



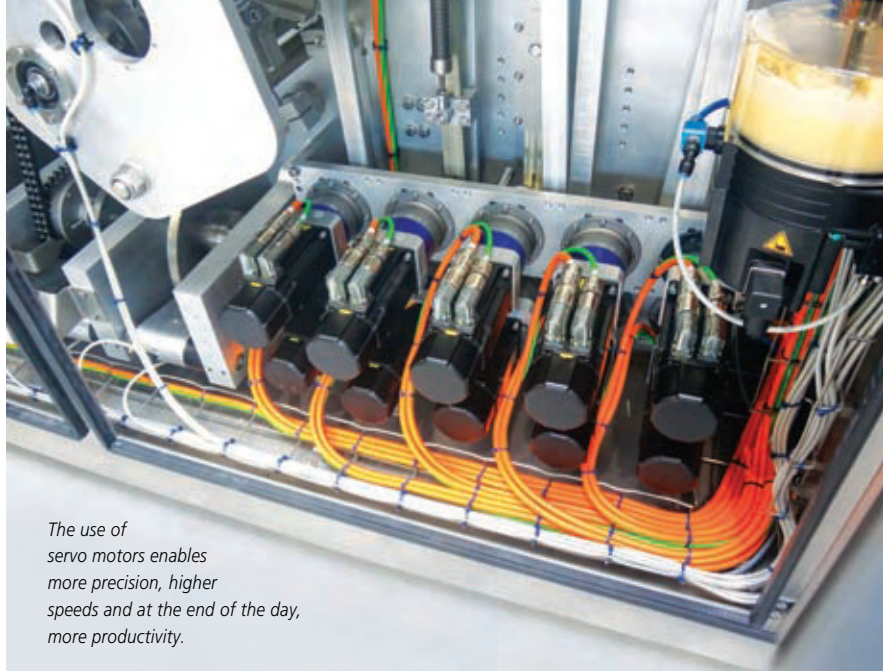
Why a Belgian machine manufacturer relies on Austrian automation technology for X-fold packaging of cookies

Cookies from the Roll

The Belgian company TG Packaging designs and builds fully automated packaging machines tailored to the needs of customers in the food industry. Like waffles, coffee or even animal feed, cookies can be stacked, loaded in trays and packaged - either in portions or pieces. The company, which claims to be the market leader in handling and packaging so-called cookie Fourré - double-decker cookies with a chocolate cream filling in between - developed a new high-end X-fold machine for fold packaging of the popular treat with an "Easy-Open-System" to series production. This new machine uses automation technology from SIGMATEK, whose Dutch partner Sigmacontrol supported the project with their expertise. The compact, robust hardware components from the Salzburg manufacturer score with their space-saving design, as well as the interdisciplinary, object-oriented software LASAL for reduced programming time. An efficient all-in-one solution was created, which ensures consistency from the control to the drives and from the safety technology to the visualization. Von Astin de Zeeuw und Mag. Ingrid Traintinger

TG Packaging, based in Verrebroek, is a fast-growing company that started with sale, renting and servicing of retrofitted »Tevopharm-X-Fold« and tubular bag machines (Flow Wrappers) under the name TG Technics. During the years, they made dealer contracts with the Italian company Record Packaging and GHD Hartman from Germany. With this added partner know-how, the company grew quickly. By 2016, their sales had reached more the 10 million Euros, and they had to increase capacity. Today, TG Packaging's focus is on designing complete production lines. "We rely on successfully proven components, combine them with well-designed machine and further improve it with smart features. The difference then is evident in the quality" explains Filip Lamiroy, Sales Director at TG Packaging, the principle by which TG Packaging own designs.

There is always a need for more automation in the construction of packaging machines – efficiency, improved communication and maximized production are deciding factors. And the new »CM90 X-Fold« provides exactly that. "For our latest X-Fold system, we drew on all our experience to



The use of servo motors enables more precision, higher speeds and at the end of the day, more productivity.



Filip Lamiroy (l.), Sales Manager at TG Packaging in Belgium, confirms the high quality, robustness and availability of the red-white-red automation technology to Sven Verlinden from the Dutch Sigmatek partner, Sigmacontrol.

modules: the use of two redundant, fully automatic foil rollers in the »CM90« ensure a smooth transfer of the foil. According to Filip Lamiroy, this system has already been used for tubular bag machines (flow packer) for many years but until now, not for X-Fold machines "Why should not this principle work for X-Folds as well?", asks Filip Lamiroy and explains how they implemented it at TG Packaging: "With a flow packer, the foil runs through continuously and is then cut off. With X-folding, one section of foil is used at a time and the product is pushed through. For a servo controlled arm, the intermittent movement is converted to a continuous motion. We could therefore integrate the splicer of the flow packer into the new machine – a huge advantage." There are also additional smart features, which were implemented in this machine

– such as an automatic lubrication system and sensors that monitor every step of the process. For quality assurance, an inspection and a disposal system are integrated into the feed, as well as output. "Among other things, rejects can occur when the foil or tear strip is positioned incorrectly, or the adhesive does not bond properly", says Filip Lamiroy, pointing out a few examples. "The scrapped or the discarded products can now also be traced via the software. This makes it easier to find out the causes for a possibly efficiency loss."

