# Success Story

## Industry: Food and Beverage

## Application: Dip Tank Conveyor Nose Roller

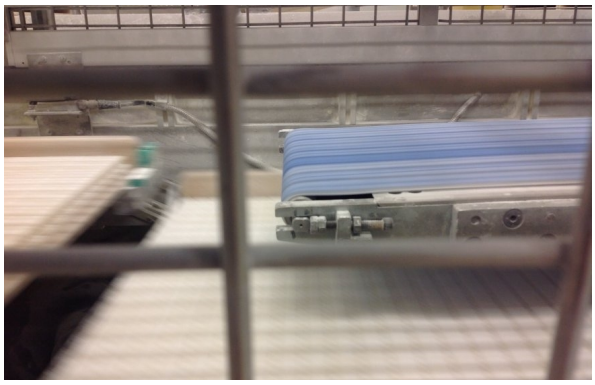
## Cost Savings: € 80 493

## Introduction

A large producer of chewing gum and sweet products was experiencing repeated bearing failures on their Dip Tank Conveyor Nose Roller. The customer was changing bearings approximately every 7 weeks which involved high maintenance costs and regular unplanned machine down time. NSK investigated this problem and discovered the bearing Arrangement comprised three Deep Groove Ball Bearing Units assembled together flush, one set each side of the roller. The bearings were not designed to operate in this type of arrangement as they did not share the load and were also affected by axial preload. NSK proposed placing a spacer between each bearing to separate them to aviod axial loading. A trial was initiated which resulted in an immediate improvement and significant lifetime extension.

## Key Facts

- Frequent bearing failures occuring approximately every 7 weeks
- Approximately 8 hours of manpower needed to replace failed bearings annually
- Substantial machine down time, 1 hour per roller and bearing set change
- NSK solution: separate each bearing from another with a spacer
- Significant lifetime improvement resulting in no failures over a 1 year period
- Productivity improvement
- Large annual cost saving achieved



↑ Dip Tank Conveyor Nose Roller

## Value Proposals

- Following repeated and costly failures the customer requested a solution to their problem on the Dip Tank Conveyor Nose Roller Application
- NSK performed an Application Review and discovered the three bearings fitted to each side of the roller were not designed for flush mounting. Spacers were placed between each to separate them to avoid axial preload
- A trial was proposed using spacers and new sets of bearings
- This resulted in a reduction of machine downtime and maintenance costs and a significant annual cost saving as roller service life was extended to 1 year

## Product Features

- Cage made of steel, solid brass or plastic
- Electrically insulated roller bearings available
- Outer diameters up to 2500 mm
- Ultra pure steel - Bearing's life increasement by up to 80%
- Smaller axial loads in both directions
- Very high speed
- High grade balls for quiet and more consistent operation at higher speeds
- Bearing Spacer Shims
- Spacer allow two or more bearings to be flush mounted which are originally not designed for this use
- Prevent axial preload and ensure bearings better share loads applied to them

↑ Deep Groove Ball Bearing

## Cost Saving Breakdown

| Before | | Cost p.a. | NSK Solution | Cost p.a. |
|---|---|---|---|---|
|  | 8 hours loss of production | € 86.400 | 1 hour loss of production | € 10.800 |
|  | - Bearings- Spacer- Shaft & Roller | € 2.888 | - Bearings- Spacers- Shaft & Roller | € 361 |
|  | 8 hours labour costs | € 2.704 | 1 hour labour costs | € 338 |
| **Total Costs** | | **€ 91 992** | | **€ 11 499** |