
Case Study

Linear Carriage and Rails



CERAMICSPEED

3 times longer bearing life achieved and still running

This automated packaging system is placed at one of Denmark's largest dairies and fits cartons with fresh milk into wheeled cages, ready to go directly to the retailers.

Problem

Due to the moist environment and frequent wash-downs, the linear components suffered from corrosion issues, as well as a scarcity of lubricants. The original rails would wear down and become noisy already after 12 – 18 months of service, forcing a stop in production and an expensive repair operation.

Solution

CeramicSpeed Corrotec bearings are fitted with FDA-approved grease and premium-quality ceramic (Si_3N_4) balls, which are 2 times harder than steel, 4 times smoother and need considerably less lubrication. CeramicSpeed hybrid bearings have a much lower friction coefficient, which reduces bearing temperatures and power consumption.

Result

As the ceramic balls will never corrode, a lack of stops in production translates to lower costs, and furthermore the contact between the smooth ceramic balls and the steel rail causes much less wear than the traditional steel/steel contact, which prolongs bearing life of both parts of the system dramatically. After 6 years of operation, the first CeramicSpeed upgrade that was installed is still in service.

Technical Highlights

- Slow reciprocating movement
- Bearing temperature: 4°C-8°C
- Lubrication: Food grade oil
- Environment: Low temp., high moist

