

Master of safety: The new cartoner from Molins Langen

Schmersal supplies safety technology for high-performance 'Maestro' machine

Première at interpack 2017: The new 'Maestro' cartoning machine from Molins Langen was presented to the public for the first time in May at the packaging show in Dusseldorf, Germany. The innovative cartoner sets new standards in terms of efficiency, accessibility and hygiene-compliant design. Another benefit is that the high-performance machine is fitted with safety sensors and interlocks from Schmersal as standard.

The new cartoning machine from Molins Langen stands out not only because of its elegant, transparent design, but also because of its almost poetic name: 'Maestro'. When naming the machine, the Dutch machine constructors took inspiration from the rising winds of the same name in the Adriatic Sea - it is also a respectful form of address in Italian. However, the development of the machine was based on sober considerations and rational calculations: the focus was on customer requirements for high performance and reliability, product quality, accessibility and an improved hygiene-compliant design.

The core business of machine constructor Molins Langen is cardboard packaging for the food industry (see **Langen Group** box). At its site in Wijchen near Nimwegen (Netherlands), the company employs around 140 people, with another 100 at another production site in Canada. They develop and produce systems for the feeding and assembly of primary packaging, fully automated cartoning machines and top-loader cartoning machines and palletising systems.

Fully automated format change for flexibility

The new Maestro machine developed in Wijchen allows larger cartons to be processed for the muesli market, for example. The continuous cartoner also packs other primary packaging formats, such as stick packs for milk powder & Coffeemate products, tube bags & boxes for pizza or biscuits. The Maestro has a fully automated format changer and is therefore flexible to use. This means the high-performance machine can achieve speeds of 100 to 500 cartons per minute.

Transparent, hygiene-compliant design

What makes the machine special is the completely hygiene-compliant design. The frame of the machine is made of stainless steel and all cables are laid in open cable ducts which are easy to clean.

Smooth surfaces and hollow bodies are avoided where possible to ensure there is no build-up of nests of dirt. On both sides, the machine has five virtually full-height transparent doors, so the process can be viewed from all sides at all times and the machine is very easy to access in the event of problems or format changes which need to be carried out manually. These safety doors are secured with AZM300 RFID solenoid interlocks from Schmersal.

The AZM300 has a new patented mechanism with a rotatable cross-shaped locking mechanism combined with IP69K degree of protection, making it easy to clean and preventing the depositing or penetration of contamination. The built-in electronics use a safety technology RFID sensor system to ensure both the positioning of the locking bolt and the position of the locking door itself. The AZM300 makes sure that the safety doors can only be opened when there are no hazardous situations, eg. run-on movements which could compromise the safety of the operating personnel.

Langen Group becomes Molins Langen

Molins Langen in Wijchen near Nimwegen in Holland is better known under the name Langen Group and has over 60 years of experience in the development and production of machines for product handling and final packaging.

Since 1996, the company has been part of the British Molins PLC group, which decided in spring 2017 to integrate its subsidiaries more and give them all the shared Molins brand name.

"This makes it clearer to our customers that the Molins Group offers a complete product range in line with our motto: Creating, Packing, Testing, excellent Services. We can now offer close customer service all over the world. Molins Technologies focuses on mechanical engineering for primary packaging, Molins Langen is strong on secondary packaging and Molins Cerulian products testing and measurement instruments for quality assurance", explains Theo Rovers, Innovation Manager at Molins Langen.

Together, the Molins Group companies supply the leading brand manufacturers in the international food and beverage industry, the healthcare sector and the pharmaceuticals industry, as well as the manufacturers of nicotine products.



The AZM300 solenoid interlock has an innovative mechanism with a rotatable cross-shaped locking mechanism; the locking force can simply be increased by rotating the cross

"During the development of the cartoner, a free view of the complete process through the large, transparent safety doors was an important criterion. If all the central machine elements are clearly visible and easily accessible for maintenance, this increases the efficiency of the machine," explains Theo Rovers, Innovation Manager at Molins Langen. "The AZM300 units on these safety doors allow us to achieve a high level of safety. Because of the high speeds, cartoning machines cannot always stop in the 0.2 seconds stipulated by the Machinery Directive in the event of a hazardous situation. This means a solenoid interlock is used. Unlike a safety switch, it prevents the safety door being opened while the process is active."

