



Bosch Packaging Technology



Emerson's Early Involvement with Bosch Solves a Tough Application Challenge for its Packaging Technology Division

Background

Through its Packaging Technology Division, Bosch is a leading provider of process and packaging technology. In addition to providing filling, process, and packaging equipment for pharmaceutical products and confectionery, Bosch Packaging Technology offers packaging solutions for cargo and bulk materials in the food industry.

Consistent, uncompromised quality for such sensitive products is paramount. When packaging food, product characteristics such as aroma cannot be adversely affected. As a result, Bosch Packaging Technology developed the VIS flavor protection valve. It protects the flavor of the coffee in the packaging even after prolonged storage. The VIS valve is installed inside a bag and permits the degassing of the bag into the environment. The valve also prevents oxygen from entering the package which can compromise the quality and aroma of the contents.

Challenge

The internal VIS valve from Bosch Packaging Technology must ensure the best possible aroma protection for the package contents without compromising the appearance of the bag.

The VIS valve consists of two parts: the injection-molded base body of polyethylene with a woven filter medium and the valve diaphragm. The valve itself is welded onto the packaging foil in a machine that forms, fills, and seals the bag with a separate valve applicator to create a sealing module.

Bosch Packaging Technology machines are renowned for highly reliable performance and low packaging costs. But the most important production requirement for the VIS valve application is a welding technology that ensures a secure connection between the valve and the bag foil with high weld repeatability and consistent valve function. The application's requirement for rapid cycle times further complicated the challenge.

The Emerson Solution

Bosch Packaging Technology needed an alternative to the heat-sealing method it was using and engaged the packaging experts at Emerson's Branson Ultrasonics. The Branson team got involved in the early development of this new application, starting with the selection of materials, the design of the weld seam on the valve base body, and finally the design of the ultrasonic sealing tools and sealing station.

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The Bosch and Emerson experts collaborated successfully and chose the Branson ultrasonic DCX A Power Supply and 40kHz Stack with 4TP Converter to solve the challenge. It provided the weld repeatability, process monitoring, and long service life required of all the system components. Its 40kHz technology was able to produce a tight weld, even when diverse types of foils were used. And unlike the previous heat-sealing method, the DCX ultrasonic technology did not interfere with the valve function, and provided a weld process that operated reliably, with flexibility, and rapid cycle speed to help keep the unit costs per bag economical.

Results

Emerson's reliable, user-friendly Branson ultrasonic technology satisfied all the requirements of Bosch Packaging Technology. By providing reliable, flexible, ultrasonic welding equipment and supporting the mechanical integration of those components through high levels of customer service, all standard Bosch VIS valve applications are now produced with consistent seal strength and proper valve function.

"In working with Emerson, we appreciate above all their high degree of reliability and the long-term, future-oriented partnership we anticipate."

