

Food Processing and  
Packaging Machinery



# A better life with smart technology

[tec4people.com](http://tec4people.com)



# **VDMA – The Network of the German capital goods industry**

VDMA (German Engineering Federation) is the trade association of the German capital goods industry. With more than 3,200 members the association represents almost all major manufacturers of machinery, plant and apparatus in Germany.

The two core tasks of VDMA are the representation of interests to bodies outside the industry and the provision of comprehensive services for its member companies.

## **The Food Processing and Packaging Machinery Association**

The Food Processing and Packaging Machinery Association is one of the 36 industry-specific associations within VDMA and comprises more than 300 companies at present. We provide comprehensive support to our members in their day-to-day work.

The Association is one of the largest in the VDMA. It is a very heterogeneous sector. Manufacturers of bakery machines, meat processing machines, beverage production and dairy technology, confectionery machines, machines and equipment for vegetable raw material processing, packaging machines, and machinery and installations for producing pharmaceutical and cosmetic products are members of this association.

[nuv.vdma.org](http://nuv.vdma.org)

## More know-how means more value – Expertise to please

Hardly any other machine building industry is as vital to human beings as the food processing and packaging machinery industry. Everybody has to eat and drink – these are basic daily needs. Also, the demographic change and the increase in Western consumption habits in developing and emerging countries are creating an ever-growing demand for processed and packaged food and beverages. To produce enough food for everyone everywhere we need efficient, customized and sustainable technology as well as a well-trained workforce.

Be it meat processing machinery, bakery machinery, confectionery machinery, beverage machines, dairy machinery, machines for the processing of vegetable raw materials, pharmaceutical and cosmetic machinery or packaging machinery: With their intelligent processing solutions and innovative packaging concepts and with their excellent service and expertise, the German manufacturers of food processing and packaging machinery contribute their share to supply the world with food and to bring down food losses. But this is not all they do: They also help establish and develop sustainable value chains in the food industries of emerging and developing countries and provide training to make personnel qualified to operate modern machines.



## Creativity – Individual solutions for customers from all over the world



The growing demand for food poses many challenges for companies and requires creative and individual solutions. Product life cycles are getting shorter and shorter, eating and drinking habits are constantly changing. A large number of laws and directives on food production must be observed and country-specific recipes or religious regulations, such as e.g. halal food, must be taken into account. However, individual climate conditions may require adjustments to machinery as well. Customer-specific solutions also include adapted operating concepts for machines. Depending on the state of knowledge and experience, the operation of a machine can be designed as a fully automated concept or in semi-automatic process steps which permit the integration of operators. Where the packaging process is concerned, the available packaging materials may create a problem and thus make adjustments necessary. The many diverse requirements are both challenges and incentive for further developments and innovations.



## Responsibility – Food safety is a top priority



Worldwide, the most stringent laws and regulations apply to food production. And rightly so. When processing and packaging food, hygiene, product safety and quality have top priority. Compromises will not be accepted. The protection of the consumer must always be ensured and he must be able to rely on being offered the exact same quality each time. It must also be ensured that health hazards by soilage or even contamination are excluded.

German mechanical engineering is known to make a significant contribution to this. Not only does it provide the “hardware”, e. g. hygienically designed machines that are easy to clean, but it also offers the customer holistic solutions for hygienic production. This includes, for example, the creation of cleaning concepts with fixed intervals or according to specific cleaning requirements – depending on the systems technology used. Sensors here help to determine the ideal time frame.

## Packaging – Function and emotion

Today, world-wide supply relations characterize food production and distribution. In order to meet the requirements arising from this, the packaging has to fulfill a variety of tasks: It must protect the food during transport and storage, guarantee freshness and a long shelf life and state all relevant consumer information. It must also offer better dosage options – e.g. by being resealable – and finally a visually appealing product presentation. Packaging has therefore become an important component of the product as such.

Also, keeping the weight as low as possible is environmentally friendly and saves transport costs. Regardless of whether the packaging is only used as a protective cover or as an attractive marketing element, packaging machines must be flexible and powerful.



