

Success Story

Industry: Quarrying, Mining and Construction

Application: Conveyor Application for a Quarrying & Mining Company

Cost Savings: € 14 389

Introduction

An important Quarrying & Mining Company were having reliability issues with a conveyor application. The bearing inserts were operating in a very harsh environment, exposed to water and abrasives particles. Located 5 meters above the ground, inspection and maintenance tasks were especially problematic, which created difficulty predicting premature failure. NSK assessed the situation and proposed the use of Molded-Oil inserts and the result showed that bearing life was increased by 9 times.

Key Facts

- Conveyor application with remote access (5m above ground) and difficult maintenance
- Harsh environment, exposed to water and abrasive particles
- Regular failures with difficult replacement procedure and large downtime costs
- NSK Molded-Oil bearings proposed which are excellent for remote applications
- Additional benefits of improved sealing with flinger, lip seal and molded oil providing a barrier to contamination ingress
- Bearing lifetime significantly increased from every 2 months to 19 months



↑ Conveyor Application

Value Proposals

- NSK engineers reviewed the application and discovered that the main problems were contamination, water and maintenance difficulties due to the remote location
- NSK Molded-Oil bearing inserts were proposed which do not need to be re-lubricated and have better sealing due to the barrier created by the molded oil polymer
- The bearings were trial fitted to the conveyor and lifetime was increased from 2 months to 19 months
- Customer benefited from increased productivity and reduced maintenance costs resulting in a €14.389 cost saving




Product Features

- Molded-Oil inserts (with solid lubricant)
- Ideal for remote applications
- Martensitic stainless steel
- Integral Flinger seal and Nitrile rubber seals
- Bore size 20mm – 40mm
- Corrosion resistance
- Resistant to contamination increasing operating life
- No need for re-lubrication



↑ Molded-Oil Bearings

Cost Saving Breakdown

Before	Cost p.a.	NSK Solution	Cost p.a.
 Replacements per year × employees time × €30/h	€540	Less than 1 replacement per year × employees time × €30/h	€63
 Downtime costs: 250ton/h × €7/ton × time × replacements per year	€15.750	Downtime costs: 250ton/h × €7/ton × time × replacements per year	€1.838
 Life: 2 months approximately (440h)		Life: 19 months approximately (4140h)	
Total Costs	€ 16 290		€ 1 901