With a flow packer, the foil runs through continuously and is then cut off. With X-folding, you take a piece of foil and the product is pushed through.

create a machine of the highest quality and highest level of automation", summarizes Filip Lamiroy the company's lofty goals.

Smart Construction for more Efficiency

When you compare the »CM 90« with its predecessor, the »CM 60«, the differences can already be seen in the basic construction. In the »CM90«, all machine components are mounted on an aluminum plate approximately 10 cm thick. Backlash and torque can therefore be reduced to a minimum and the machine can be expanded with the required modules as needed. Speaking of



Higher Productivity via Servo Drives

Increasing production from 60 to 90 packaged units per minute is, especially for a machine concept that had already advanced far for this type of packaging, is impressive. "The trick is in how the machine handles the foil. For this, we use servo-controlled tongs that hold the foil and pull it tight. The position is thereby precisely detected and the foil move faster than when a chain or gear drive is used" reveals Filip Lamiroy a significant

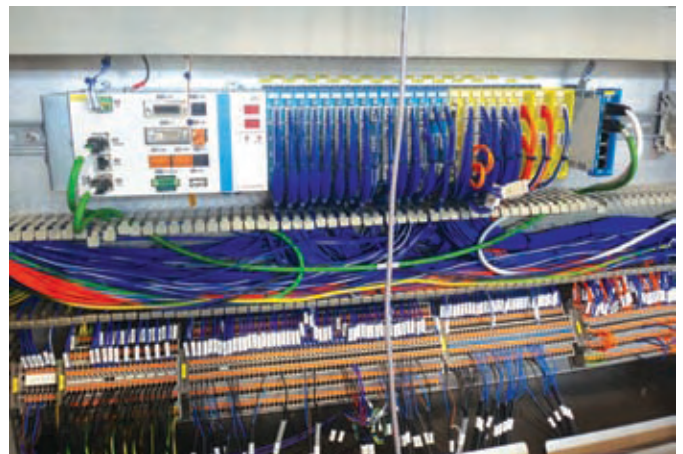


For precise control of the servo motors, the modular multi-axis servo system »Dias-Drive MDD 100« is used.

detail. In terms of flow rate, the process for sealing the main seam is a bottleneck for productivity. The »CM90« therefore has a sealing station with a carousel in which the hot seal is performed in two steps along the roll-formed packaging, before the ends of the cookie roll go into the so-called folding cabinet for the X-Fold. "The product runs through a total of six sealing stations. This results in more speed, no interruptions via foil changeovers and super-fast format changes with switching products", summarizes Filip Lamiroy the advantages. "And all that thanks to intelligent, servo motor controlled processes that in the end, provide higher productivity and fewer rejects."

Complex Properties Compactly Automated

TG Packaging has standardized their entire line with an integrated SIGMATEK automation solution: Control, I/Os, Safety, Motion, Drives and HMI's – everything from one source. "With Sigmatek, hardware and software are independent of one another. So in the event repairs are needed, they can be easily replaced – even after many years", Filip Lamiroy knows from experience. And that wouldn't be possible with many



A look in the control cabinet of the new folding machine: »S-Dias« control components and lots of I/O-modules – Safety included.

other manufacturers, with whom you would be forced to change systems if worst came to worst. Furthermore, the fully integrated control system provides many advantages. All door and emergency stop switches, for example, are separate and directly connected to the »S-Dias« Safety module. The entire system is programmed with the object-oriented engineering package LASAL, with the expert support from Sigmacontrol in Barendrecht. The engineering toolset saves a lot of programming and configuration time via the simple reuse of objects and, extensive libraries with pre-defined functions and other clever features.

Thinking Ahead Creates Innovative Solutions

The new construction of the faster X-Fold machine provides higher overall performance, which is noticeable in a variety of ways. For example, when changing to different product

types – such as from square to rectangular or oval – adjusting the machine accordingly is now more comfortable. Diameter and length parameters can be more quickly and easily defined than previous machines. Customer-specific modules can also be added more simply. The patented "Easy-Open" system, for example, is fully integrated into the packaging of "single and double-decker chocolate chip cookies" and ensures easy opening and re-closing. Both foil and carton rolls are first stamped for this purpose and an additional roll of foil labels runs with it. Such auxiliary

modules are servo controlled and can be programmed via the software. "Our x-Fold module is located at the end of a long production line. In this respect, we are always somewhat dependent on what happens in the upstream processing stations and feed systems", Filip Lamiroy adds in conclusion. "For this reason, we also specialized in feeding systems so that we could better increase the efficiency of the entire line. (TR)

About the Authors: Astin de Zeeuw is head of marketing at Sigmacontrol in the Netherlands and Mag. Ingrid Traintinger is head of marketing communications at Sigmatek in Lamprechtshausen.

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