

Success Story

Industry: Steel and Metals

Application: Wire Forming Production

Cost Savings: € 1 202 455

Introduction

A customer was experiencing repeated failures on bearings fitted to roller assemblies on his wire drawing machinery. This resulted in excessive downtime and high maintenance costs. This was a serious concern to the management and a solution was needed urgently. NSK was called in to investigate and found that there was a lubrication and sealing problem. A new bearing and lubrication package was tested. Results showed that this solution significantly improved the bearing performance resulting in large improvements in productivity and a reduced maintenance cost.

Key Facts

- Continuous wire drawing process with high loads and arduous conditions
- High failure rates of bearings up to 75 stoppages a month
- Excessive downtime and high maintenance costs
- Bearing Failure Analysis which showed a lubrication problem
- NSK proposed Lithium Complex grease together with a sealed Cylindrical Roller Bearing unit which was tested in the machine resulting in improved productivity and reduced maintenance costs
- A significant cost saving could be realised



↑ Wire Drawing Machine

Value Proposals

- A Bearing Failure Analysis showed that the primary cause was poor lubrication performance
- A Lubrication Analysis identified the existing grease as graphite based which was not suitable
- NSK proposed a trial using a specially selected Lithium Complex grease together with a Sealed Double Row Cylindrical Roller Bearing Unit
- The trial was successful with a 40% improvement in bearing life
- The customer converted all of their roll assemblies over to the NSK proposed bearing / grease combination
- There was a significant reduction in downtime and maintenance costs and this was documented in a substantial cost saving




Product Features

- Improved contact seals prevent ingress of foreign particles or water
- High load rating
- Increased radial and axial capability
- Highly corrosion resistant phosphate coating
- Easier grease re-lubrication: Inner and outer ring re-lubrication holes
- Bearings pre-greased with Lithium grease
- Can be fitted with DIN 471 snap rings to the outer ring
- Can be used in external environments due to coating



↑ Full complement Cylindrical Roller Bearing unit with seals

Cost Saving Breakdown

Before	Cost p.a.	NSK Solution	Cost p.a.
 Constant failure of bearings / 75 Rolls changed per month		Significant improved reliability / 45 Rolls changed per month	
 0.5 hours per change / €6.000 per hour lost production cost / €225.000 per month x 12 months	€ 2.700.000	0.5 hours per change / €6.000 per hour lost production cost / €135.000 per month x 12 months	€ 1.620.000
 378 man hours / €13.986 cost per month / €13.986 x 12 months	€ 167.832	108 man hours / €3.996 cost per month / €3.996 x 12 months	€ 47.952
 Technical Support & Engineering Time	€ 2.575	No Technical Support needed	€ 0
Total Costs	€ 2 870 407		€ 1 667 952