

Success Story

Industry: Power Generation

Application: Industrial Fan Units

Cost Savings: € 134 040

Introduction

An energy producer in the UK was experiencing frequent breakdowns due to bearing failure within two industrial fan units. The critical assets were operating 24/7. On average the bearings on each fan unit failed every 3 months. NSK performed an application review. The root cause of failure was attributed to incorrect bearing fixing arrangement. NSK recommended using high capacity Spherical Roller Bearings used within SNN Plummer Blocks. A trial was conducted resulting in zero bearing failures over a 12 months period, with significant improvements in performance and reduced maintenance and associated downtime costs, with 4 times greater life.

Key Facts

- Total Air Fan: direct drive overhung fan supported by two Spherical Roller Bearings in Plummer Blocks
- Frequent bearing failure taking 3 engineers 10 hours each time to repair, incurring high costs per breakdown
- Incorrect bearing arrangement (fixing wrong bearing)
- NSK Solution: High capacity Spherical Roller Bearings within SNN Plummer blocks and split nitrile seals along with recommendations on correct bearing location
- Four times longer bearing life with significant downtime reduction, improved efficiency and equipment reliability



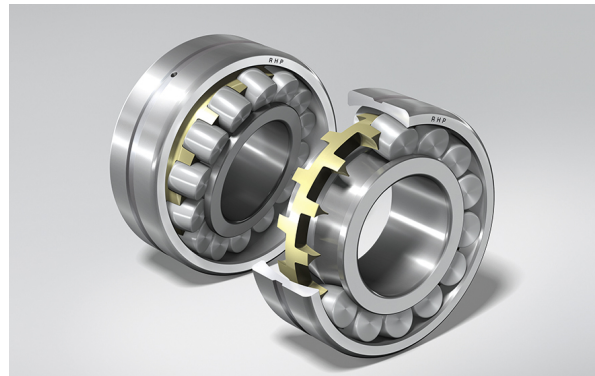
↑ Industrial Fan Unit

Value Proposals

- NSK engineering conducted an Application Review including a failed bearing examination from the drive and non-drive end bearings of one Fan Unit
- NSK recommended High Capacity Spherical Roller Bearings within SNN Plummer Blocks and split nitrile seals along with recommendations on correct bearing location. Furthermore High Capacity Spherical Roller Bearings were chosen as the internal design is more reliable for direct coupled overhung industrial fan units, due to inner ring ribs providing better roller guidance
- Trial conducted, with NSK Engineering overseeing the installation and implementation of NSK recommendations with zero breakdowns in a 12 month period
- The customer benefited from increased productivity, substantial loss of production savings and reduced maintenance down time

Product Features

- Heat stabilised up to 200°C,
- One-piece machined brass cage
- Special ring tolerances to withstand vibration, shock loads & misalignment



↑ Spherical Roller Bearing with Brass Cage

Cost Saving Breakdown

Before	Cost p.a.	NSK Solution	Cost p.a.
 Bearing Cost: 2 bearings replaced 4 times per year x 2 fans	€ 6,000	Bearing Cost: Initial installation x 2 fans	€ 1,200
 Downtime Costs: €1584/hr x 10 hr replacement time x 4 times per year x 2 Fans	€ 126,720	No downtime costs	€ 0
 Fitting Costs: €42/hr x 10 hr replacement time x 4 times per year x 2 Fans	€ 3,360	Fitting costs: Initial fitting, €42/hr x 10 hr x 2 fans	€ 840
Total Costs	€ 136 080		€ 2 040