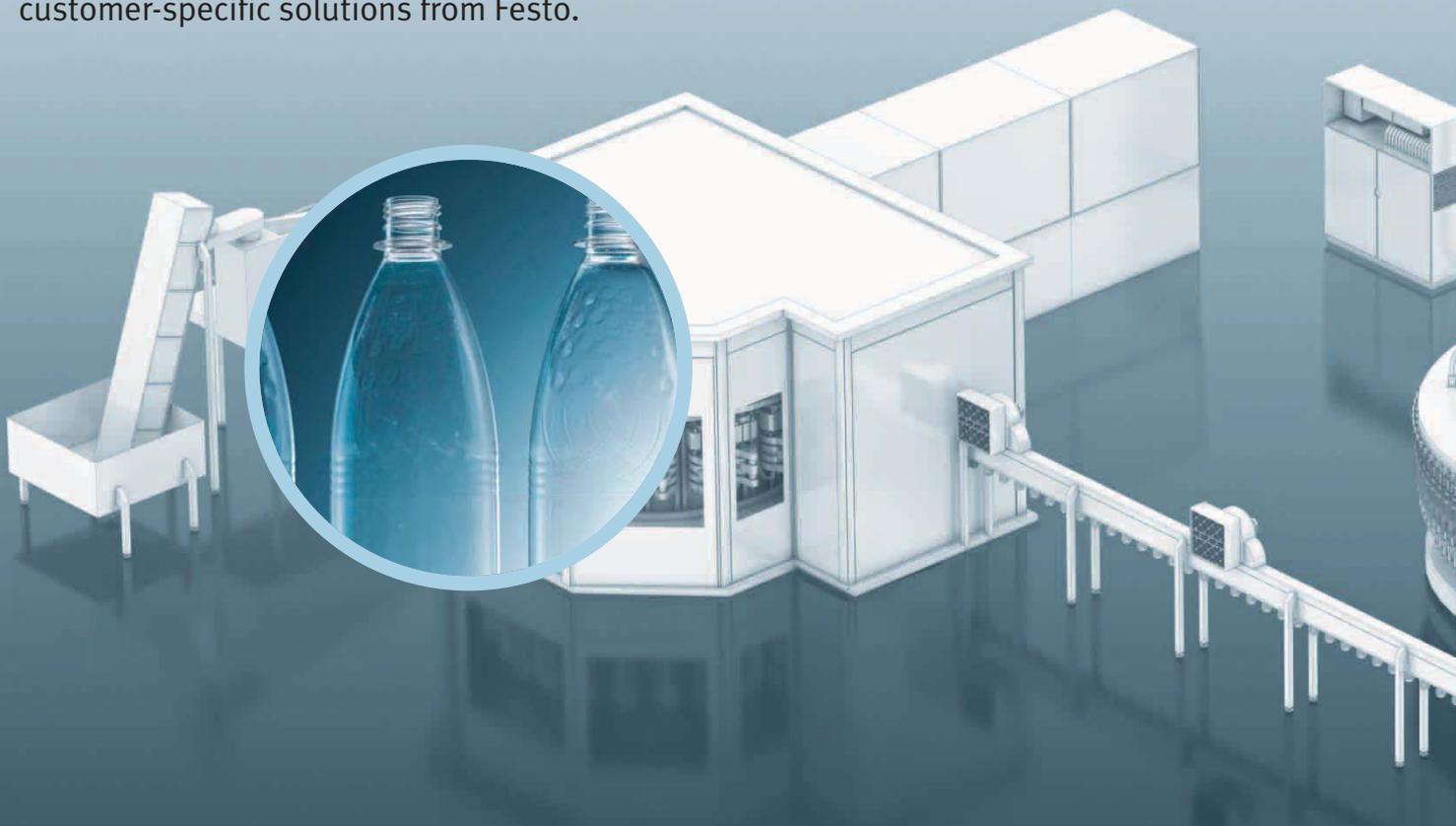


Hygienic automation technology

# Fresh on the table

**Consumers are looking for** reliable quality when they buy their groceries. Hygienic manufacturing, filling and packaging in the food industry ensures first-class products. An important factor in hygienic value-creation chains is customer-specific solutions from Festo.



