Gas Industry

Motion Repair & Services

Background: Ensuring Reliable Conveyor Operations

In the oil and gas industry, ore processing plants rely on mechanical sizers to crush oil sand ore in three stages: primary, secondary and tertiary. The ore, composed of bitumen, sand, clay and shale, is prepared for oil extraction and transported to the next processing stage via conveyors.

The conveyors' head and tail pulleys are subjected to extreme loads and harsh conditions, making their bearings critical to reliable operation. These bearings endure severe duty cycles and are prone to wear and damage, requiring regular assessment and replacement during pulley rebuild activities.

Figure 1: The bearing as it was received by our team.

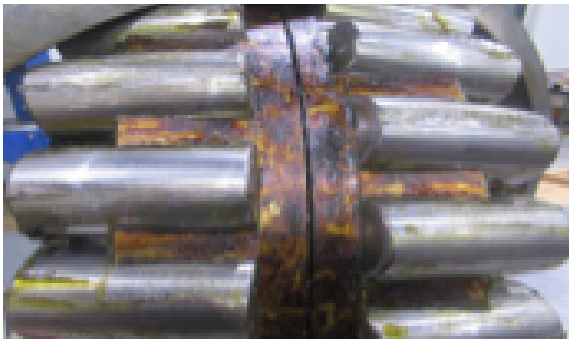

Figure 2: The rolling elements and cage showed signs of lubricant breakdown and light wear.

The Challenge: High Costs and Harsh Conditions

The conveyor systems operate in harsh environments, facing extreme heat, cold, contamination and severe loading. Bearings often show light wear but are not in good enough condition to be reinstalled without repair.

Replacing these bearings is costly, with new bearings priced at approximately $27,500 each. For a single conveyor pulley requiring two bearings, the cost rises to $55,000. The high costs, coupled with long lead times for new bearings, presented a significant challenge for the customer.

Our Solution: Reconditioning Bearings to OEM Specifications

Our Heavy Mechanical Service Center provided the expertise, equipment and processes to inspect, disassemble and recondition bearings, restoring them to OEM specifications. The customer began sending us used bearings for inspection and reconditioning, allowing them to extend the life of their bearings and significantly reduce costs.

Figure 3: The rolling element body.

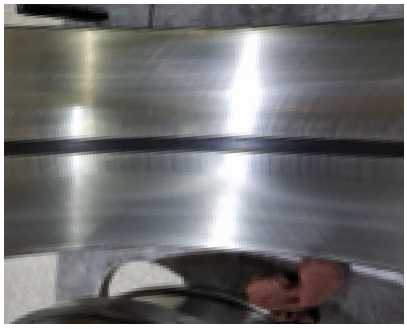

Figure 4: The rolling element end.

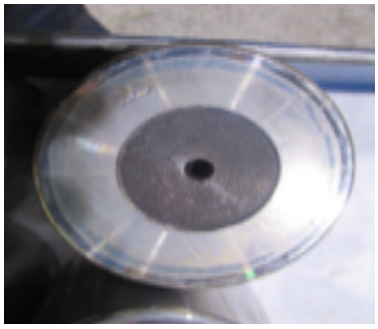

Figure 5: The outer ring raceway.

Results: Cost Savings and Reduced Lead Times

Reconditioning bearings at our service center costs $6,402 per bearing or $12,804 for a set of two bearings per shaft. This represents approximately 25% of the cost of purchasing new bearings.

Additionally, reconditioning bearings offers a faster turnaround compared to the excessive lead times currently associated with new bearings.

Over the past year:

- **Eight bearings** were inspected, reconditioned and returned to the customer's site.
- **Another eight bearings** are currently being assessed and reconditioned.

Cost comparison:

- **16 new bearings:** $27,500 x 16 = **$440,000**
- **16 reconditioned bearings:** $6,402 x 16 = **$102,432**
- **Savings realized by reconditioning bearings: $337,568.**

Partner With Us for Reliable and Cost-Effective Solutions

By reconditioning bearings, we helped the customer significantly reduce costs and lead times while maintaining reliable conveyor operations in their ore processing plants.

For more information, visit MiRepairandServices.com or call 1-800-526-9328.