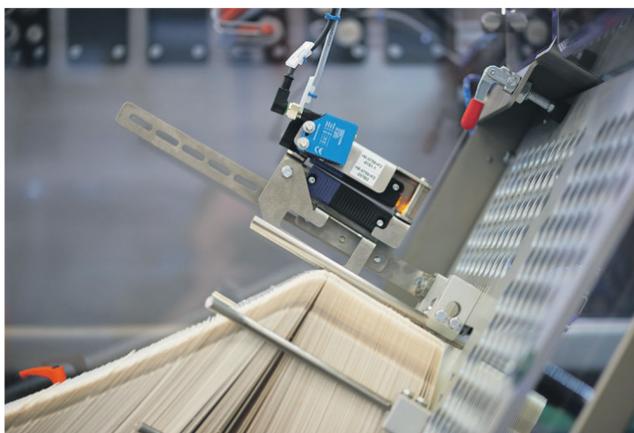
The new 'Maestro' cartoning machine from Molins Langen was presented to the public for the first time at interpack 2017



This means the solenoid interlock has two functions: it protects the operators and prevents the process being interrupted. The result is not only increased safety but also increased efficiency and plant availability. "Our cartoners come with the AZM300 solenoid interlock as standard," reports Theo Rovers.

Special safety solution for the infeed unit

Another advantage of the AZM 300 is that it is equipped with tamper protection with high coding levels, and optionally with universal, multiply teachable or individual coding. "This is made possible thanks to the integration of the RFID technology into the safety sensor



The RSS 36 RFID safety sensor is on the machine infeed unit



Appreciate high efficiency and safety (from the left): Yusuf Tekeli, Account Manager Schmersal, Theo Rovers, Innovation Manager Molins Langen, Gijsbert Heenck, Functional Safety Engineer at Schmersal Netherlands

systems so that a coding level of high in accordance with ISO 14119 can be achieved for the individually coded models," explains Gijsbert Heenck, Functional Safety Engineer at Schmersal Netherlands.

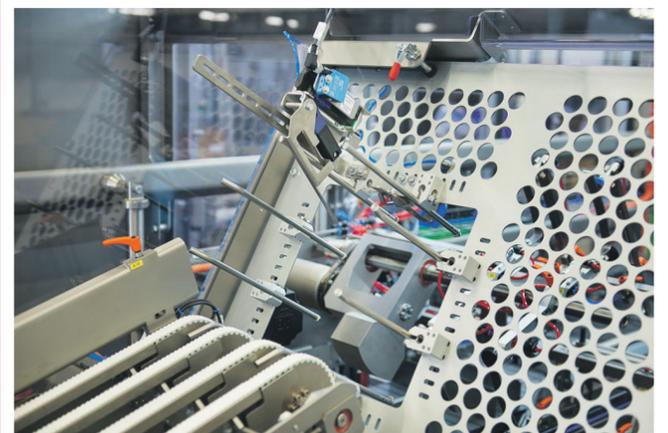
As well as the ten AZM300 interlocks for the safety doors, the Maestro is also made safe with an RSS 36 safety sensor from Schmersal. This RFID safety sensor is on the machine infeed unit. If the material infeed is missing, the opening gets larger, thus increasing the risk of the machine operator accidentally putting their hand in. The RSS36 then triggers a machine stop and thus protects the machine operator from injury. "This is a problem in many machine infeed units - while the RSS36 provides a very efficient solution in terms of safety technology," explains Gijsbert Heenck. At the same time, the RSS36 has IP 69K degree of protection and is ECOLAB-certified.

Machines and safety services for the global market

Like all Molins Langen products, the cartoning machine is sold all over the world. "This is another benefit of a safety solution from Schmersal, as Schmersal safety products are recognised and accepted by our international customers," explains

Theo Rovers. As a leading international system and solution provider for machine safety, Schmersal claims to offer its products with all the necessary tests and certifications necessary for global trade. Added to this, the Wuppertal-based company's tec.nicum division has a global network of qualified safety engineers who can provide support services around the globe where required.

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If the material infeed fails, the RSS 36 triggers a machine stop