



Case Study

BEARINGS AND LUBRICATION



Industry sector:
FOOD & BEVERAGE

Application:
CANNING CONVEYOR

Actual saving:
£44,240

Payback period:
ON-GOING



59% of product
can be **RECYCLED**



LOWER CO₂
emissions through
REDUCED ENERGY
CONSUMPTION



41% is energy
RECOVERED

Ground-breaking technology trialled, improving hygiene while reducing costs

THE ISSUE

One of the biggest ironies of operating in a clean environment is that the repeated washdowns undertaken to keep equipment clean are one of the main reasons for problematic hygiene and machinery complications.

Particularly in the food and beverage sector, plantrooms are subject to frequent high-pressure cleaning processes, more often than not, using detergents and fluids which contain antibacterial cleansing agents.

Over time, these detergents become present under seal lips, dissolving sealing efficiency and easily entering the bearing enclosure and washing out the lubrication.

One reputable international food group was experiencing several issues with their existing self-lubricating bearing units across multiple conveyors at one of Europe's largest canning sites.

'continuously replacing bearings come at a significant cost'

The company had noticed that they were continuously replacing their bearings prematurely, which was coming at a significant cost. And on top of this, there were problems with the greasing of these units.



THE SOLUTION

Undertaking an improvements survey in 2012, ERIKS UK & Ireland recommended that the existing self-lubricating bearing units should be replaced with SKF Food Line Y bearings. Taking the original white units on an initial 6-month trial, the customer proceeded to fit this roll-out into an on-going maintenance schedule, ordering more than 400 bearing units in a two-year period.

As times moved, technology developed, and as the first trial was such a success, the customer has recently completed a second trial with the new Blue Food Line bearing units.

The new inserts were installed on three applications across the plant - stock discharge conveyor, CAM washer and Pea Separator Disc - with the new housings added at a later date.

SKF Food Line Bearing facts:

- 59% of the product can be recycled
- 41% is energy recovered
- 0% landfill
- Reduces CO² through lower energy consumption
- Provides 33% reduction in hot water required for cleaning

More than just a colour change

Lubricated for life, they solve many of the issues that are associated with conventional maintenance plans. Firstly, they're now blue - in compliance with food safety regulations to maximise optical detectability.

These units are NSF H1 registered, Halal and Kosher-approved and allergen free. Coming in six patented variations - they are available as both open and closed units.

Precisely shaped to drain all excessive liquid, each closed unit is water-proof to 80 bar, allowing for the rigorous cleaning processes associated with the industry.

'precisely shaped to drain excessive liquid, each is waterproof to 80 bar'

Looking beyond the exterior, the Food Line ball bearing range has been built from the ground up, with each component specifically designed to strike the perfect balance between performance and hygiene.

One of the biggest innovations is the new surface geometry of the housing. The patented unit has been reconfigured to overcome issues of residue build-up and aid in easier cleaning processes, leading to a reduction in potential contamination traps.

In addition to the naturally strong, lightweight and chemical resistant properties, the Blue range housings are built from 40% long glass fibres for extra reinforcement, meaning they won't creep under high temperatures.

The latest units are also designed with a back seal - the only units that have this technology - and end cover, which protects from shaft-side contamination and improves operator safety, respectively.

Finally, the central component of each unit is a corrosion resistant insert bearing, with AISI grade 420 stainless steel inner/outer rings and balls.

‘innovative sealing system provides higher levels of performance’

The innovative sealing system provides higher levels of performance, actively dealing with chemical ingress instead of trying to exclude it, like traditional bearing units.



The second trial has come to a conclusion, and the customer is once again proceeding with a further roll-out throughout the entire facility, continuing to see vast reductions in costs, energy and maintenance.

OUTCOME AND BENEFITS

- ERIKS recommended the SKF Food Line range, with two variations successfully trialled
- The new innovative design provided the global food company with a better solution for effective and easier cleaning processes
- A reduction in energy consumption, time taken to complete washdowns and a higher level of sanitation
- The product is 59% recyclable, 41% is energy recovered and requires 33% less hot water for cleaning
- Calculations revealed savings of £44,000, in addition to savings on energy, CO² emissions and man hours