



TIMKEN® ENGINEERED BEARINGS: SMALL CHANGE, BIG RESULTS

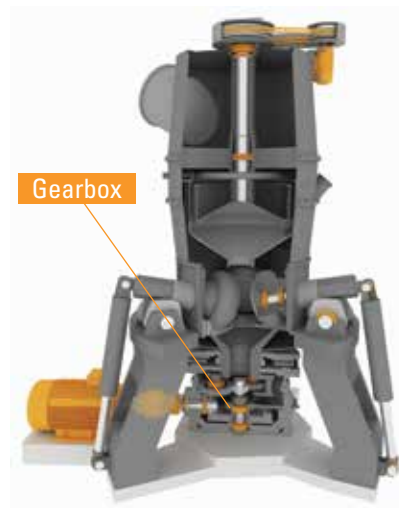
CHALLENGE

Cement plants are designed to last, and one Missouri plant was no exception. Built more than 40 years ago, the vertical rolling mill (VRM) was still using the original gearbox to grind the materials used in its cement-making process. But each year, the plant underwent unplanned shutdowns to service its equipment, including the VRM gearbox bearings, which were lasting one year at most. With these costly and inefficient shutdowns taking days at a time, the plant owner decided to seek a better solution.

TIMKEN SOLUTION

Timken engineering, metallurgical and metrology teams determined there was premature wear occurring in the pin-type cage of the gearbox input shaft bearing. The age of the VRM was a contributing factor. Our teams recommended changing to one-piece machined steel cages. Through modeling the bearing design and application in our proprietary analysis software, we also recommended a setting adjustment. Following the change of the bearing cage and setting adjustments, the same set of double-row tapered roller bearings is still running – and at more than three times the previous operating level.

With two design changes, the cement plant could improve bearing and equipment performance and make its operations run smoother.



RESULTS THAT MATTER

- Improved bearing and equipment performance.
- Financial savings from less frequent bearing replacements.
- Less downtime for unnecessary bearing maintenance.

TOTAL SAVINGS = \$200,000
OVER A **THREE-YEAR SPAN**

The Timken team applies their know-how to improve the reliability and performance of machinery in diverse markets worldwide. The company designs, makes and markets bearings, gear drives, automated lubrication systems, belts, brakes, clutches, chain, couplings, linear motion products and related industrial motion rebuild and repair services.

Stronger. By Design.

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