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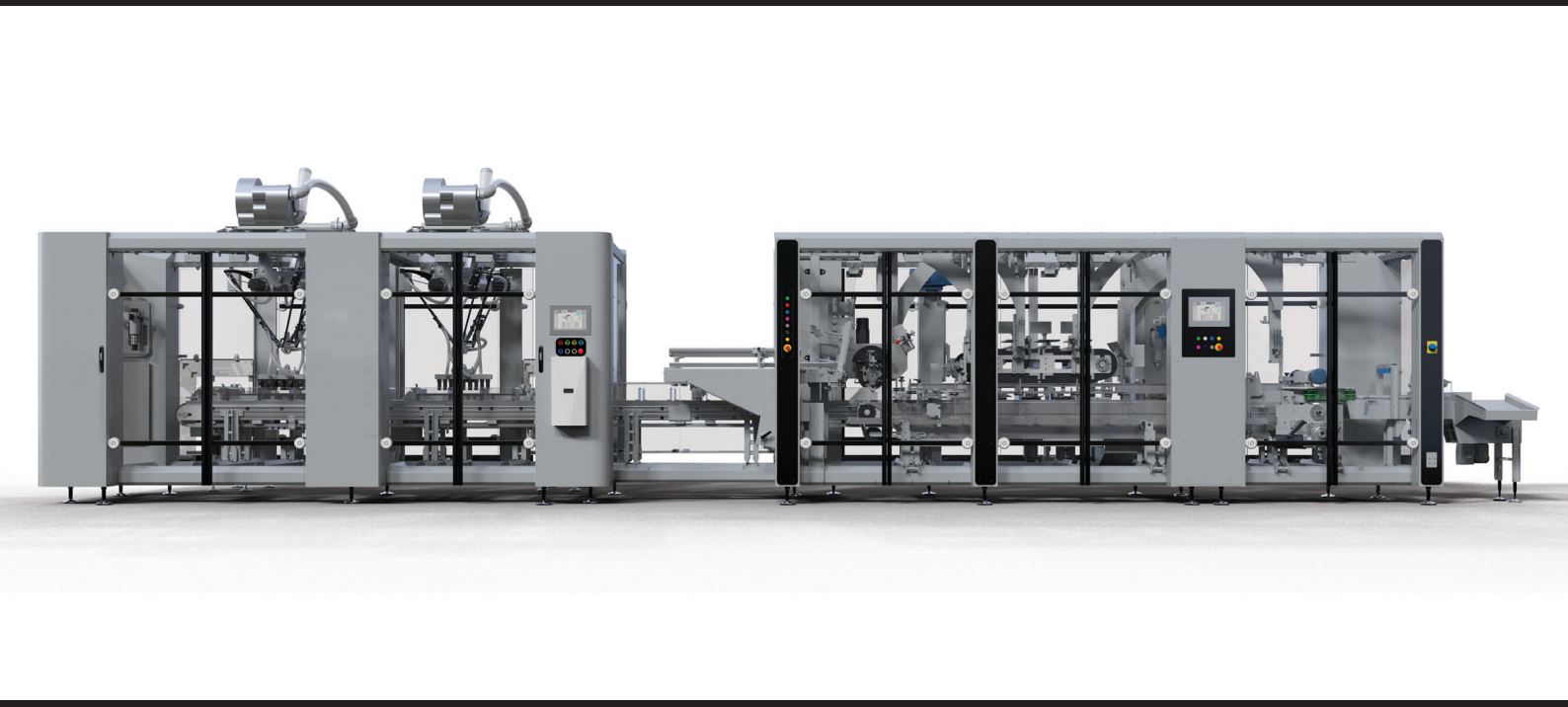
Innovation meets Experience

Flexibility & adaptability: Essential features in modern pet food packaging machines



The modern pet food market puts incredible pressure on machine suppliers. But with a contemporary automation infrastructure and an Industry 4.0 mindset, these demands for additional flexibility get easier and easier to address

Any company that supplies consumer markets, recognises that flexibility and adaptability play huge roles when it comes to specifying automation solutions.

