

Emerson delivers innovative spin-weld solution for KarmaCap and preserves launch of Karma Wellness Water

RESULTS

- Delivered perfect hermetic seal for KarmaCap
- Engineered custom machine software to deliver target production
- Achieved required 20-cycles/min production volume
- Helped install and set up four Branson SW300 spin welders



APPLICATION

Hermetically seal unique “reservoir” cap design on vitamin water bottle.

CUSTOMER

Karma Culture LLC

Karma Culture was introducing Karma Wellness Water, a new vitamin water that promised greater nutritional value than competitors’ because it protected its vitamin ingredients from the deteriorating effects of water until the time of use.

CHALLENGE

To achieve its objective, Karma developed the “KarmaCap,” a unique reservoir cap that requires an air- and watertight seal between the upper “capsule” portion of the cap containing vitamin powder and the lower, screw-on base of the cap. This design allows the user to puncture the seal and release the vitamins into the water directly before drinking.

Karma’s initial efforts to seal the reservoir portion of the KarmaCap to its screw-on base portion were ineffective. The seal leaked, allowing water to mix with the vitamin powder prematurely.

Emerson faced three challenges. It needed to develop a spin-welding process that would:

1. Create the necessary air- and watertight seal
2. Result in minimal flash for aesthetic and product integrity
3. Deliver a perfect seal at a cycle time of 20 units per minute

“Product development envelopes you in a realm of innovation where you don’t always know what you need, until you absolutely need it. Emerson understood what we needed and was there the whole time. The Emerson support staff, just like the Branson technologies, sits awaiting your call as an immensely powerful solution and support.”

Darren Coon
CTO, Co-Founder
Karma Culture

SOLUTION

Emerson and its Branson technologies experts collaborated closely with Karma to design a custom tool that utilized a knurl to grip the LDPE parts securely during spin welding. The Karma/Emerson team then developed a prototype fixture and spin tool to demonstrate that its joint design and welding process would successfully create a clean, optimal seal. However, the standard machine software would not deliver 20 cycles per minute. So Emerson control engineers created a customized program and incorporated it, along with other modifications, to the welder/application setup; then the machine could create the seal with only three rotations of the part.

RESULTS

Karma achieved its goal of producing a perfect hermetic seal for its patented KarmaCap at the necessary 20 cycles per minute and is initiating production with four Branson SW300 servo-motor-driven spin welders, which Emerson also helped install and set up for production.



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