RotaLube **Cuts** Spiral Freezer **Shutdowns**

Case Study

Challenge

Our customer, a food industry processor, was facing frequent maintenance shutdowns that significantly disrupted operations. A major contributing factor was ineffective chain lubrication within their spiral freezer system, a common challenge due to the extreme cold temperatures and the difficulty of accessing the chains. Their existing lubrication method relied on a small oil delivery device that applied lubricant via a brush. However, this traditional brush system proved unreliable in the low-temperature environment, where oil viscosity and brush contact were inconsistent.

Additionally, the manual nature of the process made it labour-intensive and prone to human error. As a result, chains were not being lubricated evenly or adequately, leading to increased wear, frequent re-tensioning, and the need for premature link replacements. This not only raised maintenance costs but also increased the risk of unexpected production halts.

- The customer faced frequent unscheduled maintenance due to poor chain lubrication in a cold, hard-to-access spiral freezer.
- Their oil-fed brush system was ineffective in the cold, leading to time-consuming upkeep, chain re-tensioning, and link replacements.

Solution

To ensure consistent chain lubrication, we identified the Stainless-Steel RotaLube System would be best, this is due to it being designed to work in food industries and is made from materials that are easy to clean and are more resistant to corrosion due to frequent washdowns.

The RotaLube applicator is designed to lubricate at temperatures down to -20°C, it is equipped with Viton seals which ensure proper lubrication in freezing conditions while preventing lubricant overspray or contamination which is crucial in this industry.

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Photo: Installed RotaLube System.

Photo: Stainless Steel Applicator.

Results

After installing the RotaLube System, the customer noticed an immediate and significant improvement in cost savings. Lubricant consumption was drastically reduced due to the precise application of the lubricant reducing any excess waste.
The new system also minimised stops in production by maintaining a consistent chain tension, this reduces the need for frequent adjustments.

Additionally, the durability and efficiency of the lubrication led to a longer lifespan of the chain, these improvements led to lower overall running costs and enhanced production time, which allowed machinery to operate more efficiently and reliably.

New system reduced the lubrication consumption through precise application, eliminating waste and improving cost efficiency.

The system minimised downtime by maintaining consistent chain tension, reducing frequent adjustments and interruptions.

The improved lubrication durability extended the chain's lifespan, lowering costs and enhancing uptime, enabling a more efficient machine.

Spiral Freezer

A spiral freezer is used in the food industry to efficiently freeze products, with a design that maximises freezing capacity while minimising space.

The continuous conveyor belt moves in a spiral, freezing large amounts of food. Belt speed and freezing times are adjustable for different products.

These components are prone to wear if not properly lubricated with systems designed for low temperatures. Proper lubrication ensures consistent operation, reduces downtime, and minimises maintenance costs.

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