**T**he key phrases in automated food production are cost-efficient solutions together with high hygiene standards. However, the decisive factors also include variety in products, taste and packaging, which has consequences for the set-up times and modularity of production facilities. The examples described in this article show how automation technology can make food

production safer and more efficient. It is advantageous for a single-sourcing policy if the automation supplier can provide both process and factory automation.

#### **From process automation ...**

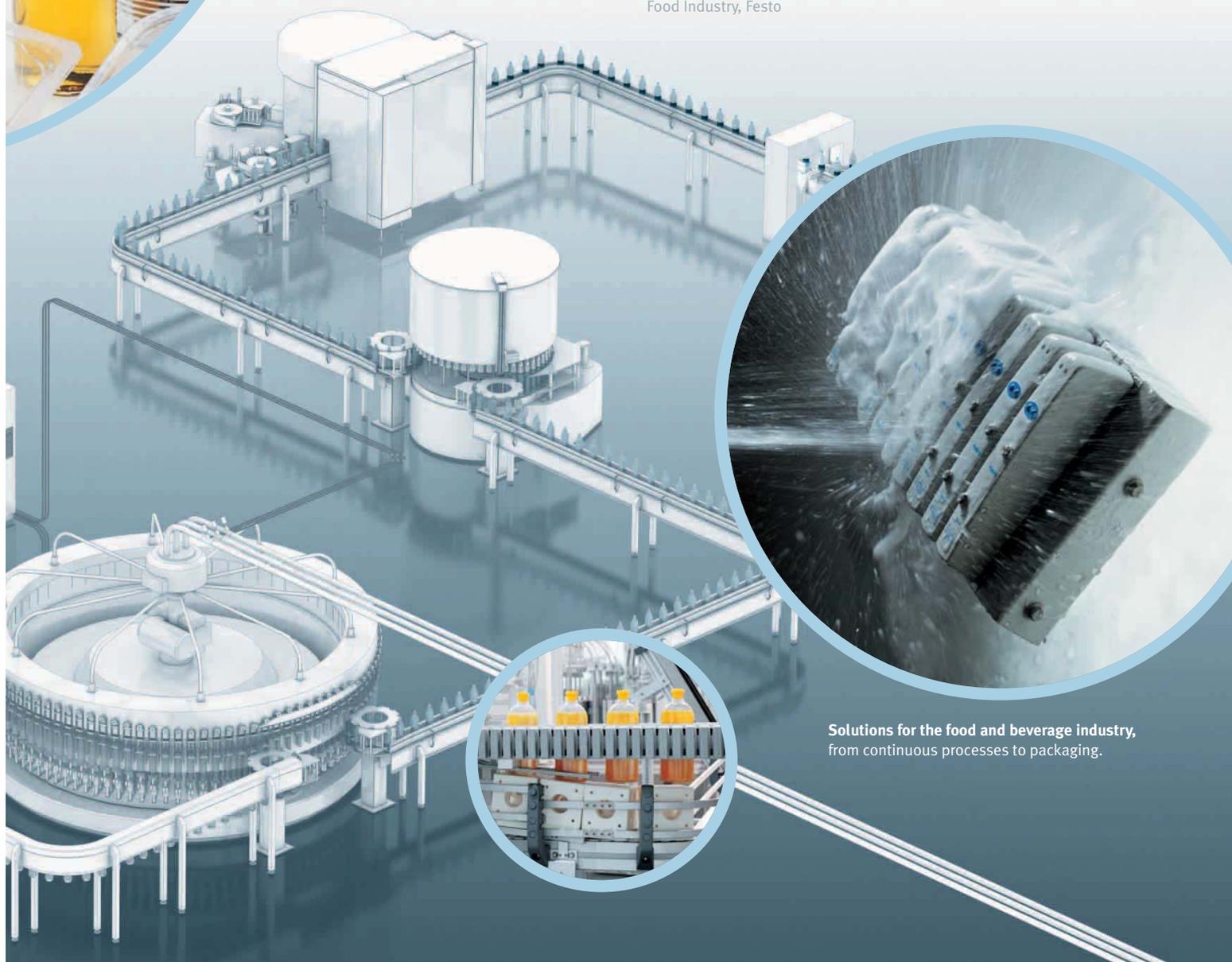
The production process itself involves many different activities: mixing and stirring, sterilization, pasteurization, homogenization, filtration, dosing, weighing, fill-

ing and storage. Automation ensures the reliability of these processes. Semi-rotary actuators and linear drives or cylinders DFPI with integrated guides and displacement encoders open and close ball valves and butterfly valves. In order to control the many pneumatic semi-rotary actuators and linear drives installed in many breweries, central stainless steel control cabinets are used in the fermentation cel-



“What makes our work so exciting is our closeness to customers and the fact that we are responsible for the high quality of their products.”

