

Thorough Packaging Line Analysis Doubles Production for Nutraceutical Supplement

Today, healthy living is more than a growing trend. Helping us to look and feel younger, nutraceutical products are one of the fastest growing markets.

A growing market

Life expectancy has increased over the last two decades and an aging population is retiring younger with more disposable income. This same group wants to look younger, feel more energetic and stay healthy to enjoy its leisurely schedule. As a result, in helping people to look and feel younger, nutraceutical products have become one of the fastest growing markets.

Demand for efficiency

When a customer gained a huge order for a popular calcium supplement, Dobby provided a full packaging line that exceeded their expectations. The application allowed Dobby to move into the packaging market of filling thermoform trays and the volume saw Dobby utilize the robot's reflex pick ability. The contracted delivery timeline between the co-packer and the manufacturer demanded a more efficient packaging line to replace current processes.

Success where others failed

The co-packer originally chose to work with an integrator but, two months after the initial install, not a single product had been successfully packaged and manual labor was still required.

In quite a dilemma, the co-packer contacted Dobby sales agent, Bill O'Neill, co-owner of Lemmel-O'Neill Packaging, based in Dallas, Texas. After discussions and evaluation, Dobby determined the integrator's solution would never handle

Delfi FP
reflex pick action
with 6-count end
effector







the necessary volume of product. Knowing the aggressive delivery schedule, Dobby worked quickly and developed a complete packaging line, including robotic product handling at 800 ppm.

Dobby took extra steps to ensure customer satisfaction due to the customer's previous unfortunate experience with the integrator. To truly simulate the customer's production line, Dobby fabricated thermoformed trays to the customer's dimensions on the infeed conveyor, as it would operate in the plant.

Amazing speeds

On a four feet wide conveyor belt, in a dense random pattern, the bite size product enters the Delfi Feed Placer robot cell. Advance vision tracking allows a continuous production flow, to pick and place the calcium bites efficiently, and two robot arms, equipped with a six-count, reflex pick, end effector, pick and place 400 ppm into the thermoform trays. As the horseshoe conveyor rounds the bend, the remaining 400 pieces are picked and placed in the trays by a second robot cell with two arms.

The high pick and place speed was achieved by the Delfi robot's ability to reflex pick. The end effector has six circular suction cups to successfully pick, orientate and place product. This unique reflex pick process allows one piece to be picked per suction cup at a time. To prevent the end effector from disturbing any of the product as it moves on the conveyor, it reflexes, or holds the product up, to quickly and accurately pick more product.

"One-stop" shopping

The cartoning process was not part of the customer's original request but they were even more satisfied with Dobby's ability to provide a one-stop shop for the whole line.

After the bite size products are placed in the thermoform trays, they are sealed and cut to size with the customer's existing equipment. Continuing the packaging process, the Dobby Cobra Carton Former drop places formed cartons onto a conveyor. An automatic, carton demand, photo-eye monitors the backlog of formed cartons to provide the precise carton flow necessary based on the upstream demands.

The formed cartons travel to the Dobby Paloma TL-2 top load robot. The advanced tracking software of the Paloma top loader is capable of picking the product from a moving conveyor and top loading a moving carton.



End of the line

The thermoform trays of product are picked and placed into the cartons, with five trays per carton. The Paloma robot is equipped with two arms to accurately place 135 trays per minute. To complete the packaging process, the filled cartons travel to a Dobby 820e Carton Closer for a secure glue seal. The filled cartons enter the Dobby 820e Tri-Seal Carton Closer at a speed up to 32 cartons per minute. The closer accepts random carton flow and accurately stages the cartons

prior to the glue application process. To ensure an accurate glue pattern, a Nordson Bravura Hot Melt Unit has been integrated. Once the cartons are closed, they are ready for shipment.

The customer was so pleased and impressed with Dobby's capabilities and product offering that a second line was ordered prior to the Factory Assurance Test (FAT).

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Two Delfi FP cells filling thermoform trays

2
Paloma TL:2 loading sealed trays into cartons

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