

Success Story

Industry: Automotive Production

Application: Machine Centre

Cost Savings: € 266 000

Introduction

Key Facts

- Machine centre with very arduous working conditions
- Malfunction of the Ball Screws due to high loading and aggressive environment
- NSK Solution: High-performance seals and high-speed/high-load Ball Screws
- Nut design Ball Screws to maintain better stiffness and improved quality
- Increased lifetime by 6 times and still continue working
- Reduced production downtime and material costs



↑ Machining Centre

Value Proposals

- Plant survey to inspect the machine environment and working conditions by the NSK Engineers
- Analyse three Ball Screws to observe the running paths and lubrication conditions
- NSK Technical Department designed a special Ball Screw that could be assembled without any change from customer's side

Product Features

- High-performance seal design to work in a hard environment
- Decrease in the operating temperature and wear (precision and preload)
- Increase of the lifespan, due to the greater load capacity and the lower preload per ball
- Reduction of the torque required, due to a lower degree of preload, with a corresponding reduction of the energy consumption of the machine
- K1 lubrication system included for reduced maintenance
- Substantially longer grease life
- Optimum lubrication even with high loads and hard operating conditions
- No contamination of cutting/cooling liquid with grease



↑ Ball Screw with High-performance X1 Seal Design

Cost Saving Breakdown

Before	Cost p.a.	NSK Solution	Cost p.a.
 Costs for Ball Screws x 2 machines	€ 8.400	Costs for Ball Screws x 2 machines	€ 4.000
 Production costs: 6 hours/stop x 12 stops x 360 pieces/hour x 10€/piece	€ 259.200	No failures in 36 months	€ 0
 4 hours for each Ball Screw x 50€/hour x 14 changes	€ 2.800	4 hours for each Ball Screw x 50€/hour x 2 changes	€ 400
Total Costs	€ 270 400		€ 4 400