Alexander Wagner, Head of Industry Segment Management, Food Industry, Festo



Solutions for the food and beverage industry, from continuous processes to packaging.

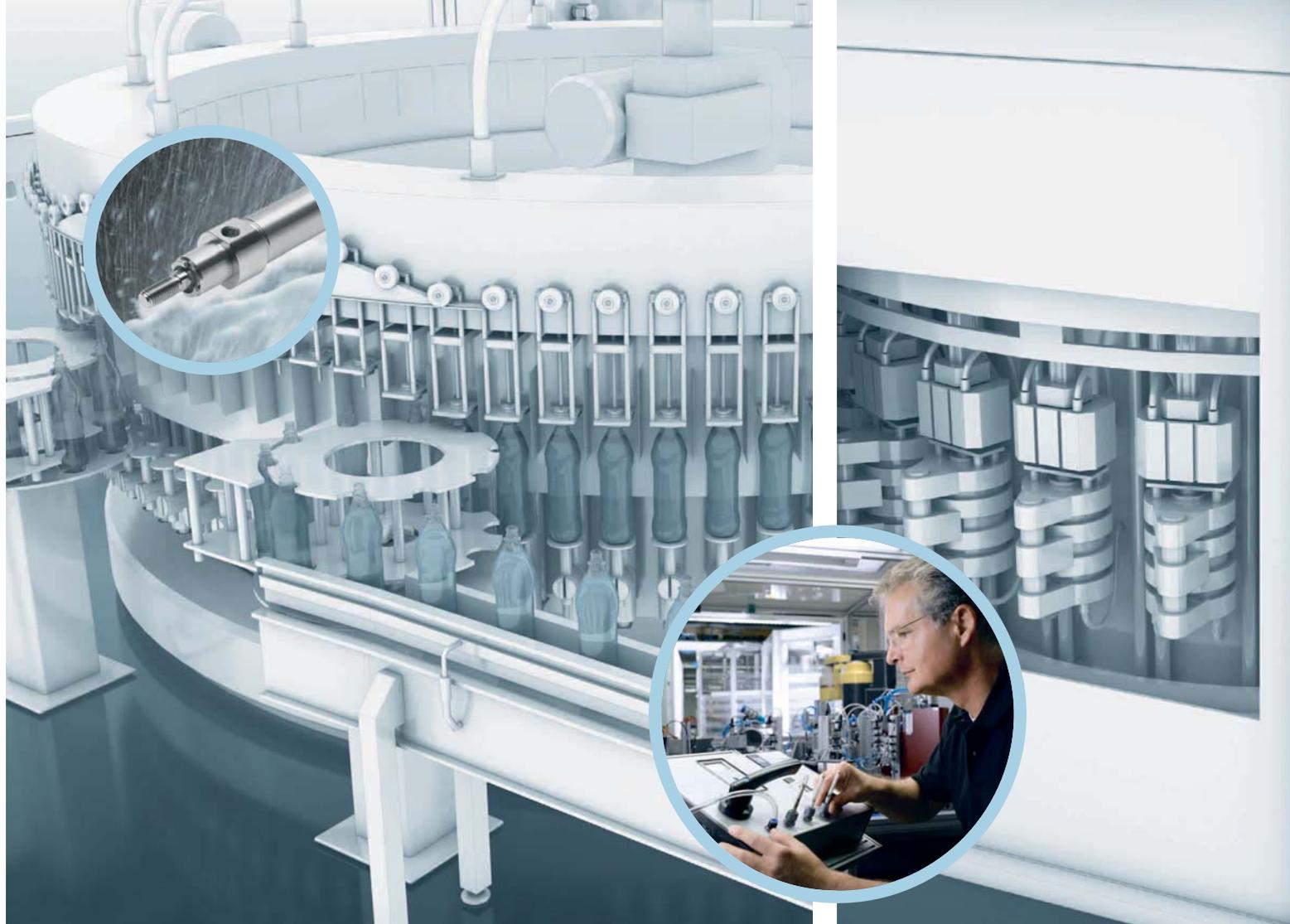
lars with CPX valve terminals and service units for compressed air preparation, together with appropriate sensors.

