

Success Story

Industry: Food and Beverage

Application: Contherm Scraper Unit

Cost Savings: € 96 013

Introduction

A large producer of fish products was experiencing repeated failures on their Scraped Surface Heat Exchangers. They were changing bearings every 8 weeks which involved high maintenance costs and a lengthy machine down time. NSK investigated this problem and found that hard contaminants were entering the bearing causing failure. They proposed a trial with NSK Molded-Oil bearings which resulted in immediate improvement and significant lifetime extension.

Key Facts

- Frequent bearing failure occurring every 8 weeks across 5 machines
- Approximately 60 man hours needed to replace failed bearings annually
- Substantial machine down time, 5 hours per bearing change
- NSK solution, Molded-Oil Deep Groove Ball Bearings
- Significant lifetime improvement resulting in no failures over a 3 year period
- Productivity improvement
- Large annual cost saving achieved



↑ Scraped Surface Heat Exchanger Unit

Value Proposals

- Following repeated and costly failures the customer requested a solution to their problem on the Scraped Surface Heat Exchanger Units
- A failed bearing analysis determined that the failures were due to water and hard particle ingress resulting in lubrication breakdown
- A trial was proposed using NSK Molded-Oil Deep Groove Ball Bearings which proved to be successful with life being extended to over 3 years
- Molded-Oil bearings were fitted to all machines resulting in a reduction in machine down time and maintenance cost and a significant annual cost saving

Product Features

- Available for high speed applications
- Available in ball bearing, spherical roller bearing and tapered roller bearings types
- Rust-proof - Stainless steel for corrosive environments
- Grease-free property with no oil refilling keeps operating environments clean
- Operating life more than twice as long as grease lubrication, in water or dust contaminated environments
- Contact-seal type available in standard inventory for ball bearings
- Achieves extended maintenance-free performance as Molded Oil provides a continuous supply of lubricant



↑ Molded-Oil Bearings

Cost Saving Breakdown

Before	Cost p.a.	NSK Solution	Cost p.a.
 Previously used Ball Bearings	€ 300	NSK Molded-Oil Deep Groove Ball Bearings	€ 225
 12 failures à 5 hours downtime: 60hrs à 1.250€/hour	€ 75.000	No downtime	€ 0
 12 failures à 5 hours maintenance: 60hrs à 62,5 €/hour	€ 3.750	No labour costs	€ 0
 Mechanical Seals x 12	€ 18.750	Mechanical Seals x 1	€ 1.562
Total Costs	€ 97 800		€ 1 787