

Challenge

A major steel manufacturer was using open work roll bearings for their plate rolling mill. A maintenance manager who was aware of NSK's Sealed Clean technology was investigating alternatives for the grease being used in this application. NSK was asked to provide a potential alternative for the bearing application to achieve cost savings through the reduction of grease-related costs.

Corrective Measures

NSK conducted thorough research on this application and potential design considerations to improve the grease situation. Through application and design engineering, a potential offering of Sealed Clean Work Roll Bearings was presented to the mill. The presentation discussed the merits of the Sealed Clean technology and presented an estimation of the potential cost savings as a result of the design change.

Cost Saving Description:

Issue

NSK Solution



Cost of greasing current open bearings: 4 work roll bearings x 1.2 times per day bearings greased x 8 lbs of grease x \$2.51/lb cost of grease x 350 days per year = \$33,734.40

Cost of NSK Sealed Clean design: 4 sealed work roll bearings x 12 lbs of grease during annual re-grease x \$16.71 cost of grease recommended by NSK = \$802.08



Cost of used grease disposal = \$25,781.25 (per mill staff)

Cost of grease disposal per re-grease = \$82.88



Total cost of grease with open bearings = \$59,515.65

Total cost of grease with Sealed Clean bearings = \$884.96

Total Cost Savings = \$58,630

Result

ACTUAL COST SAVINGS

\$58,630

COST SAVING DESCRIPTION:

- ➔ Technical Service
- ➔ Improved Productivity

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1. Situational Analysis

- ➔ A major steel manufacturer was using open work roll bearings for their plate rolling mill.
- ➔ One of the maintenance managers at another mill who was aware of the work NSK had done on Sealed Clean bearings asked NSK for an alternative to their application.
- ➔ The request was due to the ongoing cost and clean-up of grease being used in the open work roll bearings.

2. Value Proposition

- ➔ Following thorough research with the mill on the grease used for this application, NSK presented a technical presentation on Sealed Clean work roll bearings.
- ➔ NSK provided an estimation of the potential cost savings of nearly \$60,000 annually, which were directly related to the grease used in the open bearings.

3. Value Implementation

- ➔ The mill saw the value of the cost savings presented and ordered the replacement bearings. This cost estimation did not include the additional costs associated with labor for handling, absorbent “diapers” for cleaning and the process water clean up. This cost estimation also did not include potential impact on the environment by making this application “green”.
- ➔ The new Sealed Clean work roll bearings were installed in the fall of 2006.

4. Measuring Value

- ➔ As a result of the recommendations made by NSK, the mill was able to reduce the volume of grease and confirmed cost savings of \$58,630.

5. Share Best Practice

- ➔ This case study was developed to highlight the value NSK technology provided through its authorized distributor to a valued customer.