

## Independant drive system for flatbread line achieves payback in just 6 weeks

The problem of increasing downtime and soaring maintenance costs on a Pizza production line has been solved with the installation of variable speed drives, motors and gearboxes from Control Techniques Ireland.

At The Flatbread Company, based in Clara, County Offaly, in Ireland, a high throughput baking, cooling and packing line for pizza bases was suffering from a significant drop in production because of repeated mechanical breakdowns. An average loss per week of 4.5 hours production time, equated to a reduction in output of some 8,000 pizza bases – a loss of over €2,000 in product!

The weak point in the line was proving to be a series of nine 10-metre long conveyors that take the cooked bases through an air-cooled section prior to packing. Three metre long drive



shafts for each of the conveyors were being driven by a system of chains and sprockets from one large geared motor, with very high torque. Frequent jams, caused by a dislodged pizza and the consequential build-up on individual conveyors resulted in broken drive shafts. Knock on effects were a halt to production and high maintenance costs as new, tailor-made drive shafts had to be specially machined to replace the broken ones – amounting to high annual maintenance costs of around €3,500.

Gerard Naughton, maintenance manager at The Flatbread Company, decided that individually-driven shafts would provide an answer to this maintenance headache and contacted the local Control Techniques Drive Centre in Newbridge, County Kildare. The proposed solution comprised nine separate inverter driven motor and gearbox combinations, each one capable of operating completely



### KEY BENEFITS

- 6 WEEK PAYBACK
- INCREASED PRODUCTION
- SLASHED MAINTENANCE COSTS
- REDUCED ENERGY USAGE
- OPTIMUM OUTPUT
- SYNCHRONISED LINE CONTROL



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independently of each other. This project was adopted and installed by The Flatbread Company in July 2010.

The inverters are 0.37kW Commander SK AC drives, which power WEG 0.25kW three phase AC motors that are geared down using Rossi's brand new "Standardfit" Worm Gearmotors.

They key benefit is that each inverter is operating as a highly sensitive torque limiter, preventing shaft breaks in the event of conveyor jams. If a jam occurs, the relevant drive will sense an instant surge in current and the control system will shut down the 8 cooling conveyors immediately, the top feed conveyor drive is programmed to run for an additional 30 seconds to empty any remaining pizzas in the oven.

The result has been an increase in production over and above expected since the inefficiencies associated with continuous starting and stopping have now been eliminated thanks to the precisely synchronised line control. With the reduction in breakdowns giving an annual saving of around €3,500 plus the increase in output, Gerard Naughton estimates that the installation has had a payback of just six weeks.

"However, the variable-speed drive solution has given us other benefits too," says Gerard Naughton. "Because we can control line speed more precisely, allowing us to space the product out or in, we have been able to find an optimum speed to suit oven output and the speed of the packing machine," he says. "The old system of chains, tensioners and sprockets caused a jerky movement, but, now, the whole system is very much smoother, reducing jams too. What's more, reducing motor speed from 50Hz to 41HZ and the reduction in losses because each motor and gearbox is

directly coupled, has also cut our energy usage too – a bonus we hadn't anticipated!"

The Commander SK is small, yet powerful, taking up very little panel space and is renowned for its reliability. Commander SK is easy to fit, set up and use, with all the 10 parameters most users need being accessible from the display keypad, which is included as standard. Very important in today's carbon-aware economy are its energy-saving efficiency and its state-of-the-art manufacturing standards which are responsible for its outstanding reliability.

Control Techniques supplied the drives, motors and gearboxes direct to The Flatbread Company who built, installed and commissioned the panels. "It was very straightforward to programme the drives," comments Gerard Naughton, "and we haven't had a moment's problem with the line since."

The Rossi Standardfit Worm gearmotors which are now stocked by Control Techniques Ireland are available in six sizes, to accommodate a power range from -.09 to 5.5kW, and with a range of transmission ratios. They are designed to have their key dimensions interchangeable with the market leaders whilst having the additional benefit of robust cast-iron housings in comparison to lightweight aluminium housings of the competition.

The flatbread company was established in June 2009 to supply the food service market with pizza bases, wraps and tortillas.



OLD



NEW



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