



AFA Systems Helps Simplify Packaging Process

OEM's continuous motion autoload cartoner with integrated sequential and motion control is designed to ease maintenance and operation while increasing productivity.

A sleeve of crackers or packet of medicine goes through a long process before reaching the last phase of production. Ingredient procurement, food processing and primary packaging all lead to product cartoning.

Throughout this progression, food and beverage manufacturers invest heavily into each product, and they don't want product cartons damaged right before they leave the plant floor to be sold. The product must be handled with care and efficiency, and be in the right orientation for carton loading.

Carton sizes vary due to the variety of product coming down the line. Bottles of contact solution may come in a package of two, but tablets may be grouped in packs of 10. Any delays from machine changeover can slow production and add unnecessary costs.

Rockwell Automation OEM Partner [AFA Systems](#), headquartered in Brampton, Ontario, designs and delivers customized end-of-line solutions for palletizing, cartoning and case-packing applications. Its advanced machines provide flexibility in package and carton sizes for global manufacturers in food and beverage, pharmaceutical, nutraceutical and household product industries. AFA Systems' machines feature Allen-Bradley® controllers and servo drives from Rockwell Automation to help significantly reduce changeover time.

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Packaging It All Together

To meet the specific needs of a potato chip producer, AFA Systems recently developed the HD-CMA continuous motion autoload cartoner. The machine provides low-risk and reliable cartoning with an efficient infeed system, and end-loads the chip bags into glue-style cartons.

At the infeed, the product is timed into the servo pack through a series of metering belts. Dual servo-pack infeed conveyors accurately collate the bags at a high speed.

The new cartoner uses a Codian Delta 3 robot from Rockwell Automation Encompass™ Product Partner [Codian Robotics](#) to automatically place bags onto a continuous motion bucket conveyor. The robot and the rest of the machine's actions are controlled by an Allen-Bradley [ControlLogix® L71 programmable automation controller \(PAC\)](#) from Rockwell Automation. The single control platform for both sequential and motion control helps simplify operation and maintenance.

Simultaneously, a rotary feeder opens the cartons. The feeder is equipped with Allen-Bradley [Kinetix® 5500](#) servo drives and VPL low-inertia servo motors, which precisely manage the equipment's motion axes. The cartons are then glued at the bottom and ready for the chip bags.



A barrel cam loading system uses a series of pushers to more smoothly move products into cartons. The HD-CMA machine can run 320 products per minute, cartoning one bag of chips per carton.

"The machine's continuous motion design allows our customers to run the machine at higher speeds, increasing their productivity and potential profitability," says Paul Langen, president, AFA Systems.

In addition, bags of chips typically come off vertical form-fill-seal machines bigger than the cartons. AFA Systems designed an overhead confining system, which more securely confines the bag on the top and side. At loading, two walls of the bucket come in to hold the bag, and the bag is slotted into the cartons with greater efficiency and less risk of product damage. Cartons are then manually boxed.

The cartoner also has a fall-through design so product spills fall directly onto the floor instead of being caught in the machine. Plant staff can more easily clean and wipe down the machine and surrounding area, without needing to go directly into the machine's components. Workers also can manage and monitor all machinery operations via an Allen-Bradley [PanelView™ Plus 700](#) human-machine interface from Rockwell Automation.

Rockwell Automation OEM Partner [AFA Systems Ltd.](#) is a provider of custom designed packaging solutions for a variety of industries worldwide. Whether it is robotics, cartoners, conveyor systems, packaging or high-speed assembly, AFA can provide custom solutions to meet requirements.

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