



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 trial; improving hygiene while reducing costs

THE ISSUE

One of the biggest ironies of operating in a clean environment is that repeated washdowns are one of the main causes of problematic hygiene and machinery complications.

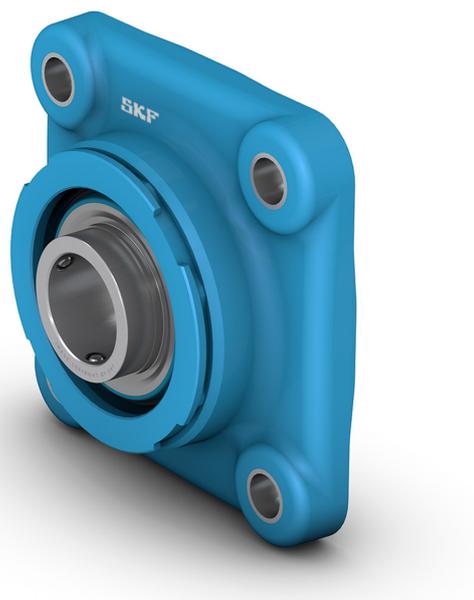
Particularly in the food and beverage sector, plant rooms are subject to frequent high-pressure cleaning processes, more often than not using detergents and fluids which contain antibacterial cleansing agents.

These detergents are designed to penetrate gaps and crevices, and therefore easily migrate under seal lips. This allows cleaning agents into the bearing enclosure, which can then attack and degrade the grease. Seals are further damaged over time, leading to a loss of sealing efficiency. This then results in water entering the bearing, resulting in grease emulsification and wash-out.

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

'very high incidence of bearing replacement'

The company had noticed a very high incidence of bearing replacement due to premature failure. This was generating significant additional maintenance costs. In addition to this, the required relubrication process created associated issues with both cost and contamination.



THE SOLUTION

Undertaking an improvements survey back in 2012, ERIKS UK & Ireland recommended that the existing bearing units should be replaced with SKF Food Line Y-bearing units.

Undertaking an initial 6 month trial with the then-current Food Line bearing unit technology, the customer proceeded to include this roll-out in an on-going maintenance schedule, ordering more than 400 bearing units in a two-year period.

Since then technology has moved on. Following the success of the first trial, ERIKS and SKF presented a developed Food Line offer and the customer successfully trialled new bearing inserts. They are now trialling complete, fully sealed units.

The new complete units were installed on three applications across the plant - Stock Discharge Conveyor, CAM washer and Pea Separator Disc.

SKF Food Line Bearing Unit facts:

- Improved hygiene during wash downs
- Reduced bacteria build up during food processing
- Proactively protect your products and ensure compliance
- Reduced relubrication and cleaning downtime
- Reduced maintenance, downtime and environmental costs

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 keeping with industry guidance and to maximise optical detectability.

The grease that these units come with as standard is NSF H1 registered, Halal and Kosher-approved and allergen free. Coming in six different shape variations, the units are available either open or closed.

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'

Looking beyond the exterior, the SKF Food Line ball bearing unit - Blue 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, which adheres to the European Hygienic Design Group (EHEDG) guidelines. 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.

The composite material for the blue range housings is reinforced polypropylene – a material chosen for its dimensional stability and chemical resistance to detergents and contaminants.

Importantly, polypropylene is hydrophobic, distinguishing it from conventional composite housing materials. The housings feature 40% long glass fibres reinforcement. This reduces the tendency of the housings to creep under temperature and load.

‘The housings feature 40% long glass fibre reinforcement’

The latest units are also designed with a back seal to protect the bearing from process side contamination, and an end cover to improve operator safety and further improve sealing.

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



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 is ongoing, and the customer is once again proceeding with a roll-out throughout the entire facility and is continuing to see significant reductions in costs, energy and maintenance.

OUTCOME AND BENEFITS

- ERIKS recommended the SKF Food Line ball bearing units - Blue Range, with two variations successfully trialled
- The new bearing units are highly reliable, improving asset availability, lasting much longer and reducing the amount needing to be spent on replacements
- A reduction in consumption, time taken to complete washdowns and a higher level of sanitation
- The product is 59% recyclable, 41% is energy recovered and requires an estimated 33% less hot water for cleaning
- Calculations revealed savings of £44,000, in addition to savings on energy, CO² emissions and man hours