



NSK

SUCCESS STORY : STEEL AND METAL WORKS

ASSET IMPROVEMENT PROGRAM

COST SAVINGS : \$28,288

Application : Cold Rolling Mill

Solution : WTF Steel Bearing

INTRODUCTION

A major steel producer was unsatisfied with the performance of their 4 row tapered roller bearings installed in the cold rolling mill. Steel shavings from the production process were entering the bearings resulting in a detrimental effect on bearing reliability. NSK performed a detailed analysis of the bearings on site along with a failed bearing and lubrication review. After analysis, recommendation was made to use NSK's Tough technology steels which have an excellent resistance to damage caused by contamination.

THE KEY FACTS

- › Application: Cold rolling mill
- › End-product: Steel
- › Problem: steel shavings from the production process were entering the bearings and affecting performance
- › Objective: Reduce downtime due to contamination

VALUE PROPOSALS

- › Analysis of the bearings, grease, structure and design of the billet mill
- › NSK bearings made of WTF steel are designed for extreme operating conditions such as those involving solid and liquid contamination
- › Technical support including on site engineering consulting and lab based bearing analysis

Pictured: NSK Water Tough (WTF)
4 Row Tapered Roller Bearing



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PRODUCT FEATURES

- › Steel material technology
- › Special NSK heat-treatment technology
- › Optimum chemical composition design technology
- › Available for four-row cylindrical and four-row taper roller bearings
- › Bearing life is 3 times longer than that of conventional bearing
- › Reduced non-metallic inclusions on raceway surface inhibiting generation of surface cracks
- › Grain boundaries have been strengthened to help prevent the propagation of cracks

COST SAVINGS BREAKDOWN

	BEFORE	COST	NSK SOLUTION	COST
› Lost production costs	Bearing life: 4 months \$1,071/h downtime × number of replacements × 4 unexpected downtimes per year	\$47,147	Bearing life: 12 months \$1,071/h downtime × number of replacements × 1 unexpected downtime per year	\$18,859
	Total	\$47,147	Total	\$18,859
			Total Cost Saving	\$28,288

