

Engineering Productivity Into a Shrink-Wrap System



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Considerations for obtaining increased productivity and Return On Investment

PROBLEM

When large mid-western manufacturer of roofing material, needed to increase their productivity and reduce their downtime, they contacted The Lanly Company. Their challenge was to develop a continuous shrink wrap tunnel that could operate 24 hours a day, 7 days a week, with service intervals of only 6 hours once every 4 weeks. The shrink wrap ovens were to be mated to an existing Form, Fill and Seal process using 1.5 to 3 mil Polyethylene wrap.

The key objectives were to reduce or eliminate heat/air flow variability in the process and to significantly reduce the maintenance and repair time of their current systems. Additionally, the systems had to be programmable to allow processing of a number of different packages.

SOLUTION

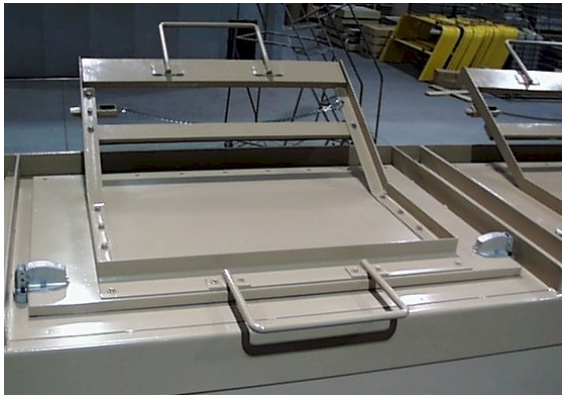
To satisfy these requirements, Lanly utilized their extensive impingement air process and controls experience. The design employed 3 separate heating zones with independent digital temperature control. The temperature is controllable from 250 – 550 and the



conveyor speed is programmable from 50 fpm to 200 fpm. All parts susceptible to wear were designed for minimum replacement effort and independent automatic lubrication was installed on each side of the conveyor chain system. The oven incorporates side doors allowing direct access to each electric heating element. The air

circulation blower motors were mounted externally to remove them from high temperature stress and simplify maintenance.





Emergency access “flip-up” doors

More importantly, the system controller incorporates a special “cool-down” cycle. This circuit senses a line shut down, sequences an automatic cool down of the oven, and continues the conveyor line to empty the product from the oven.

The oven system is controlled by a PLC with the addition of a Lanly Lanscan™ First Fault Monitor.

A special feature was the addition of emergency access doors on the top of the oven above each zone. In the past, if the process line halted, the product trapped in the oven could melt down, destroying the product bundle and causing a tremendous maintenance problem in the oven. The flip up doors on the Lanly systems serve both to quickly remove the product if the line stops and also to allow immediate, safe release of heat.



Automatic oiling system

In the case of an unplanned shutdown, the Lanscan monitor captures the first fault that occurs, greatly simplifying troubleshooting.

All production goals were met and, in comparison to their previous systems, maintenance is significantly reduced. Most important, by designing quality and serviceability into the system, potential part failures are dramatically reduced.

The results ... greater productivity and profits for the customer.

