

Technical Article, published in:
automation 05.2015

High-tech meets high-tech Interview with Siegfried Rüttger

SIEGFRIED RÜTTGER Packaging / Pharmaceuticals / Food Industry Manager at Schmersal, provides insights into the market for packaging machinery and systems, describes current issues and trends and explains what safety technical solutions are best suited to the packaging industry.

Mr Rüttger, what makes the packaging industry so interesting for providers of safety solutions?

It brings together a number of different aspects: Nearly all industries use packaging machines and systems, because virtually everything that is produced needs to be packaged. Starting with food and drink, medicine and pharmaceutical products through to non-food, including all sorts of consumables, entertainment electronics, household and lifestyle products, cosmetics, etc. Many companies in the industry are very creative when it comes to designing packaging for attractive product presentation. And it is estimated that around 100,000 new products are launched every year in Europe alone, and their packaging machines and systems, of course, require safety solutions. So the demand is huge. In general, safety technology should reliably protect the operator of packaging machinery and systems, secure the relevant processes and not compromise or interrupt the production workflows. At the same time, we need to consider the particular requirements of the industry when developing safety technology solutions.

What specific requirements do you mean?

Packaging machinery and systems are designed on a very product-specific basis and often form integral parts of complete processing and production systems. They mainly work at very high speeds and are becoming increasingly complex. At the same time, the packaging machines and systems used in the medical and pharmaceuticals industry and the food and beverages sector need to comply not

only with the Machinery Directive but also with other specific safety standards and regulations. Three points in particular are worth mentioning: Firstly, the equipment must demonstrate better seals and the materials must be resistant to the conventional cleaning chemicals. Hygienic Design is another key requirement in the construction of packaging machines for food and pharmaceuticals products. The idea is to completely rule out that the foods to be packaged could be contaminated or that the plant operator could come into contact with the medicines to be packaged or bottled. Temperature-resistance is another important requirement, as the processing and packaging of foodstuffs, for example, takes place across a wide temperature range. Explosion protection is just as important: The aim is to guarantee the top possible level of security when packaging delicate, powdered materials. Of course, this all has an impact on the safety solutions and the way they are designed.

In what areas are the requirements in terms of the safety of packaging machines and systems and packaging processes the most demanding?

The safety requirements are very different for all packaging processes, with the top priority always on protecting employees. In the packaging industry, a distinction is made between primary, secondary and tertiary packaging. With respect to hygiene, the requirements of primary packaging in the food, beverages and pharmaceuticals industry are no doubt at their strictest because the switch-gear can come into more or less direct contact with foodstuffs, but contamination needs to be



Siegfried Rüttger: The graduate mechanical engineer has been the Pharmaceuticals/Food/ Packaging Industry Manager at the Schmersal Group since 2012. He began his professional career at Walter Maschinenbau GmbH before moving to Willett GmbH. He was then a sales engineer at Pago Etikettiersysteme GmbH for a number of years. Siegfried Rüttger is married with three children and enjoys walking, cycling, travel, good food and DIY in his spare time.

completely ruled out. Different ambient conditions are also a challenge. Humidity, strong temperature fluctuations and the regular use of detergents and disinfectants are critical aspects which need to be considered when designing safety technology solutions.

What are the facts and figures for the packaging machinery and systems market?

And what is the competition like when it comes to safety technology?

In 2013, the worldwide production volume of food and packaging machines was around 30.3 billion euros. German manufacturers had a stake of around six billion euros with an export ratio of 87 percent. This made them the global market leader. The strongest competition with similar levels of turnover comes from Italy. Chinese manufacturers are catching up quickly, although they primarily serve the Asian markets. But it is likely to be only a question of time before they become more active in the non-Asian markets. Europe and Asia are the most important individual markets for packaging machines. America is some way behind, and is still dominated by German manufacturers. There are plenty of competitors when it comes to safety technology for packaging machines and systems. However, if we compare the product and service portfolios of the individual companies to one another, there is no company in the same position as Schmersal, even on an international scale: we have the world's largest range of safety components, a high-performance global sales network and, at the same time, our own service division offering a wide range of services. And we are doing lots to build on this position.

