Food for Thought

Reducing Costs, Minimising Downtime & Maintaining Hygiene in Food & Beverage Manufacturing

SEW EURODRIVE

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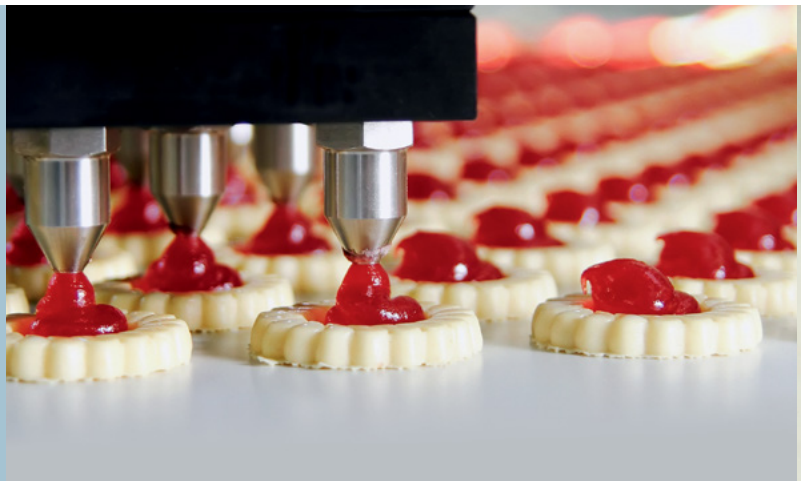
Introduction

The food and beverage industry is a vital component of Australia's economy, representing the largest manufacturing sector in the country and making significant contributions both financially and in terms of employment[1]. Recent events, such as the troubles facing SPC Ardmona, have illuminated the immense stress this industry is under to optimise production and keep costs low in order to remain economically viable. Local cost pressures have been amplified by the relative cost of cheap imports and overseas labour[2].

The relentless nature of manufacturing and the trend towards extended production hours means heavily-used equipment is more likely to experience failure at some point, disrupting overall production schedules and inevitably impacting production on a number of levels. Thus, demands on materials handling systems are becoming both more complex and more specific. At the same time, the availability of production space for accomplishing these tasks is being diminished.

"Manufacturers across the world are taking a close look at their operations to see where they can find some savings"



The Need to Optimise Operations

Food and beverage manufacturers across the world are taking a close look at their operations to see where they can find some savings – be it energy, space, down-time or through optimisation of processes. An improvement in any of these areas will translate into cost savings, leading manufacturers to review their investments in these primary areas.

The manufacturing and processing industries are two of the world's largest energy consumers, with up to 90% of costs that occur during operation attributed to energy costs. Food and beverage processing plants in particular are large users of energy for applications such as refrigeration, cooking, heating, and sterilising[3]. With energy costs continuing to rise, a reduction in energy consumption can contribute to significant cost saving.

One factor that can add to the production costs, particularly for large plants, is the use of centralised drive technology, where all control intelligence is managed via a single station. Not only does this greatly increase the complexity of the control system (and thus, the task of monitoring and operating it), it can also lead to an increase in energy input. At a physical level, centralised installations necessitate the use of more cabling and connection between the central mounted control equipment and field mounted devices, compounding the cost of installation and creating more complex troubleshooting scenarios, driving up total cost of ownership.

Centralised systems also occupy far more space than decentralised systems due to the need for large control cabinets, while decentralised drives are mounted on

the production floor, situated alongside their corresponding equipment. This allows manufacturers to better utilise their available plant space, which often represents a significant expense. The modular structure of decentralised technology offers flexibility to amend and expand operations.

Equipment manufacturers can take advantage of decentralised technology due to reduced planning times and faster start-up. Complete machine modules can be assembled and tested prior to shipment to site. This speeds up installation and commissioning time, ensuring new plants or plant extensions are up and running faster. Decentralised systems are also less vulnerable to the cost burden of troubleshooting, while a single decentralised component may not function correctly, the time to isolate and rectify the problem is drastically reduced

A crucial consideration for food and beverage manufacturers is the need to maintain strict standards of hygiene at all times. Traditional components are not only difficult to clean thoroughly, they also generally require production to shut down – at least in part – for cleaning activities to take place. This places strain on production timeframes, which can lead workers to ignore safety guidelines in order to expedite cleaning. In June 2010, a worker lost their finger when attempting to clean the rollers on a machine, which was still on[4]. In addition to reputational damage, the company incurred over $60,000 worth of fines.

Solution

Decentralised drive technology has been around since the early 90s, but its full potential is now being realised. Rather than a centralised control station, decentralised installation sees control intelligence located within the drive itself, and all modular units are standardised to ensure components and functions are connected and able to communicate with each other. Load is taken off the higher level plant control system, simplifying the overall plant operation and maintenance.

SEW-EURODRIVE is a market-leader in decentralised drive technology. Decentralised drives are ideal for system designers and operators that are planning a new production plant on a large site with a modular structure, or are expanding an existing plant.

SEW offers a number of decentralised drive solutions, including the **MOVIGEAR®** and **DRC Motor**, both of which feature IE4 (Super Premium Efficiency) energy efficiency ratings, and the traditional **MOVIFIT® Decentralised Controller.** SEW also offers additional features which assist with optimising these systems for the food and beverage industry, such as the HP200 coating. This finishes the drives' hygienic surface with a Teflon coating that minimises cleaning efforts, leading to reduced cleaning and system downtimes, ultimately reducing operating costs.

MOVIGEAR®

DRC Motor

MOVIFIT® Decentralised Controller

[1] Australian Trade Commission, “Food and Beverage: Industry Capability Statements”, 2014;
http://www.austrade.gov.au/Buy/Australian-Industry-Capability/Food-and-Beverage/default.aspx
[2] Balinski, Brent, “High dollar hurts food processors”, *Manufacturers’ Monthly*, 26 September 2012,
http://www.manmonthly.com.au/news/high-dollar-hurts-food-processors
[3] Australian Government Dept. of Industry, “Food and Beverage Manufacturing”, 2014;
http://eex.gov.au/industry-sectors/manufacturing/food-and-beverage/
[4] Burke, Jessica, “Worker loses finger, food manufacturer fined $60,000”, *Manufacturers’ Monthly,* 23 March 2012;
http://www.manmonthly.com.au/news/worker-loses-finger-food-manufacturer-fined-600

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