

NSK

NSK CASE STUDY



INDUSTRY

STEEL AND METALS

APPLICATION

PLATE ROLLING MILL

COST SAVINGS: \$50,279

A major steel manufacturer was using open work roll bearings in their plate rolling mill. The mill maintenance team was investigating grease alternatives to gain efficiencies. NSK was asked to provide a potential alternative for the bearing application with associated cost savings. By using an NSK Sealed Clean 4 row tapered roller bearing assembly, the customer's daily re-greasing requirement was eliminated. In addition, reduced grease disposal costs, bearing protection from external contamination and continuous operation were achieved.

KEY FACTS

- › Plate Rolling Mill
- › Open work roll bearings required daily maintenance and regreasing
- › Efficiency improvement sought by the customer
- › NSK solution: Sealed Clean technology
- › Benefits: improved grease retention, improved bearing protection, reduced disposal costs and maintenance time



Plate
Rolling
Mill

VALUE PROPOSALS

- › Analysis of the existing bearings showed that grease retention and excessive maintenance were a major issue
- › NSK Engineers were able to recommend Sealed Clean bearing options together with improved material technology
- › Consideration of the existing bearing arrangement allowed NSK to make recommendations on best fit and appropriate bearing design
- › Technical support was then provided to trial the proposed bearing arrangement
- › Results showed a significant reduction in grease usage

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MOTION
Motion.com

PRODUCT FEATURES

- › Available with Super-TF or WTF steel material, providing significantly longer service life under heavily contaminated operating conditions (STF) and water and metallic contamination (WTF)
- › Higher load capacity achieved with optimized internal design - wider cage diameter, increased number of rollers and larger rollers
- › Helical bore groove prevents creeping on the shaft
- › Advanced compact main seal / seal holder and bore seal designs
- › Bore seal prevents the buildup of negative pressure that can cause the entry of water through the main seals
- › Sealed-clean solution significantly reduces grease consumption



Extra-Capacity
Sealed-Clean
Four-Row Bearings

COST-SAVING BREAKDOWN

BEFORE	COST	NSK SOLUTION	COST
 Greasing open bearings: 1.2 times per day x 4 kg of grease x \$4.30/kg x number of bearings x 350 days a year	\$28,929	NSK Sealed Clean design: bearings x 6 kg of grease x \$13.94	\$688
 Grease disposal	\$22,109	Grease disposal (per re-grease)	\$71
TOTAL COSTS	\$51,038		\$759

YOUR PARTNER FOR MACHINE OPTIMIZATION

Our AIP Added Value Program is based around a simple proposition: ‘improvement pays’. By working with you throughout the AIP Value Cycle, we will help you achieve improvements in machine reliability, productivity and performance, all of which carry a tangible and measurable cost benefit – and we have the tools to prove it! That’s what we mean by **improvement pays**.

