Ultimate flexibility from industry proven top-loading secondary packaging machines

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Innovation meets Experience

Fully digital control and packaging-industry-specific robotic technology define best practice in secondary packaging

Following enhancements to their existing highly digital infrastructure – including improvements to class-leading digital twin and virtualisation solutions – Cama Group's top-loading secondary packaging technology is now even more capable of addressing the high-flexibility packaging requirements of a wider selection of industries.

In operation, the robot-equipped top-loading packaging lines can accept a wide array of in-feed formats, while delivering multiple out-feed options, either in parallel, concurrently or batch-specific. The modular design of the BTG solutions means that additional modules can be added easily, to increase the robot count, to boost throughput. This flexibility is compounded by changeover routines that often taken a fraction of the time compared to industry norms. "By using HMI re-programmable servo systems, digital twins/virtualisation and RFID technology, we have significantly reduced changeovers in terms of both time and effort. Users get it right first time, every time in no time at all!" Rocca explains.

Vision systems also play a critical role in the efficiency and flexibility of the packaging cycle. Cameras and vision solutions can be deployed in numerous roles including robot guidance, in-feed and out-feed quality control and traceability. The level of deployment and integration is balanced in relation to customer demands and the level of sophistication, capability and data capture required.

According to Massimo Monguzzi, R&D Manager, at Cama: "Our in-house robotic solution has been fine tuned over the years to work in perfect harmony with vision systems; and this tight integration is illustrated by the pick speeds and accuracies we can achieve. In addition to robotic guidance, quality control is another major beneficiary of the contemporary vision solutions we deploy.

"Product appearance is everything," he exclaims, "either in its naked state or when presented in shelf-ready packaging, which is why we offer solutions on both the infeed and outfeed of our machines. On the infeed we can identify non-conforming products, while on the outfeed we can spot package damage and incomplete closures and – in applications where weighing solutions are not feasible – incorrect product counts too."

Alessandro Rocca explains why quality should never be considered as a fixed off-the-shelf concept: "Quality control is a per-application ethos that we develop with the customer. It's not a fixed concept, it has to be designed and fine-tuned to the product and the application. The definition on each machine and the level to which it is measured is determined by what the customer wants. We always develop our on-machine QC solutions in co-operation with our customers. They know their products better than we do; it is essential that we really listen and take their needs on board. With one customer we spent in excess of six weeks just discussing and developing the QC system.... It really was that important to them!"

Tightly integrated vision systems are also an essential facet of any traceability system, such as those deployed in the pharmaceutical sector.

"Traceability practices demand the reading of codes, text strings and other OCR routines," Monguzzi explains. "In addition to accurately identifying and reading the individual product codes you need a means to apply code to secondary packaging either using a printer + label or a print direct to package. Then, once applied, the efficacy of the print needs to be confirmed (legibility and orientation) before passing the data to robust storage and dissemination systems capable of liaising with MIS and enterprise systems. Unlike other machine builders that rely heavily on third parties, this is all managed by us internally. We have partners, but we also have the knowledge and competence in house to design, manage and install these systems, giving our customers a single point of contact.

"We can offer this technology across all categories and markets," explains Rocca. "The technology is not tied to a specific sector. One area that is really evolving in term of vision deployment is naked products i.e., unwrapped individual confectionary, frozen or baked goods. These must be examined on the in-feed to ensure accurate pass/fail criteria are met, so that the customer is not disappointed with the product when they open our carefully applied secondary packaging."
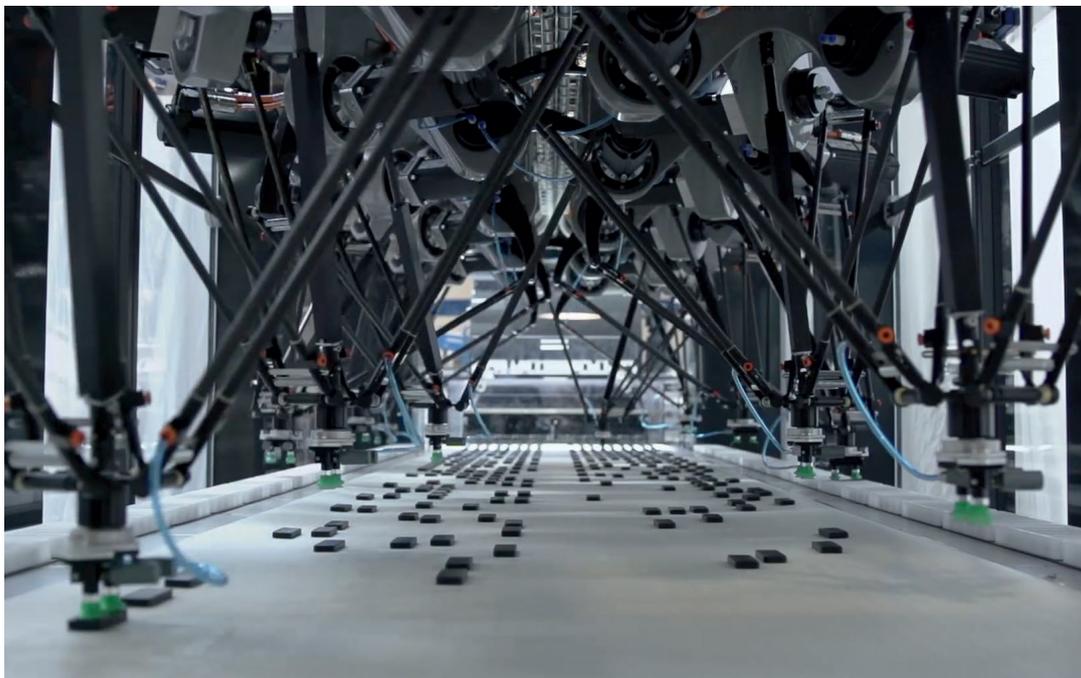
"We can also scale vision system solutions, from simple cameras up to complex multi-faceted PC-based approach," Monguzzi adds. "We have used 3D scanner systems in the past and the further deployment of this technology is a major element of our future roadmap and will add a new dimension to our customer's QC capabilities, especially for uneven, non-uniform naked products."

"Our experience of vision technology is very wide in terms of sectors and it is a vital part of our contemporary-technology offering," Rocca adds, "which also includes easy & toolless changeovers, RFID coded components and immersive digital capabilities all underpinned by an Industry 4.0 framework. This digital approach also fosters far greater modularity. You can have one, two, three or even 20 robots... it all depends on the speed you need based on your infeeds or the throughput you require for your outfeeds. 100 to 2,000 products per minute... it really is up to you. And you don't have to decide now! Our modular approach means our machines can be upgraded, extended and enhanced much later in their life to match your market's demands."

From initial design, through simulation and testing and onto optimum in-field operation, Cama Group's top-loading machines and all of their associated technology will deliver better, faster, more focussed packaging solutions that enable end users to increase throughput, boost quality, shorten times to market, slash downtime and quickly and easily undertake format changes.

End users should never settle for second best or opt for solutions that just 'nearly do' what they want! Cama Group has created packaging solutions that can precisely match a customer's brief and deliver all the requested features, using technology- and knowhow-transfer from the other markets Cama so successfully serves.