Answering the Call

To handle a wider range of snack foods faster and more consistently in less space, equipment manufacturers are developing speedier, more integrated and more sophisticated machines.

by Huston Keith

on't expect R2D2 on the packaging line yet, but the spunky robot from Star Wars fame could show up sooner than most snack manufacturers

expect. With market requirements placing new demands on packaging lines, manufacturers have turned to suppliers for even more automation.

Not surprisingly, packaging equipment companies are answering the call, turning out machines that do more in less space, handle a variety of products gently, and do it all faster, cheaper and more reliably.

Today, the dominant trend in packaging involves increasing throughput within existing or diminishing confines. While increased speeds are important, processors are realizing the biggest gains can be found in integrating the total process. The fastest wrappers are of

little benefit if accumulators, weighers and collators cannot deliver the product fast enough.

A large Southern snack food packaging equipment maker offers

an integrated packaging line for chips that includes a weigher, a vertical form/fill/seal machine and an automatic case erector/packer. Product enters the weigher and



Strategic alliances between similar but distinctive packaging manufacturers can lead to innovative packages, such as the yogurt-and-cereal cup.

comes out of the case-packer bagged, cased and ready for distribution. Using a continuous-motion feature, the system can reach speeds of up to 100 bags per minute for 0.5- to 16-oz. packages, the company says.

An automatic splicing device prevents downtime and film waste with no increase in floor space. Thus, only one operator is required to man this integrated system compared to as many as four employees on a more typical line.

The system's automatic case packer and touch-screen computer control play key roles in reducing labor costs and expanding automation. The automatic case-packer erects a variety of sizes and styles (including returnables). In addition, bags can be packed in standup, lay-down or mixed pattern.

Moreover, the touch-screen computer control allows an operator to run the total packaging system using only five entered variables. Or, to even further simplify the process, an operator can select a product name, letting the

computer set up optimal run conditions.

For crackers and other bag-in-box products, a system is available that weighs, bags and inserts the boxes into cartons. A new lugless belt allows faster throughput of a wide range of sizes.

BENEFITS SPRING FROM STRATEGIC ALLIANCES

Equipment makers are acquiring each other to offer the packager totally integrated systems. Such an alliance recently paid off for Yofarm Corp. and other yogurt processors. When a foreign packaging equipment company acquired interest in a Florida-based maker of inline cup filling/sealing machines, the alliance pro-

duced denesting and case-packing options for the latter's fill-seal machines. The total system denests, fills, seals and packs nearly 15,000 cups per hour in less than 20

feet of floor space.

This same system also can handle the new vogurt and cereal combination products. Cereal overcaps, which had been filled and sealed off-line, were simply brought into the main sealing machine and placed upside down aton the sealed vogurt cup. Without an integrated system, however, this packaging/marketing innovation would not be economically feasible.

Why the push for all this integration? "The food processor feels

it creates too many headaches" to together systems from multiple vendors, says a manager of a Connecticut-based company representing overseas manufacturers. This company and a Wisconsinbased horizontal wrapper company are now owned by a Swiss packaging equipment maker. The company not only

sells integrated systems, but even offers engineering services to put together a line. With food companies paring engineering staffs to cut costs, those engineering services are one of the supplier's fastest growing assets, the company president says.

The question then becomes: "Is there room for the specialized equipment vendor?" Yes, but only if the products perform well. For instance, a Florida-based casepacker manufacturer was selected by a large processor for its line of fat-free cookies. The manufacturer developed a downstack accumulator instead of the conventional upstack.

But even specialized equipment makers are producing more multipurpose machines. A Texas maker of collators and case-packers is introducing a robotic collator/casepacker. It will pack a variety of case sizes and product sizes in most stand-up configurations at a rate of

Typical Self-Standing Pouch with Zipper Workflow

The stand-up pouch has provided snack companies with an economic alternative to glass or spiral canisters while generating consumer excitement.

cookies in totes and placing them in magazines to feed to the wrappers. The machinery supplier split the production to produce both flavors simultaneously and sequence them into the wrapper directly to produce the desired packaging. The magazines and all manual handling were eliminated.

40 picks per minute. With multiple packages per pick, it can keep up with the fastest baggers.