**... to factory automation**

In the splash zone of food processing operations, the automation technology does not come into contact with food. Nonetheless, corrosion-proof design is mandatory, since water splashes, cleaning agents or

dripping food may otherwise damage drives and valve terminals, proximity sensors and fittings. If the installation concept calls for decentralised valve terminals, splash-proof Clean Design valve terminals CDVI and individual valves CDSV can be installed close to the drives which are to be controlled and require no protective control cabinet.

The Clean Design cylinders CDC are modular and constructed without sharp edges or corners, ensuring that dirt residues or germs can be completely removed during cleaning. For the handling of workpieces, guided cylinders DGRF are now used, which are available with the option of dry-running seals. The cylinder lubrication and seals have FDA certification. The associated proximity sensors →



→ are resistant to cleaning agents, heat and mould.

### The star with the gentle curves

The star performer in the food zone is the stainless steel cylinder CRDSNU. Thanks to its soft, rounded shape it is easy to keep clean. Its self-adjusting end-position cushioning PPS saves users a lot of time during set-up.

The CRDSNU also proves its worth in a machine for sorting salmon. Saline sea water and fish substances mean that the round cylinder is put to a hard test. What is more, it is cleaned daily with chemical additives. A standard round cylinder would give up the ghost in this application after just a few weeks. The CRDSNU, however, is in its element in this humid and aggressive environment.

### Signed, sealed, delivered

To ensure that drives do not fail in harsh environments, users can choose seals from the Festo modular seal system. This includes FDA-compliant standard seals suitable for food use with normal cleaning, seals for unlubricated operation and seals for applications with intensive cleaning. FKM seals are available for high

temperatures up to 120°C and for acid environments, while there are hard scrapers for low temperatures down to -40°C and for applications involving sugar crystals.

### End-of-line packaging

Festo can provide a variety of handling solutions with a choice of drives to meet individual customers' requirements with regard to packaging, labelling, testing and monitoring in the non-food zone at the end of the value-creation chain. Its handling experts can select from more than 30,000 products and use appropriate servopneumatic, electric or pneumatic drives for the customer application in question, together with the associated control and valve-terminal technology, sensor technology or vision systems.

