

Case Study: *Preventing Premature Bearing Failures in Aluminum Plant Conveyor Systems*

Background

An aluminum plant faced repeated and premature bearing failures in its conveyor belt system, leading to costly downtime and frequent maintenance. These failures disrupted the plant's operations, impacting productivity and increasing operational expenses.

Problem Analysis

The conveyor belt bearings were failing earlier than expected due to several factors:

Contaminant Infiltration:

Dust and aluminum particles penetrated the bearings, causing abrasive wear.

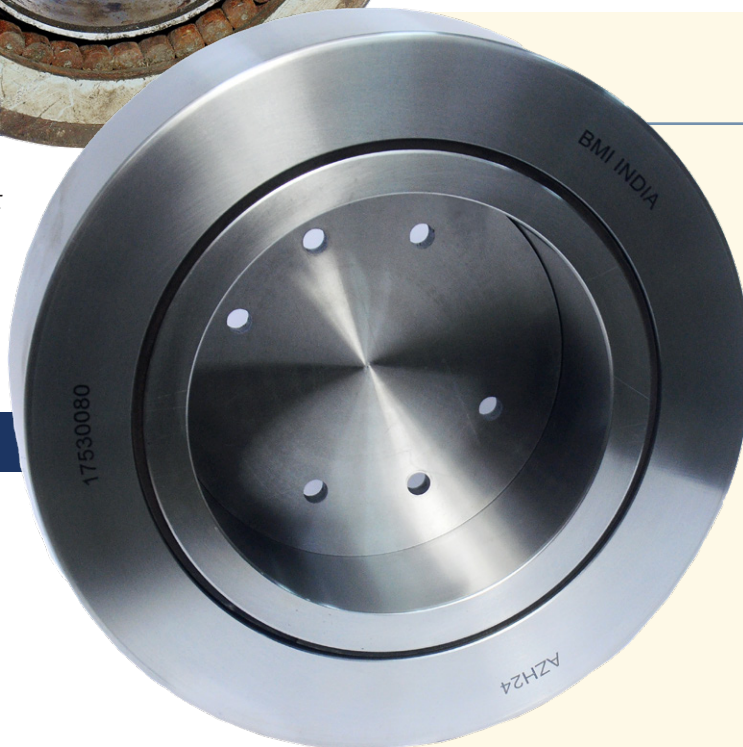
Shock Loads:

The bearings were subjected to heavy loads and impacts that exceeded their design capacity, leading to early failure.



BEFORE

Rusted bearings provided by the client



AFTER

Final bearings with improved design and seal

Solution Implementation

BMI addressed these issues by implementing these solutions:

Improved Sealing:

Bearings were upgraded with seals on both sides to prevent dust and debris from entering, ensuring cleaner operation and reducing wear.

Case-Hardened Outer Ring:

Bearings with a case-hardened outer ring were installed to withstand shock loads and extend bearing life under heavy operating conditions.

Results

These targeted improvements led to a dramatic reduction in bearing failures, cutting downtime by 80% and lowering maintenance costs. The plant experienced enhanced productivity and a more reliable conveyor system, demonstrating the effectiveness of precise engineering solutions in challenging industrial environments.

Feel free to reach out to BMI application engineers on sales@bmibearings.com for any technical questions or any such non-standard development.