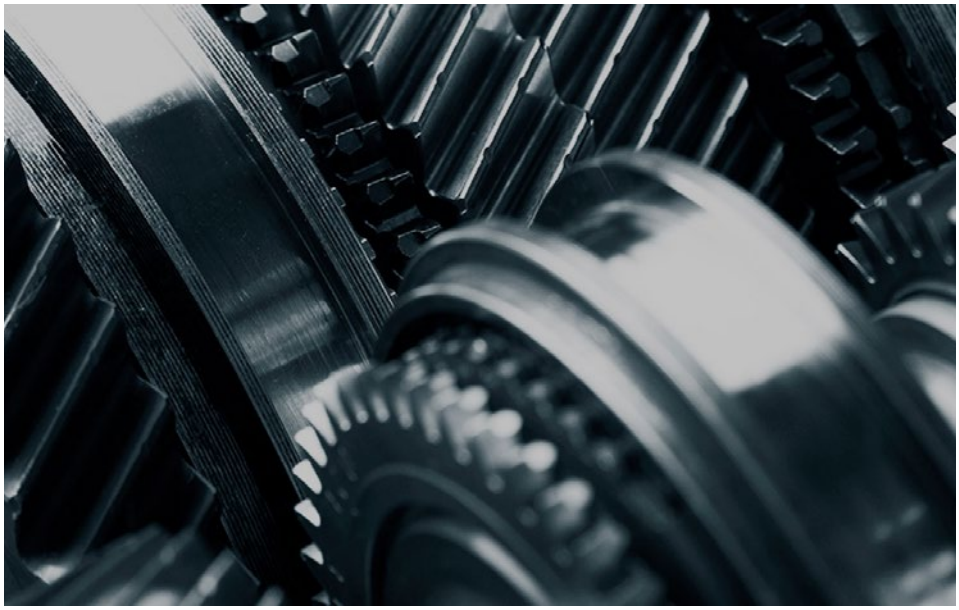
Rolling mill doubles MTBF with SKF engineered solutions for gearboxes

The Challenge

A rolling mill experienced problems with a gearbox used to drive a steel strip-pickling line feeding stand. The process operated continuously, producing high volumes, in a hot, dirty environment. The gearbox and couplings failed frequently due to shock loads caused by the impacts between the rolling stock and the work rolls.



The Solution

The customer knew that SKF could provide a total package, including application engineering, high-performance products and installation services. So they asked us to provide a solution to eliminate the recurring problem. After an analysis of the gearbox failure, SKF determined that the problem was an unsuitable bearing arrangement on one specific shaft of the gearbox. The arrangement consisted of a pair of non-SKF inch taper roller bearings. The reliability of these bearings was very low, and their maintenance and replacement procedures proved complex and time consuming. In addition, the bearings were very expensive, and delivery time could be as long as a year. SKF's proposed solution was a self-contained unit built around SKF Explorer spherical roller thrust bearings. The unit included bearings mounted inside a flanged sleeve that fit on the gearbox's shaft and on the casing.

The Result

The solution resulted in cost savings through decreased downtime and related maintenance, easier mounting and lower spares inventory. Mean time between failure (MTBF) doubled from one to two years, and the company achieved a total ROI of 325% over two years as shown in the below table.

- **Return on investment (ROI)* in a two year period - Parts and labor savings: $3,300**
- **Elimination of unplanned downtime: $11,700**
- **Net savings: $11,500**
- **ROI calculation: 325%**

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