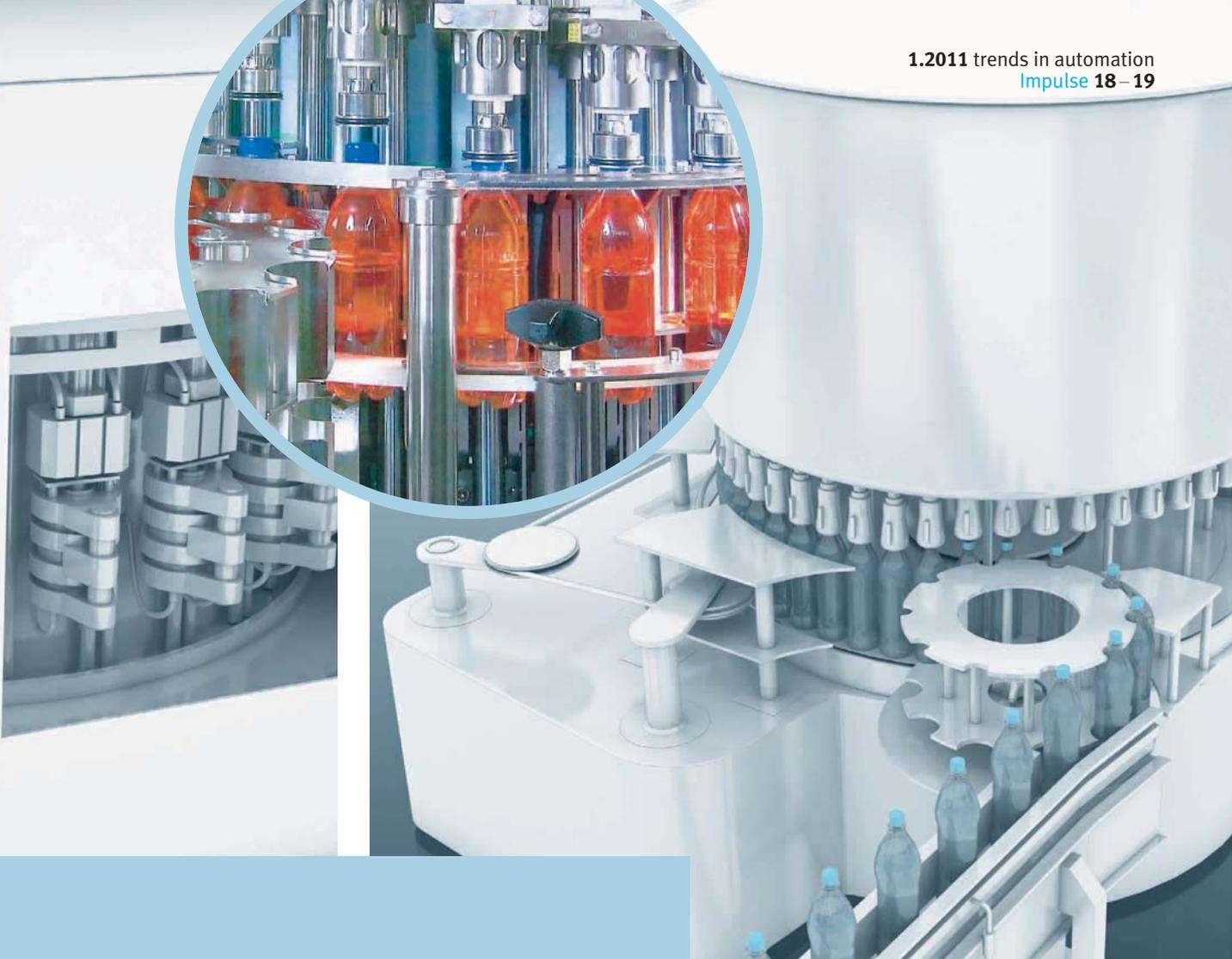
These are fully assembled and tested and delivered directly to the machine as ready-to-install system solutions – complete with all design data, circuit diagrams as well as a comprehensive functional and fixed-price guarantee. Users receive not only hardware in the form of a connection-ready module or subsystem but a complete value-creation package. Complete solutions mean less work for customers' personnel, reduce system

design costs, simplify the procurement process and reduce process costs. "Fit and forget is the objective for our customers," explains Alexander Wagner, Head of Festo Industry Segment Management for the food industry.

It is rare that two handling systems are the same. The spectrum ranges from simple pick & place systems through to linear gantries, cantilever gantries, 3D gantries, the rod-kinematics robotic system Tripod, high-speed gantries and individual application-specific gripper systems. "Our customers describe their handling task, we deliver a plug and work solution directly to the installation cell – there is no need for complex commissioning," continues Wagner.

### Putting an end to waste

Less machine downtime, detection and elimination of leaks in compressed air systems are crucial. That is why services such as total productive maintenance, condition monitoring and energy saving services are becoming key factors in food processing. Many companies have declared war on waste and high energy prices.



Home meal replacements

## A lot on their plates



Around 50% of German consumers find that they have little time for cooking. No wonder then that sales of convenience food are constantly rising. The trend towards culinary simplicity is accompanied by a desire for fresh products. The answer to these two demands is today called “home meal replacement”. HMR is well on the way to conquering the market in Europe and many other industrialised countries. This term refers to simple, fresh food and snacks which the customer can either eat immediately or prepare at home. They are described in a variety of ways from “ready to cook” through to “ready to heat” and “ready to eat”.

Home meal replacement represents a new challenge for the automation of food packaging. Attractive products need attractive packaging, while traditional requirements such as a simple protective function are also important. What is more, consumers’ environmental awareness has been increasing for years. Trays made of polyactide plastics, or PLA, are fully biodegradable, including their seal foil, and are the perfect answer to modern trends. The same applies to microwavable cardboard packaging. This is also easy to print and gives manufacturers new scope for individual product design.

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Food safety and energy efficiency are not mutually exclusive. On the contrary: just as food remains fresh longer through the use of hygienic automation technology, the plants in which they are produced always stay modern, reflecting state-of-the-art technology. ■

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