

## Success Story

Industry: Steel and Metals

Application: Rotary Valve

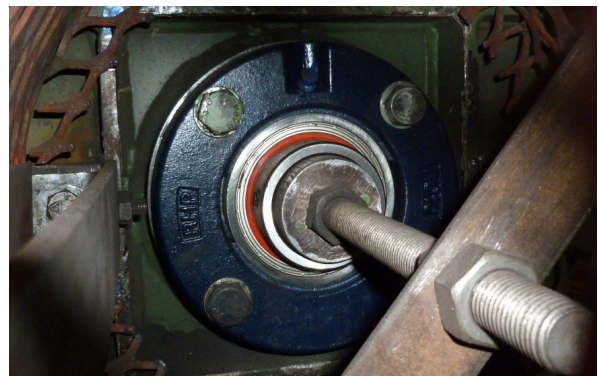
**Cost Savings: € 144 694**

### Introduction

An international steel manufacturer was experiencing regular failures on a bearing fitted to a rotary coal valve in an ore preparation plant. This occurred twice per year resulting in significant lost production costs and damage to associated components. An Application Review identifying the current bearing design was inadequate for the high temperatures involved, NSK recommended a customised HLT bearing insert within a Self-Lube cast iron FC housing together with a special heat isolating spacer. A trial was conducted with NSK Applications Engineers overseeing the correct fitting of the bearing units within the application. The NSK bearings fitted ran for over 12 months with no bearing failure which resulted in a large overall cost saving for the customer.

### Key Facts

- Rotary Coal Valve
- Overheating of bearings
- Incorrect lubrication amounts and frequencies
- NSK Solution: HLT bearing inserts with a Self-Lube cast iron FC housing, with NSK bespoke designed adaptor plate with
- Additional heat resisting material ring
- Significant cost saving generated by prolonged bearing life which eliminated the lost production costs



↑ Rotary Valve

### Value Proposals

- NSK engineering conducted an Application Review including a Temperature Survey and a Bearing Condition Report
- NSK engineers recommended HLT bearing inserts with a Self-Lube lube cast iron FC housing, with NSK bespoke designed adaptor plate and additional heat resistant material ring. They also suggested changes in the lubrication amount and intervals
- Trial conducted, with NSK Engineering overseeing the installation and implementation of NSK recommendations
- The customer benefited from reduced maintenance and lost production costs, resulting in significant cost saving

## Product Features

- Special internal geometry; C5 internal clearance
- High performance Klueber grease
- Durable silicone rubber seals
- Steel cage material
- Interchangeable with standard Self-Lube® inserts
- High performance grease and effective lubrication at extreme temperatures, with upper and lower limits of -40°C and +180°C
- Efficient sealing and protection at extreme temperatures (-40°C and +180°C)
- Steel cage and special internal features designed to function at temperature extremes Increase radial clearance (C5) between balls and raceways to help prevent radial preload



↑ HLT Self-Lube bearing insert

## Cost Saving Breakdown

Before		Cost p.a.	NSK Solution	Cost p.a.
	Cost of bearings x 2 times per year	€ 126	Costs of bearings once per year	€ 63
	€89/hr x 7 hours per breakdown for 2 engineers x 2 times per year	€ 1.246	€89/hr x 7 hours fitting for 2 engineers x 1 times per year	€ 623
	€8.938/hr x 7 hours per breakdown x 2 times per year	€ 125.132	No downtime costs	€ 0
	€2.554 per month for shutdown to relubricate	€ 30.648	€981 per month for shutdown to re-lubricate	€ 11.772
<b>Total Costs</b>		<b>€ 157 152</b>		<b>€ 12 458</b>