CLEVELAND VIBRATOR COMPANY

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APPLICATION REPORT : FOOD AND AGRICULTURE INDUSTRY

How vibratory tables improve product settling for EcoCube™ Packaging Systems

"We are able to add more product to the existing bags because of the settling effect caused by the Vibratory Table."

- Tom Hollman, Director of Sales, EcoCube™ Packaging Systems, LLC

CHALLENGE

Significant gains have been made in improving the quality, reliability and functionality of packages along with new developments in entire packaging systems that can handle the new-fangled bags and pouches. That is particularly true at EcoCube™ Packaging Systems, LLC where the team has improved numerous processes including a unique 'flip-top-lid' reclosure, vacuum barrier options, palletizing procedures and modular filling machines. EcoCube can now offer customers manual filling, semi-automated or fully automated filling machines, including robot stacking and palletizing. However, this packaging system needed equipment to settle bulk product inside the bag or carton prior to sealing.

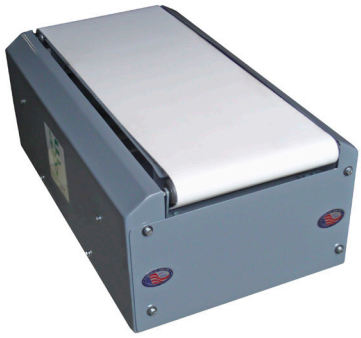
SOLUTION

The BT Series Vibratory Belt Table from Cleveland Vibrator Company fully complements other components within the EcoCube™ Packaging System. The belt table simultaneously settles product within its container while transporting the container to a closing and sealing machine. Linear vibration aids in settling the material in the container before the container is closed.

FEATURED PRODUCT

BT Vibratory Belt Conveyor Table

SPECS



- Design load: 60 Lbs.
- Belt Conveyor: 14" x 36" long sanitary belt
- Belt Drive: 0.16 HP Gear Motor with Variable Frequency Control
- Vibrating Deck: 14.5" x 34" flat
- Drive: Twin RE-220-6 Vibratory Motors with Variable Frequency Control
- Mild steel construction

How vibratory tables improve product settling for EcoCube™ Packaging Systems

"We design packaging systems for a host of customers, including those that produce and sell spices, almonds, pet foods, and even cement, sand and fertilizer," says Tom Hollman, director of sales for EcoCube™ Packaging Systems, LLC, based in LaVista, Nebraska. "These systems are custom-designed based on annual tonnage of product, the number of bags needed, net weight per package and other criteria."

One innovation used by Hollman and his crew is the EcoCube™ Bag that forms into a cube when filled. This design allows more flowable product per container, greater palletizing, higher concentration of pallets per truckload, reduced storage, and better stacking on the display floor.

The unique EcoCube™ bag features five chambers. The CVC BT Vibratory Belt Table ensures that ingredients are level in all chambers before closing and sealing.

VIBRATORY TABLE LEVELS INGREDIENTS

According to Hollman, each EcoCube™ Packaging System combines different components per the specification dictated by the end-use customers, but key elements include the net weigh scale, regusseter, heat sealer and a vibratory table, the latter made by Cleveland Vibrator Company.
The vibratory table, nestled between the net weigh scale and regusseter, effectively settles bulk product inside the bag or carton prior to sealing. This is particularly important when customers purchase the EcoCube bags with their custom-designed packaging system.

"The CVC vibratory table is a critical piece of the system because it levels out the ingredients inside the cube bag," observes Hollman. "There are five chambers in the EcoCube bag with 80% of product going into the center chamber and the remainder flowing into the four corner chambers. The challenge is to make sure the product is level in all five chambers and the CVC vibratory tables do just that."

BT SERIES VIBRATORY BELT TABLE ALSO USED

Hollman also recommends the Cleveland Vibrator BT Series vibratory belt table when customers inquire about the EcoCube Packaging System. This 18" wide x 36" long vibratory table simultaneously settles product within its container while transporting the container to the closing and sealing machine. Linear vibration aids in settling the material in the container before the container is sealed.

The BT Belt Table Conveyor also flattens bags prior to palletizing, without damaging the bags. There is no pinching, just gentle vibration to naturally flatten the bags.

Why is product settling so important? It increases stacking efficiency on the shipping pallet by eliminating all of the air spaces between containers. Twenty (5-gallon size) EcoCube bags can fit on each layer on a standard shipping pallet (40" x 48"). Frequently, they are stacked 5-6 layers high and the pallets are double or tripled stacked in the warehouse, reducing warehouse space by up to 13 times, according to Hollman.

"We need to settle the ingredients within the bag, especially the four corner chambers, to unitize the bag into one solid block, thereby creating a solid skid," Hollman explains. "A bag that has insufficient product settling comes out more rounded in shape and will not palletize correctly. That's why we need the vibratory table at an early stage in the packaging process."

"We rely on a lot of partners to help build the EcoCube Packaging System and we custom make each system," Hollman says. "Cleveland Vibrator has provided us several models of vibratory tables that match the needs of our customers. When a customer wants something different, our partners have to be flexible. CVC has been a great help in this regard."

ABOUT THE CLEVELAND VIBRATOR COMPANY

The Cleveland Vibrator Company has been driving innovations in materials handling since 1923. From our corporate headquarters in Cleveland, Ohio, and in partnership with HK Technologies located in Salem, Ohio, we've met the challenges of more than 15,000 customers all around the globe in a vast array of industries. Our comprehensive product line includes air-piston, rotary electric, electromagnetic, turbine and ball vibrators, as well as a wide variety of fabricated feeders, vibratory screeners, ultrasonic screeners, vibratory conveyers and vibratory tables used for light, medium and heavy-duty industrial applications.