The packaging artist

Encapsulated Slip Rings in the Packaging Industry

We all do it, mostly even several times a day. We tear packages to open them. Sometimes ravenously, sometimes in a totally automatic manner. From packaged cheese or sealed sausage up to film-wrapped chocolate bars. They belong to daily life and ensure food quality. New encapsulated slip rings mounted in packaging machines ensure safe food.

Pictures:

Food packaging belongs to the things of daily life which we think all the less about as it is better. Often it reaches our awareness only if it does not meet our expectations. When it is hard to open or damaged, or when the packaging refuses to match its content, and when we therefore do not trust the product. We easily forget that the packaging is an important element in our daily food, and that it ensures the preservation of food quality and in the same time shows many other advantages.

Packaging fulfils many tasks

Food packaging prevents the food from contamination and from pests. But packaging does much more: it preserves the shape, the colour and the taste, and it protects our environment by ensuring longer food preservation and preventing the waste of food. In addition, it contributes to the reduction of the additives used with the food, such as for example for its preservation.

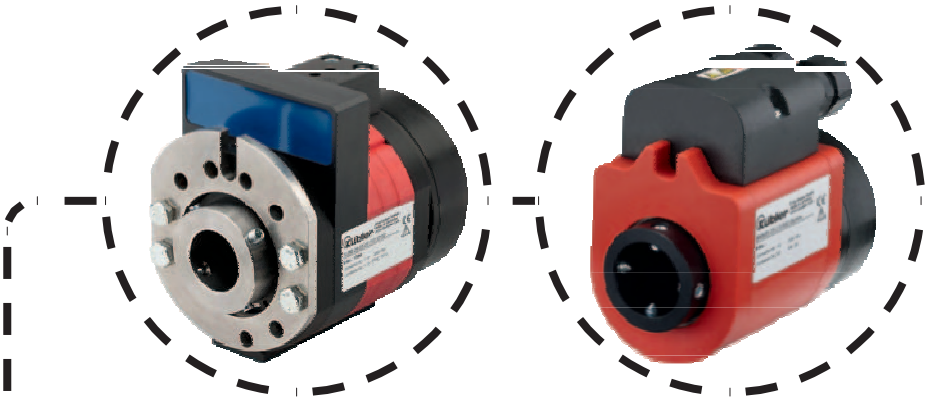
So, packaging brings many advantages; always provided it is of high quality, it meets the requirements of the product and the extremely stringent standards and hygiene provisions pursuant to the German Regulation on the Hygiene of Foodstuffs, in short LMHV. The present regulation, binding since2007, has significantly stricter requirements. All critical operations on the way to the consumer must be continuously monitored, documented and ensured and guaranteed by means of appropriate procedures. These requirements do not only apply to the finished product, but to the whole manufacturing process, including the packaging machines, their components and all of the materials used during production. The whole production chain is concerned.

The tasks of a slip ring

Kübler expanded its Transmission Technology products portfolio decisively, especially for the use in this highly regulated sector. The Kübler slip rings used in packaging machines operating in the food processing area resist reliably the conditions of the working environment and ensure smooth functioning and long service life. For the new Kübler slip rings SR060E and SRI085, this is true both for the material of the drive unit and for all interface components such as connections and seals. In packaging devices, slip rings are in charge of the rotary transmission of energy, signals and data between stationary and rotating platforms. The SR060E slip ring is designed for up to 3 load and 2 signal transmissions and shows its strength in many different applications: from heating and monitoring of the sealing rollers in flowpack machines, in stretch film wrapping machines or balancing machines, and up to textile machines.

