Ultrasonic Sealing Technology for Flexible Packaging

MDT Staff

Rinco Ultrasonics, a leading manufacturer of ultrasonic welding equipment, has unveiled breakthrough technology for ultrasonic film sealing of flexible packaging for dry and liquid foods, personal care items, and electronics. The company's new FPA series ultrasonic pouch sealing systems elevate ultrasonic welding to a new performance level, enabling users to increase seal strength, improve aesthetics, and broaden the processing window versus competitive ultrasonic sealing and heat sealing processes.

The FPA-4500 was designed specifically for sealing pouches with up to four and a half square inches of seal area while the FPA-4500S was created for use in duplex and triplex applications where a narrow profile is required. Rinco's entire FPA series of ultrasonic sealing systems have been designed to replace existing heat sealing equipment on liquid filled pouch form-fill-seal (FFS) machinery or pre-made pouch systems.

The novel systems incorporate Rinco's patented PPS0145 seal technology which significantly expands what is possible in ultrasonic film sealing. Each FPA system features a highly rigid actuator capable of rapidly generating the clamp forces required to seal pouches with minimal cycle time.

"Our technology propels ultrasonic welding to an entirely new level, broadening the design and manufacturing options for OEMs and co-packers, simplifying the process, and making it less costly to operate," explained Gordon Hull, managing director of Rinco Ultrasonics. "The limitations of ultrasonics have been solved, making the joining system a highly useful and viable option for a range of flexible packaging applications."

Rinco's unique PPS0145 interlocking film sealing technology permits seal patterns with greater surface area than competitive ultrasonic seals. In addition, it allows production of contour-shaped seals, unlike the straight line seals offered by competitive ultrasonic equipment. These seals can take almost any configuration, offering end users a range of branding options to differentiate their products, according to Hull.

The new ultrasonic film sealing system produces seals with greater surface area than competitive ultrasonic systems and provides the widest processing window of any ultrasonic sealing system currently on the market. Seals anywhere from 2-mm to 25-mm are now possible compared to 1- to 2-mm previously, according to Hull. With the interlocking design and robust equipment, Rinco can offer wider ultrasonic seals which are more preferable by end users, without the need for follow-up heat sealing, thus saving time and cost.

The patented ultrasonic seal technology also delivers an increase in bond strength over conventional ultrasonics. Depending upon the film used, Rinco has determined that its interlocking pattern can provide a 20% stronger bond than conventional ultrasonic seals.

Rinco offers a complete line of actuators, the FPA 4500 series and 2500 series models, for OEMs, co-packers, and end users. These are coupled with Rinco's robust system components including generators, converters, boosters, and tooling. The FPA series actuators are designed specifically for the packaging industry as a drop-in retrofit to convert heat sealing stations to ultrasonics. They are extremely rigid to accommodate the demands of sealing thin films, and various sizes are available to suit any horizontal sealing application.

The AGM series generator features 100% digital circuitry for precise control of the sealing process, along with upper and lower process set-up for quality monitoring and sophisticated graphing capabilities for easy troubleshooting.

Rinco manufactures the FPA series ultrasonic pouch sealing system at its Danbury facility. The company has already sold many systems to OEMs, co-packers, and end users in the U.S. and abroad.

For more information, visit www.rinco-usa.com [1].

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