In another example, a Northwest wrapper maker was able to eliminate considerable breakage

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and labor costs by integrating production and packaging. To package two flavors of sandwich cookies in a four-count vending package, a cookie processor was making each flavor in batches, stacking the

MORE AND MORE ELECTRONICS

Packaging machinery makers have liberally applied computers and electronics to their products. Programmable controls, PC-based control units and even touch screens are available for several types of equipment. Now, information on run conditions can be fed into a network or a master control center for better coordination of production or system troubleshooting.

Electronic controls have permitted automaton in areas where it was not possible before. A Wisconsinbased weigher maker uses statistical filters in its controls to account for normal vibrations. Now processors can put a weigher almost anywhere in a plant. These weighers also have plug-in electronic control modules for each bucket to reduce maintenance

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downtime and increase control.

Before electronic controls, handling delicate or non-uniform products was a messy nightmare for baked snack and candy processors. The above Connecticut company now uses cameras, photoelectric eyes, ultrasonic monitors, variable frequency drives and servo motors to convey products into wrappers at 500 to 600 items per minute without touching.

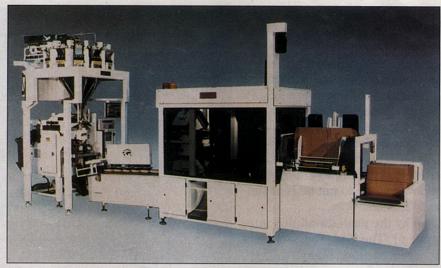
Downtime is reduced and maintenance is simplified with electronic controls and servo motors. A horizontal wrapper manufacturer in northwest Wisconsin uses servos to prevent jams. The touch screen control can even troubleshoot maintenance problems.

At the pinnacle of packaging technology are robots. Once considered a high-tech marvel too expensive to use in "mundane" food processing, robots are appearing more and more in snack food packaging. Often the robots are the missing link that completes a fully automated, integrated operation. For a fragile fat-free snack, "robotic systems are the next step to replace manual loading," predicts the Wisconsin horizontal wrapper maker. Potential labor cost savings could reach into the millions of dollars.

STAND-UP POUCHES

The newest package in the snack food industry, the stand-up pouch, continues to generate interest and excitement. For example, new packages from Nabisco Foods Group's Planters Division have been jumping off the shelf, and are one of the major reasons for the 5% growth in the snack nut market. Mariani Packing Co., a regional fruit snack maker, has seen its market share jump 50% with its standup pouch package.

Before Planters rolled out its nut products, the company conducted consumer research on the bags. Eighty-one percent of those polled said the bags were better than other packaging; 73% said the bags were more appealing and attractive;



This integrated packaging system for chips combines a weigher, a vertical form/fill/seal machine and an automatic case erector/packer. Capable of handling bags at speeds of up to 100 bags per minute, the unit only requires one operator.

91% found them easier to carry on the go; and 66% found them easier to eat from.

All these standout results are attributed to the unique package look and outstanding graphics, says the manager of a Florida-based man-

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ufacturer that produces the pouches. Young people have started buying these products, in contrast to the more typical "bridge club" buyer.

When a zipper feature is added, the stand-up pouch will be a runaway success, he predicts.

"Food processors are still waiting to see if Planters will be successful with the stand-up pouch," cautions a manager at the Connecticut company, citing the lack of success with Agree shampoo in a pouch. Nonetheless, he is ready with a line of pouch machines that maintains 160-perminute line speeds even when adding a zipper.

Even if stand-up pouches should fail in the marketplace, these machines produce a superior flat pouch versus vertical machines, the Florida-based manager claims. Leakers are guaranteed less than 1% vs. 3% to 10%. Zippers cost 30% less because they are applied to the short side.

Both stand-up manufacturers agree that the pouch has many advantages over the packages it currently replaces. At a cost of under seven cents each, it easily beats the total cost of glass jars or spiral wound canisters when shipping and storage are considered. It is also very competitive to bag-in-box applications in capital cost and floor space, as well as individual package cost. As machines with larger sizes are released later this year, the potential will be even greater.

Be it a new package or new equipment, snack manufacturers have many more options now available, including R2D2. ●

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