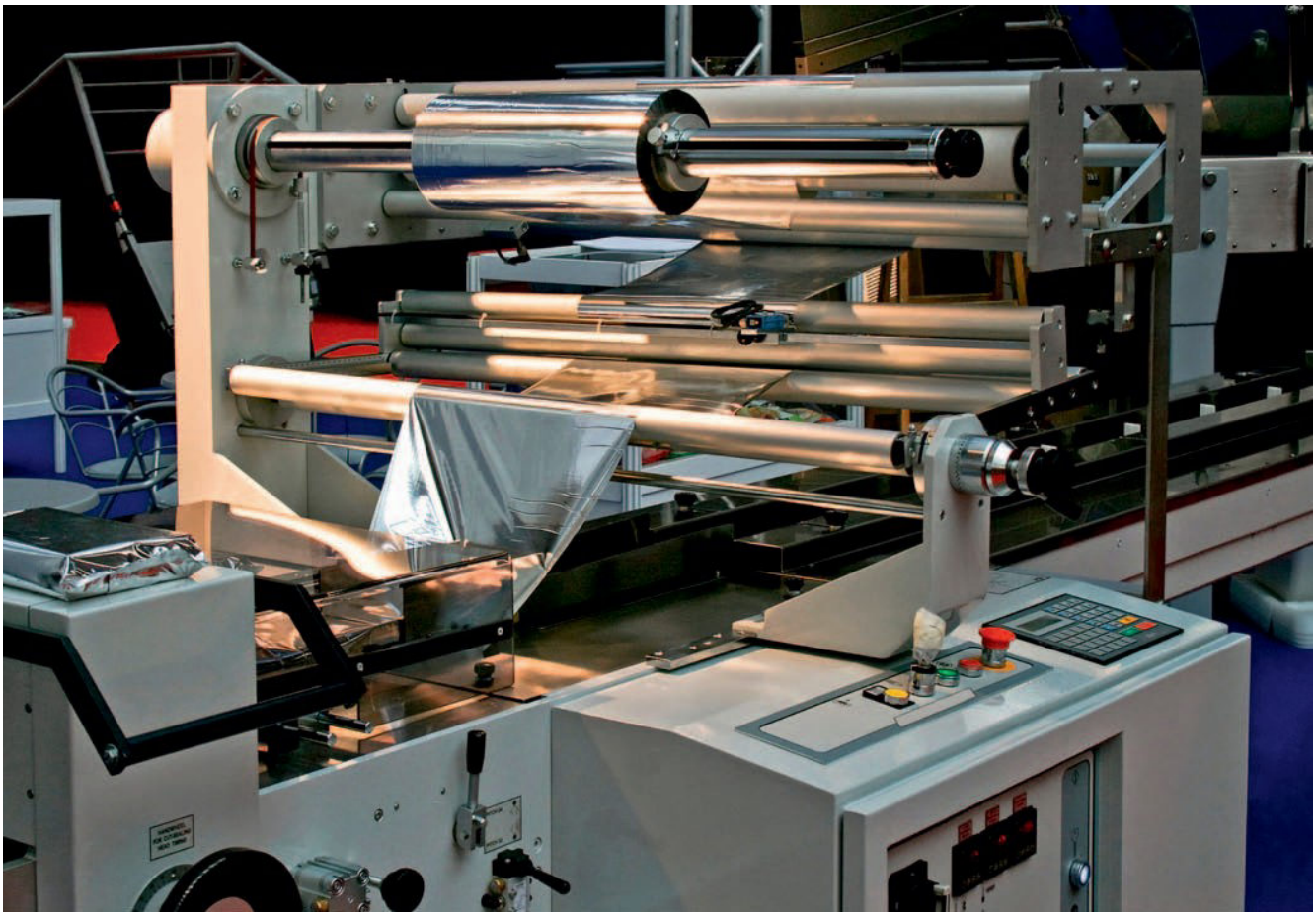
For an efficient cleaning

Microbiologically perfect products are a vital aspect for every food manufacturer. The Kübler slip rings have all essential features to meet the hygiene and cleaning safety requirements in aggressive environments. Thanks to their smooth and straight surfaces – without any undercut – they are particularly



Kübler slip rings for rotary transmission

The slip rings SRI085 (left) and SR060E transmit energy, signals and data between stationary and rotating platforms in packaging equipment. The SR060E slip ring is designed for up to 3 load and 2 signal transmissions.



