

Vacuum casting technology facilitates record development cycles for automatic juicer manufacturer Zumex



Customer:

Zumex

Industry:

Precision manufacturing

Challenge:

To move from outsource to in-house production of vacuum cast juicer components.

Solution:

Vacuum cast machine adoption, coupled with training and ongoing support from Renishaw.

The food and beverage industry is a competitive sector where companies are always looking to reduce costs. The professional juicing machine manufacturer Zumex recently invested in a Renishaw 5/01 PLC vacuum casting machine, which allowed it to speed up its development cycle and cut third party costs.



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Background

The Zumex Group is among the leading designers and manufacturers of automatic juicers for the hotel, catering and retail sectors, as well as industrial juicers. Headquartered in Spain, Zumex has a global presence in more than 100 countries and for the last 30 years, the company's innovative culture and avant-garde design has placed it at the forefront of the industry.

An integral part of this ethos is Zumex's continued dedication to research and development (R&D). The company constantly adapts the design and manufacture of its products to respond to market needs and drive the industry forward. In 2014, when the firm decided to invest in a vacuum casting system to produce prototype parts for its juicing machines, Zumex got in touch with global engineering company Renishaw.

Zumex's unique juice extraction system guarantees flavour and hygiene because there is no contact between the juice and the peel.

The company was the first to introduce automatic extraction in its professional juicers and manufactures its machines in an antibacterial silver polymer that inhibits the growth of bacteria.

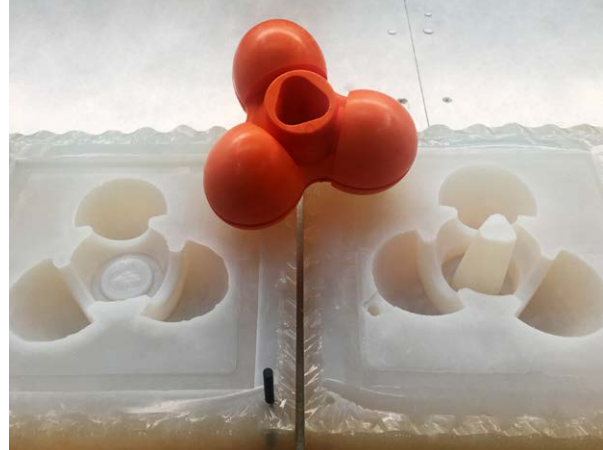
Before approaching Renishaw, Zumex used computer aided design (CAD) software to create juicing system models and sent the designs to a third party vacuum casting company to be made. Due to exponential growth in recent years, the juicing machine manufacturer wanted to bring this capability in-house so it could design, test and manufacture prototype parts quicker.

Zumex got in touch with Renishaw to supply its manufacturing facility in Spain with a vacuum casting machine suitable for producing parts for its entire range of juicers.

Zumex (Spain)



Zumex vacuum cast parts and feeder tube



Juice extraction part and silicon moulds

Challenge

The subcontracting of its vacuum casting work meant Zumex had to wait several weeks before parts arrived. If the technicians needed to make slight changes to designs, they would have to send the new CAD files to the designated vacuum casting company and wait several more weeks for the new prototypes to arrive. This proved to be a time-consuming exercise that was slowing down the company's design and production processes. Zumex's main motive for purchasing a vacuum casting machine was so it could produce a small number of prototypes quickly, in its manufacturing facility in Spain, without having to rely on external suppliers.

Zumex wanted a machine capable of producing the silicon moulds as well as the final prototype part made from resins. The machine had to vacuum cast unique designs that would be fit for field-testing in a food-safe environment.



Renishaw 5/01 PLC vacuum casting machine

Solution

"We approached Renishaw because of its reputation in the prototyping technologies sector," explained José Codina, Prototype Technician at Zumex. "We were familiar with the company's expertise in vacuum casting, so when we made our decision to purchase a machine, we went straight to Renishaw."

Zumex got in touch with Renishaw's local subsidiary in Spain, Renishaw Ibérica, which provided all the necessary information and support. After discussing what Zumex required from a vacuum casting system, Renishaw recommended its 5/01 PLC vacuum casting machine because of its ability to produce small builds consistently.

"The Renishaw 5/01 PLC vacuum casting machine has a smaller footprint than other Renishaw units, so it was perfect for Zumex because the company needed it to produce low volumes of parts," explained Iñigo Bereterbide, Additive Manufacturing Product Manager at Renishaw Ibérica. "When vacuum casting a small number of parts, it is important that the final product is perfect the first time. The PLC controls and automation features of the Renishaw 5/01 machine ensure consistent casting every time."

Renishaw also supplies Zumex with specialist consumable materials on an ongoing basis, which allows Zumex to test designs in true working conditions.

Perhaps the most important part of the service Renishaw supplied to Zumex was the specialist training. Renishaw's vacuum casting experts at its Additive Manufacturing Products Division (AMPD) in the United Kingdom delivered a tailored training programme for Zumex's prototyping technicians. This allowed the company to get to grips with its new vacuum casting machine before it began producing prototype parts on its own.



Zumex headquarters, Valencia, Spain

Results

“Two of the most important values at Zumex are innovation and development and so in this sense, we demand a lot from our R&D department,” explained Codina.

“The machines we use have to be of the highest standard, capable of producing sleek and modern designs efficiently. Approximately 90 per cent of the prototyping work we do is completely bespoke because we want to test our juicing machines to the limits. We certainly found a vacuum casting machine that can cope with these demands in the Renishaw 5/01.

“Since we purchased our vacuum casting machine, Zumex has significantly reduced production times for our prototype parts. In-house vacuum casting capabilities allow us to continue to be an innovator in our field, increasing our capacity to design and manufacture new products, without having to rely on external suppliers. In this way, it has also allowed us to reduce costs.

“The level of service and support we received from Renishaw was outstanding,” continued Codina. “The locality of Renishaw Ibérica means Zumex gets native speakers and short lead times. But by far the most impressive aspect to me was the training. When you work with Renishaw, you benefit from a global knowledge bank, as demonstrated by our two training sessions in the UK. These were informative and allowed us to get hands-on experience so we could achieve the most from our machine. Without the comprehensive training, we would have wasted time, materials and money getting to grips with vacuum casting.”

“The relationship between the two companies is such that Renishaw holds Zumex master parts and produces moulds to ship to the juicing machine company when its production cannot handle the demand,” explained Bereterbide. “This is a testament to our ability to understand our customers’ manufacturing challenges and our desire to provide solutions by whatever means possible.”

In the food and beverage sector, the design and development of new products is a continuous race for innovation. To remain at the forefront of the industry, Zumex invested in a vacuum casting machine that freed the company from third party time constraints and allowed it to test and tweak designs faster than ever before.



Zumex Speed Pro Self-Service Juicer

For more information visit, www.renishaw.com/zumex

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