

Success Story

Industry: Steel and Metals

Application: Continuous Casting Machine

Cost Savings: € 14 850

Introduction

A Steel maker was experiencing problems with their continuous casting machine for steel sections. The lifetime of a Cylindrical Roller Bearing mounted on a continuous cast roller was about one to two months. The casting machine had a very complicated cooling and lubricating piping system. The main problem was the high maintenance costs because of the necessary process to reconnect the piping system. NSK proposed to assemble the rollers of one segment with Sealed Spherical Roller Bearings equipped with high temperature grease. This resulted in significant improvement of the bearing performance and time saving for maintenance works.

Key Facts

- Continuous Casting Machine
- Long replacement time for Cylindrical Roller Bearing with oil lubrication because of complicated process to reconnect the piping system
- NSK Solution: Sealed Spherical Roller Bearings specifically designed for the application
- Significant increase of the operating lifetime
- Improved bearing protection
- Eco-friendly due to lack of contamination from the equipment
- Substantial cost savings made by reducing the maintenance time



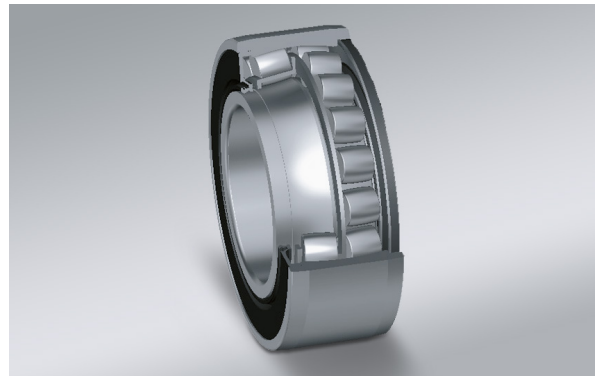
↑ Continuous Casting Machine

Value Proposals

- NSK analysed the application and proposed to assemble Sealed Spherical Roller Bearings in one segment
- With the new bearings, a dismantling and re-installation of the oil piping system was not necessary any more during the maintenance works
- Eco-friendly system reducing the oil consumption as bearings included high-temperature grease
- The time required for the replacement of the roller in the segments was reduced from 20 to 10 hours
- The operating lifetime was increased from 2 to 4 months




Product Features

- Special “outward-extending, spring loaded lip seal”
- Nitride rubber seal – or differing seals depending on temperature needs
- Special long-life grease: heat & pressure resistant
- Symmetrical roller & raceway design to prevent edge loading problems
- Special chamfer configuration for smooth axial movement
- Seal conserves grease offering longer running & improved efficiency
- Reduction in grease consumption & no grease leaks due to special seal & cleaner working environments
- Increased maintenance intervals



↑ Sealed Spherical Roller Bearing

Cost Saving Breakdown

Before	Cost p.a.	NSK Solution	Cost p.a.
 6 Sets of bearings per segment per year	€ 25.200	3 Sets of bearings per segment per year	€ 28.350
 6 Replacements per year x 3 hours	€ 18.000	3 Replacements per year x 3 hours	€ 9.000
 6 Replacements x 20 hours	€ 12.000	3 Replacements x 10 hours	€ 3.000
Total Costs	€ 55 200		€ 40 350