

The world of packaging is displayed in its glory in the snack foods industry. Candy, chocolates, gum, mints, etc are all products packaged with vacuum. A typical national brand candy is manufactured in a factory that could have as many as 40 vacuum pumps.

The Canadian facility of Ferrero Roche Chocolates has 37 Becker Vacuum Rotary Vane Pumps, 6 Becker Regenerative Blowers, and 2 Becker Oil Lubricated Rotary Vane Pumps.

Mixing Preparation

Vacuum Pumps are used to convey sugar and bakery ingredients to individual mixers. The use of vacuum controls the dusting of dry products and adds no heat to the air stream to change the shape of crystals.

Regenerative vacuum pumps are used by many OEM's in industrial janitorial vacuum applications to prevent allergen spreading from product to product. The production lines are treated as islands with all waste captured and accounted for.

The mixing process may require vacuum to create a specific density of product. The pumps used here are large and can be Becker VTLF 250-500 series.



Vacuum Lifting

In large facilities the movement of ingredients is all done with pneumatic or vacuum conveying. In smaller facilities the ingredients are moved by bag. The lifting of the bags is difficult resulting in injury and slower production.

The vacuum lifting industry was created to solve the problem. The use of vacuum pumps to lift heavy bags is now common place. Becker high efficiency regenerative vacuum pumps are used here. Depending on the suction head and product to be lifted the Becker Oil-Free Rotary Vane Pumps are also used.



Molding and Forming

In the case of hard candy or "gummi" type products a starch mould is created to press the shape into prior to pouring the product. To speed the setting of the starch to allow for quality moulds, vacuum is used to remove air from the powder.

If a chocolate coating is applied, blower driven air knives are used to remove the excess and also to control the thickness of the top coating.

Wrapping, Bagging

Once the product is complete the many paths of packaging begin. Vacuum is used to hold the foil sheets on a conveyor to allow mechanical folds to wrap chocolate bars. The large flow U series Becker pumps are used here. Vacuum is used to pick, place, and remove product prior to the next step. (Becker VT and KVT)

Bagging of candies is completed in a form fill and seal machine or in pouch packaging. Pouches are normally preformed and require vacuum to transport and to open the pouch. Becker VT Series Pumps dominate this type of machine.



Carton Erecting, Case Packing

This procedure places the finished product into a carton. The carton is moved into place and opened with vacuum (carton erecting). The finished product is now placed in a corrugated case for storage and shipping. This is the ideal application for Becker VT series and small KVT pumps.

Palletizing

The finished box is now picked up and placed on a pallet. High speed robotic arms require high flow strong suction to ensure accurate placement and no dropped cartons.

This procedure was once dominated by compressed air operated venturi vacuum pumps. The technology has developed to the limits of venturi pumps. The high cost of compressed air and limited supply, have created a need for Becker Oil-Free Rotary Vane Pump technology. The vacuum fixture or suction heads are adaptable to motor driven vacuum pumps. With increased vacuum energy levels.

Summary

The snack food industry is the home of thousands of OEM supplied vacuum pumps. The repair and parts business is ongoing and opens the door for new and more efficient processes that are both energy efficient and faster.