Pictures:

Today packaging machines are logistically optimised and in permanent service. They experiment constant increases in production performance and products speed on the conveyors. Therefore, high rotary speeds of 500 up to 800 RPM are not uncommon.

easy to maintain and simple to clean. Their oval round housing is fully encapsulated, safely protecting the machine against abrasion dust, since the protection of the processed food requires that no machine element shall produce any substance that might be harmful to health or have a negative influence on the taste or smell during the production process. For easy and safe cleaning, the materials of the machine elements must resist aggressive detergents and disinfectants, and any reaction of materials must be excluded. They must be corrosion-resistant, mechanically robust and their surface must be completely insensitive. Both the SR060E and the SRI085 are fully encapsulated and therefore not only safely protected against contact, but also, thanks to their two-chamber system, perfectly insulated and particularly easy to clean.

Low-maintenance up to maintenance-free

A trend in mechanical engineering is the increasing maintenance optimisation with the goal of building plants requiring particularly little maintenance or even no maintenance at all. The contact material used in the new slip ring strongly supports this trend: The slip ring equipped with silver, bronze and precious metal contacts (contact oil-free) requires maintenance only all 100 million revolutions. This maintenance is then minimal, consisting simply in vacuum-cleaning the dust. Even in the case of continuous operation, which is generally the case today with this kind of machines, this value is practically negligible. Regarding maintenance optimisation, the new SRI085 slip ring relies on contactless signal transmission to the moving machines, it operates totally without mechanical wear.

For the benefit of the customer

Today packaging machines, in addition to logistical optimisation and continuous operation, also experiment constant increases in production performance and in products speed on the conveyors. This fast pace results, for example for heat-sealing of blister packaging, in increasingly short contact times for the films.

The high rotary speeds of 500 and even 800 RPM of the new slip rings compensate these high speeds without difficulty. The load current dimensioning of up to 20 resp. 25 amperes allows very short heating times and thus an optimal temperature regulation – even for short contact times.

The IP64 protection level is ideally suited to resist all kinds of cleaning processes, from the damp cloth up to the water jet. And, as regards flexibility and easy installation, the packaging artist has the best arguments for its use: flat plugs, fastening screws and anodised aluminium parts minimise the installation time for the customer.

New slip ring contact material reduces maintenance work for packaging machines.

Technology in detail
For high food quality

- The new SR060E slip ring is designed for up to 3 load and 2 signal transmissions. Its strong points: From heating and monitoring of the sealing rollers in flowpack machines, in stretch film wrapping machines or balancing machines up to textile machines.
- Smooth and straight surfaces – without any undercut – for the high hygiene and cleaning safety requirements in the food processing industry.
- Fully encapsulated oval-shaped slip rings, protecting the machine completely against abrasion dust.
- Two-chamber system of the slip rings SR060E and SRI085, for appropriate insulation and easy cleaning.
- Thanks to a new contact material, the slip rings are almost maintenance-free: The slip ring equipped with silver, bronze and precious metal contacts (contact oil-free) requires maintenance only all 100 million revolutions. The SRI085 slip ring relies on contactless signal transmission on the moving machines, therefore operating totally without mechanical wear.
- Easy compensation of the high rotary speeds in packaging machines, from 500 to 800 RPM.

Packaging represents an increasingly important media for foodstuff manufacturers: Film packaging informs the customer about product features, nutritional content and ingredients. In addition, it guarantees hygienic and nutritious food for long periods of time Kübler slip rings contribute to the safe manufacture of vacuum packages, in which the product is placed in a bag made of a plastic or aluminium film and from which the air is then removed. Because only the high-quality packaging around the food preserves the composition of the gas inside so that we can enjoy still fresh and safe food. *hei* ■

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