

ELIMINATION OF MOTOR FAILURES SAVES WEETABIX £1000s

Elimination of motor failures has to date saved £1000s in maintenance engineering costs for Weetabix. These savings have accrued following the installation of 'Marlin' stainless steel AC motors from Lafert in January 2014 as replacements for conventional motors on breakfast cereal extruders at a production facility in Corby.

Two different sizes of Marlin stainless steel motors (2.2 and 3kW) have been installed on extruders on different production lines as part of reliability proving programme set up to reduce engineering costs. They replace modified normal-style finned motors equipped with special shaft-mounted water deflector discs and double-lipped bearing seals which had been installed earlier to replace failing standard motors.

The application is particularly demanding. The motors, which drive a rotating knife, have to operate in a hot and steamy environment where they can gather product material calling for high pressure hose wash-down.

The original, standard motors had a survival expectation of between 30 to 40 days before failure. This resulted in an hour's extruder downtime and two hours motor maintenance involving motor removal, installation of a new unit and seal and bearing replacements. Sometimes motors would also fail due to water ingress into the multi-component terminal boxes.

Weetabix reliability engineers then tried the modified motors



Above. Lafert 'Marlin' stainless steel motor in the working environment at Weetabix.

Below. Marlin stainless motor in a clean state at Weetabix.



Motor Life Expectancy	
Standard motor	30-40 days
Modified standard motor	114 days
Lafert Marlin motor	230+ and 364+ days (no failures - Feb6, 2015)

which had special water deflector discs in an effort to protect the improved bearing seals and bearings. They succeeded to the extent of extending expected life to 114 days.

However, both the standard

motor types had the inherent problem of cooling fins which acted as product dust catchment zones and a paint finish. High pressure wash-downs cleaned the motors but foreshortened their work cycles and promoted paint flaking.

Stainless Motors
- the cost-effective hygienic solution -

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The two Marlin stainless motors have been working continuously without failure for 230 days and 364 - and rising (as at February 6, 2015). Compared to the original motors maintenance costs, the Marlin motors have saved £4250 and against the modified motors they have saved £1750.

These savings relate exclusively to engineering maintenance costs and do not include savings resulting from uninterrupted production. For one product line where there are two extruders a machine going down means a 50% loss of production whilst on the other line with six extruders production would be cut by a sixth.

Features of the Lafert Marlin

stainless steel motor providing this long life and zero maintenance costs include its IP66 rating, smooth body, single-piece terminal box and durable Viton seals.

The IP66 rating gives the motor the ability to withstand high pressure hose wash-down cleaning whilst its smooth body (even an engraved name plate) has no crevices to harbour dust and make fiddly cleaning. The single-piece terminal box minimises any risk of water ingress as does the durable Viton seal reducing the potential for electrical and mechanical failures.

Weetabix did look at alternative smooth bodied motors from

other manufactures than Lafert but they had coatings, therefore susceptible to flaking issues. Also, they had multi-part terminal boxes, inferior seals, potentially problematic drain holes and they came with non-standard mountings which would have meant re-engineering machinery.

“The Lafert Marlin stainless motors are proving extremely reliable and hygienic with their smooth, easy-to-clean bodies,” said Dale Bradford, Reliability Engineer. “Having experienced no failures so far giving us significant savings we are planning to progressively replace all the currently installed motors installed on our extruders.”