What is Schmersal's market share in the packaging industry?

I don't want to quote exact figures. We mainly concentrate on packaging machinery and plant engineering for the food and beverages industry, the cosmetics and non-food industry, pharmaceuticals, medical technology and biomedicine. And we have above-average levels of representation in all these sectors. Many established market leaders in these industries are among our customers and we in close cooperation with a range of small and medium-sized enterprises.

Given this range of customers, you could get the impression that the safety solutions from your company are by no means off the shelf.

Yes and no. Yes, because our safety solutions are based on the products to be processed and packaged and the relevant processes. So we very often develop specialist solutions which are very precisely tailored to the individual requirements of our customers and the peculiarities of the industry. No, because we also supply large numbers of standard products for many applications.

An optimum safety solution also needs to be considered from economic perspectives.

What are the dominating topics issues and trends in the packaging machine industry?

I can name a few: The food industry, for example, is faced with an increasingly single and ageing population who have evidently lost the time and desire to cook. This means a need to package not only increasing numbers of convenience products, but also means an increasing in overall packaging volumes and producing in increasing unit numbers. At the same time, there is increasing demand from the trade and consumers for a wide range of products and packaging as well as new products and taste experiences. This requires frequent format changes with minimum switchover times. This means that safety solutions need to be designed such that they do not impede productivity and system availability. In the pharmaceuticals industry, they are already able to package and deliver patient-specific, personalised medications. As a result, they need high levels of flexibilisation - which means being able to deliver production batches with unit numbers of as little as one. Series production is also an important issue in the pharmaceuticals industry. In order to guarantee consistent traceability and avoid a "grey medicines market", it is absolutely crucial that products cannot be mixed up at the production stage. This involves using safety doors which prevent employee intervention in the production process. In these cases, we need to protect the production processes against unauthorised access. And the single unit numbers mentioned above lead to Industry 4.0 strategies, which are currently a hot topic of conversation.

What is ahead for providers of safety technology like Schmersal?

Increasingly, packaging machine manufacturers want to obtain completed safety modules for their machines as complete system solutions from a single source, including comprehensive consultancy and services. As a system provider, we are involved at a very early stage in the development and upgrading of packaging machines and can develop appropriate safety strategies and solutions for these. We also want to play an active role in shaping the trends and issues in the industry. So, for example, we work in various standardisation panels, committees and specialist associations in order to define safety standard

and develop industry-proof, practicable safety solutions in conjunction with packaging machinery manufacturers. This is why Schmersal has set up its own industry management system for the food industry. Our product range for packaging machinery incorporates various command and alarm devices in different degrees of protection up to IP19K, position switches and sensors for position recording, energy-efficient safety switchgear for safety door monitoring, safety light barriers and grids, safety relays and Protect Select and Protect PSC safety controllers. New and further developments are also being added to this product range. And it can already be said that the packaging industry and safety technology is where high-tech meets high-tech.

What do you find most fascinating about the packaging industry?

I think that the food industry and packaging machine manufacturers can make a contribution to solving, or at least curbing, a major social and humanitarian problem: On the one hand, there are more than 870 million people starving in the world. On the other hand, every year over 1.3 billion tons of food goes off or is thrown away or lost, partly because it is not properly stored or packaged in time. This needs to be changed, and fast. As a result, more high-quality packaging is required around the world in the long term to protect food from spoiling and preserve its shelf life. And this means the market is set to grow even more. Of course, this growth must not be to the detriment of the environment, the used packaging needs to be reused, efficient recycling systems are the next real challenge and at the same time a real opportunity for further growth.

Images:

K.A. Schmersal GmbH & Co. KG, Wuppertal

Author:

Siegfried Rüttger, Packaging /
Pharmaceuticals / Food Industry Manager at
K.A. Schmersal GmbH & Co. KG, Wuppertal

K. A. Schmersal GmbH & Co. KG

Mödinghofe 30
42279 Wuppertal
Telefon: +49 202 6474-0
info@schmersal.com
www.schmersal.com

Visit Schmersal at the Fachpack: Hall 4A, Stand 505