

FOOD - PRODUCT TRANSFER

BREAD MANUFACTURING

High-Throughput Food Application Demands Extreme Reliability



CONTINUOUS
AUTOMATION



DEBRIS
RESISTANT



LONG LIFE & LOW
MAINTENANCE



EXTREME
TEMPERATURE

The bakery market is one of the largest markets in the food industry, and not surprisingly, there is a high need for modern technology to meet market demands. To keep up with today's demand, the food processing industry needs to be efficient; this means most of the tasks need to be automated. But in every automated system, there are a host of smaller components that perform simple yet essential processes. Without these components, the automation could not take place.

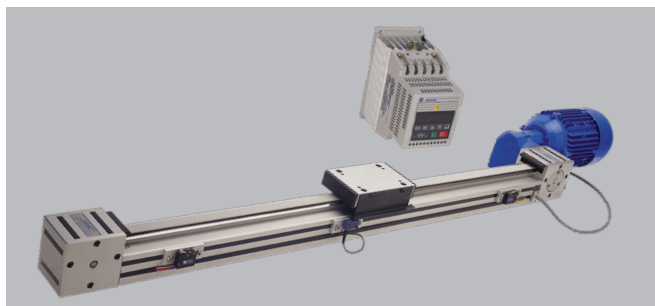
David Wood Foods manufactures bread for the biggest retailers in the UK. Using a fully automated production line, they currently produce in excess of 420k loaves a week. Automated motion systems are required throughout the line: to push loaves into the oven, as infeed and outfeed systems in the cooler, and in packing the loaves.

CHALLENGE

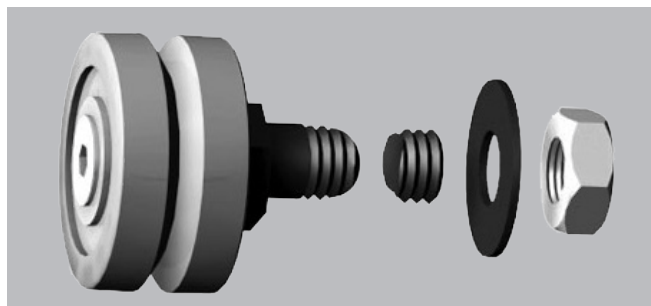
EXPANDING AUTOMATION FOR HIGH VOLUMES

Operating 24/7, 364 days of the year, this is a high duty system requiring a low maintenance, reliable solution. For example, actuators must continuously load the 200°C oven, pushing loaves in every 30 seconds, 24 hours a day. Efficiency is critical to staying ahead of the competition, and one component failure can affect the whole production line.

Additionally, breadcrumbs and dust create a hostile, challenging environment. If particles get past the seals of a motion component, the system can become jammed, with catastrophic failure and costly system breakdowns possible.



HepcoMotion DLS (Driven Linear System) from Bishop-Wisecarver



Eccentric vee guide wheels provide adjustability for easy maintenance

SOLUTION

DELIVER DEPENDABLE LINEAR ACTUATORS SUITED FOR EACH OPERATION

A total of ten HepcoMotion DLS linear actuators are used in three key areas of the production line.

Two are used to push the loaves into the oven, operating continuously in the elevated temperature environment.

A pair of DLS feed 22 loaves at a time into the cooler, while another pair provide outfeed. Each pair of actuators works in parallel with a single motor.

The final four are used in the packaging area, assisting with packing the loaves into the delivery baskets.

The DLS line is comprised of belt-driven linear modules, an AC motor/inverter package and a range of compact planetary gearboxes for use with servomotors.

CHALLENGE SOLVED

SELF CLEANING DLS SYSTEM SAVES VALUABLE DOWNTIME AND COSTS

For nearly 10 years, the DLS actuators have operated without the need to replace bearings. In the last 12 months, re-lubrication is the only maintenance that David Wood Foods have had to carry out on the DLS systems. Even the crumbs and debris are not an issue, thanks to the self-cleaning action of the vee guide wheels.

The DLS cap seals need re-lubricating every 1000km, compared to every 100-150km with ball rails - saving valuable downtime and cost. The long re-lubrication intervals work well for David Wood Foods, dovetailing with their monthly planned maintenance schedule.

When a DLS shows sign of wear, the bearings adjustable eccentric bearings can be tightened to remove any play - a simple process that does not impinge too much on production time. Moreover, if a bearing ever does need replacement at the end of its calculated life, it can be replaced individually, saving time and money.