

technology FOCUS

## POWER TRANSMISSION AND MOTION CONTROL

Project engineer Alex Hauck has enough equipment to mind at the General Mills Cincinnati plant where he works that he doesn't need to worry about chain transfers. Used for dividing up cased cereal boxes between two shrink wrappers when stacks of them begin backing up, the transfers, from Alba Manufacturing in Hamilton, Ohio, need almost no tending, he said.

According to Hauck, a unitizer arranges 14-count units of Wheat Chex cereal on slip sheets and sends them along a powered roller to the shrink wrappers. Photoelectric eyes on the main line detect when the lineup lengthens beyond the main wrapper's capacity. A



programmable logic controller directs a series of chain elevators running perpendicular to the conveyor path to lift the cube of cases clear of the rollers. The chains start turning, transferring the slip sheet and its stack of cases onto the bypass conveyor.

Alba guarantees a million cycles for its chain transfer, according to Mike McDonald, vice president of manufacturing. That's at maximum load, too, which can be as high as 6,000 pounds.

McDonald attributed the transfer's durability to a significant redesign of the lifting system. Alba engineers added a cam, actuated pneumatically, to lift the chain. They also installed bushings at the pivot points rather than relying on clevis pins alone, he said.



A million cycles is probably a conservative estimate of the chain transfer's durability. No one knows how long they will run, McDonald said. Alba tested the chain transfers for weeks, running 6,000-pound loads on them and cycling continuously.

The lift imparts a smooth transfer of the load, McDonald said. He remembered one application in which a 113-inch stack of bottles needed to turn a corner.

Hauck said jostling the stacks was something General Mills liked to avoid also. The stacks are unbound prior to shrink wrapping. They could easily be upset if the transfer mishandled them. Alba's transfers easily handle the loads

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