

## Success Story

Industry: Machine Tools

Application: Main Spindle Shaft

**Cost Savings: 20,000 euros**

### Introduction

A machine tool manufacturer produced 25 main spindle shafts with the wrong tolerances. As the tolerances were not correct the customer was looking for standard bearings to match his requirements. NSK analysed the complete application and proposed bearings with a special bore tolerance. After changing to the NSK Super Precision Angular Contact Ball Bearings the customer was able to utilise these defective spindle shafts.

### Key Facts

- Machine Tool manufacturing
- Problem with matching of bearings to spindle shaft
- NSK Solution: NSK proposed Super Precision Bearings Angular Contact Ball Bearings with special bore tolerances
- Customer matched the bearings and the target parameters of the spindle were met
- Customer did not need to recycle spindle shafts



↑ Machine Tool Application

### Value Proposals

- An NSK engineer analysed the complete customer machine tool application, identifying that the shaft tolerances were too small
- NSK proposed to change to Super Precision Angular Contact Ball Bearings with a special bore tolerances

## Product Features

- Optimum design - achieved by computer simulation of temperature rise resulting from ball skid
- Long life - Range of material specification including high quality ultra clean steel, extra pure and advanced material SHX patented by NSK
- High accuracy - Rolling elements with P2 series available in standard steel and ceramic material
- Low Noise - Quieter running high-speed spindle featuring Spinshot II lubrication system
- Extension range of cage material options, available in high speed design including - brass, engineered polymer and phenolic
- Optional seals available within the standard ISO envelope
- High rotational speed
- Minimum friction and heat generation
- Controlled rigidity



↑ Super Precision Angular Contact Ball Bearing

## Cost Saving Breakdown

Before	Cost p.a.	NSK Solution	Cost p.a.
 <p>Saving scrapping wrong tolerance shafts by changing to Super Precision ACBBs with special bore tolerances</p>	€ 20.000		
<b>Total Costs</b>	<b>Before</b>		<b>NSK Solution</b>