Pet food is one example of a market that has witnessed an explosion in consumer choice; a choice which is compounded by demands from many of the vendors too. This wide array of variability places a lot of pressure on manufacturing and packaging operations, hence the need for wide-ranging flexibility and easy, low-downtime adaptability.

Automation advantages

With these needs in mind, Cama Group was recently approached by the pet food division of a large multinational confectionary and lifestyle brand. One of its pet food plants in the USA had recognised the advantages that an automated approach would deliver in relation to the secondary packaging of dental sticks for dogs.

According to Davide Di Lorenzo, Sales Engineer Manager, North America, at Cama Group: "The customer already had a couple of Cama lines, but nothing in relation to automated cartoning or secondary packaging. When I first went there, I was surprised to see so much manual packaging operations. Our solutions were chosen so the company could reduce its reliance an unstable transient manual workforce and instead employ workers in areas where they could add more value.

Adapt to the space available

"These are first two lines of six lines," Davide explains, "with the other four being planned in parallel positions. Our ability to cater and mould our designs to the available real-estate was another defining factor in the customer's choice, as was our enhanced ability to modify our machines – not necessarily in terms of their method of operation – but also their internal product flow, which in t

case required a bypass function customised for the customer needs and integrated in our system.

"Finally, our US subsidiary is able to deliver 100% support in the USA," Davide adds, "and this local expertise is combined with our global capabilities in the pet food sector, where we can call upon multiple highly successful reference projects from around the world."

The initial two-line solution comprises a CL Series cartoner equipped with a delta robot to collect the products in different variations, which in every case is highly tailored to a customer's unique requirements, while also delivering flexibility for future format variations. In parallel is an AV series RSC case erector and both lines feed into an IT series case loader.

High-speed efficiency

The CL series continuous motion cartoning machines have been developed for the packing of flow-wraps, pouches, bags, thermoformed trays, bars, cups and more. These machines can be equipped with an air-blast opening device to ensure the most efficient carton opening at high speed. They can also be combined with different loading apparatuses according to different product characteristics and production requirements. Carton closing is achieved by hot-melt or tuck-in. The AV Series offers medium- and high-speed RSC cases forming with a positive case drive and bottom case closing with self-adhesive tape or glue. Finally, the IT Series Delta robot loading units are equipped with single or double vertical racetracks to group and load products into boxes and cases. Cama's dynamic box phasing device ensures gentle package handling combined with fast product loading.

Optimised packaging

In operation the cartoning machines receive the pouches containing the dental sticks bottom side leading from a downstream third-party bagging machine. The products are then nested in two layers with one pouch being oriented at 180° to the other (to optimise packaging volume). These two-layer arrays are then sideloaded into opened cartons, before the carton is hot-melt sealed and rotated by 90° and fed into the case loading system, where they are grouped and finally packed into cases erected by the case former.

Once sealed, the completed cases are then passed to a palletiser.

"During the kick-off meeting, the customer also expressed a wish for pouches to be packaged individually in cases instead of in pairs," Davide explains. "This is where the need for a bypass solution arose. In operation, the filled pouches can by sent down a separate conveyor, within the framework of the cartoner and then loaded individually into the cases. Other vendors were involved in the tender, but their large external bypass solutions were simply too big for the limited space on offer. We, however, were able to integrate the bypass functionality within the frame of our machine."

One eye on future demands

Davide concludes: "All three machines, which have been designed with future adaptability in mind, are part of Cama's Breakthrough Generation (BTG), which is setting the standard in secondary packaging. They comprise contemporary Industry 4.0 automation solutions, including advanced rotary and linear servo technology, tightly coupled to in-house-developed robotics, to deliver the all-important speed, flexibility and adaptability required by modern packaging operations. All of this advanced technology is housed within a modular, scalable framework that offer easy entry and access, coupled to a hygienic machine design."