Mixer

Case Study

£1m cost savings achieved from FTL sealing solutions used on mixers by global nutrition manufacturer

Split design of MECO seal improves installation and maintenance, retrofitting existing equipment

Introduction

FTL has been supplying superior sealing solutions to the food industry for many years, which has resulted in a deep understanding of many of the unique challenges faced in critical food manufacturing applications.

Our engineers have designed, manufactured and installed seals for all types of food processing equipment, including blenders, mixers, agitators, and screw conveyors, as well as seals for cooking and extrusion.

The Client

A global manufacturer of pioneering nutritional solutions, they were experiencing issues with contamination and unacceptable maintenance costs associated with the seals used their mixers.

MECO Outside Face Seal Type II (OFSN-472SL-RB)

Increased shaft life and improved seal condition monitoring

The Challenge

FTL was asked to address particular concerns in relation to the CIP and SIP processes:

- Inherently, mechanical packing can harbor unwanted media from previous batches and from CIP/SIP process, resulting in a 'bug trap' in the sealing area
- The current braided seals were replaced regularly, which resulted in cost accumulation from replacement seals, direct engineering labour and additional production downtime

Any proposed sealing solution needed to comprise of fully FDA compliant materials and accommodate Clean-in-Place practices, and be of a split configuration for ease of maintenance.

The Solution

A split design MECO Outside Face Seal Type II was recommended. The chosen solution offered:

- No modification to the existing mixer, an adapter plate to match existing geometry was supplied
- Split design allowed easy maintenance
- Spring-loaded seal faces reduced the need for re-tightening of packing gland studs
- Abrasion resistant PTFE rotors
- Increased shaft life, as sealing elements do not run/wear against the shaft
- Improved seal condition monitoring - sealing faces can be inspected as they are mounted outside the blender
- The outside face seal design allows Clean-in-Place and was designed to prevent the creation of bug traps
- No need to replace seal elements as part of CIP. Parts would only need replacing when worn beyond effective use
- Allows dry running, so no 'running in' period required, as with braided packing

Reduced downtime and increased efficiency result in substantial cost savings across the plant

The Benefit

FTL estimated breakeven costs to be achieved within five months of installation. Each seal will save approximately £4,000 in direct costs per month, after the initial breakdown.

Each seal is set to provide savings of approximately £180k per mixer over a four-year period, therefore all seals installed on the four mixers will achieve savings of up to £1m over five years.

FTL engineers understand that challenges faced for food sealing solutions are unique. The potential risk to human health and value of food APIs mean batch losses and downtime are not acceptable.

FTL supported the global manufacturer with a full application survey in order to determine exact equipment dimensions and to check the operating parameters. FTL engineers installed the seal and provided training for the team.

In-depth Solutions

For more in-depth solutions

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