



TIMKEN ENGINEERED SURFACES EXTEND BEARING LIFE IN JAW CRUSHERS

CHALLENGE

Within underground mining applications, crushing more material in less time is ideal. A maker of jaw crushers experienced premature bearing failure in the tapered roller bearings within its frames. Users who were trying to increase throughput pushed the bearings past their specification limits.

Bearing failures were costing upwards of \$75,000 per machine for repairs, replacement parts and lost productivity. Timken engineers were asked to investigate the issue. We identified the root cause of failure: Increased speeds created a low-lubrication film that, when paired with the shock loads, damaged the bearings.

TIMKEN SOLUTION

Using data gathered during the bearing damage analysis, Timken recommended a solution to accommodate current jaw-crusher designs and the real-world demands placed on the equipment by underground miners. A Timken engineered surface was applied to the rollers of a Timken® tapered roller bearings and placed into service to test.

Engineered surface coatings provide a diamond-like surface on rollers to enhance performance in thin-film and debris-heavy environments. The coating reduces contamination and thin lubrication film surface damage, improving durability and avoiding excessive bearing replacement cost.

RESULTS THAT MATTER

The Timken solution extended the periods between bearing replacements, lowered operating costs and allowed for more predictable maintenance intervals. The jaw-crusher manufacturer now specifies Timken tapered roller bearings with engineered surfaces as standard for these equipment models.



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.

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