# Industry 4.0 – Production smarter than ever

Process optimization in all its facets is the precursor – the preliminary stage – and at the same time also the goal of the future-oriented topic industry 4.0 or IoT (Internet of Things). The digitalization of production, the networking of components, machines and systems via the internet is progressing ever further.

The focus of Industry 4.0 is on optimized production processes and a high degree of efficiency – especially with respect to the use of energy and raw materials. The main players are software, sensors, data, networking and intelligent components with embedded systems such as high-performance microcomputers that organize production actively. The factory of the future will be intelligent. Industry 4.0 interlinks production with state-of-the-art information and communication technology. This allows tailor-made manufacturing to meet individual customer requirements – in a way that is cost-effective, flexible and of high quality.

Even though many speak of an industrial revolution, Industry 4.0 should rather be seen as an evolutionary process.

Some important aspects of Industry 4.0 have already become reality: the communication between machines, in order to monitor, control and document processes. Machines are equipped with sensors, radio modules and measuring devices whose data help to monitor production.

Translated into Industry 4.0 this means: Intelligent sensors transmit wireless data about the state of a machine via app. Maintenance work thus is made predictable and can be triggered from absolutely anywhere.



## Economic efficiency – High performance



To ensure that food and beverages can be produced and packaged in sufficient quantities and at a reasonable cost, machinery and equipment must perform at a high level. Multi-shift work is often the case in the food industry. High production volumes, stable processes and the highest possible plant availability are the key factors. The production process is already being digitized in order to increase production efficiency. For example, plant manufacturers increasingly rely on predictive maintenance. For this they use intelligent data analysis. Sensor-acquired data on operating conditions allow the prediction of the optimum maintenance time. This way, wear parts can be exchanged in time and production losses can be avoided.

# Sustainability – Save and gain

Waste is not an option in today's world. Environmental and sustainability considerations are equally fundamental to consumers, food manufacturers and machine suppliers. Technically, numerous solutions are already being offered that help to efficiently use and save energy, water and raw materials efficiently. Energy-efficient drive elements, optimum use of compressed air, reduced water consumption during beverage and food production, water recycling, the utilization of process heat – all this and a great deal more will influence the energy balance positively thus achieving lower production costs.

Where packaging is concerned, the focus is on saving material. Lightweighting is very popular. Whether metal can, plastic or glass packaging: Everything is becoming less heavy while offering the same or even better packaging performance and stability. This weight reduction saves raw materials and energy, optimizes handling and lowers transport costs.



## Flexibility – The answer to rapidly changing trends

Process technology for food and beverage production must be flexible and designed for different options: The processing procedure needs to be readjustable for any new formulation that is to meet new taste requirements or to offer added health value. Temperatures or dosing procedures must be adapted accordingly.

Additional containers with concentrates or alternative raw materials often become necessary. Modular machines allow the integration of needed additional equipment quickly.

Automated recipe management with integrated information flow and a connection to the control system ensures highly automated production processes, no matter which ingredients are used for which product.

But high flexibility is also required in the packaging process. Preferences in packaging design, consumption habits, different household sizes and the self-presentation of brands through individual advertising concepts are subject to constantly changing trends. What is needed here, are machines which can process a large number of packaging styles and that allow product, quantity and format changes without any problem. In particular, the trend towards increasingly smaller batch sizes requires short conversion and start-up times. Modern packaging machines offer flexible and quick reactions.



# Customized solutions – „Made in Germany“



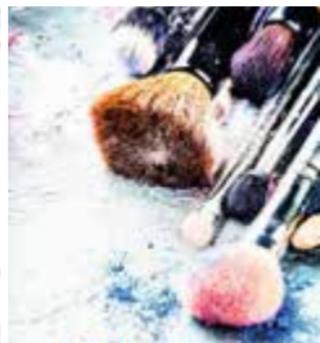
From simple technology to the high-end machine: German manufacturers of food processing and packaging machinery cooperate closely with their customers to develop precisely the processing and packaging technology that meets their specific needs – depending on country and region. This includes a comprehensive service and maintenance range as well as the training of the operating staff.

When machines from Germany are used – for the production and packaging of food, beverages, cosmetics and medicines as well as for packaging other non-food products – commitment and passion are part of the deal.

## Picture credits

Cover VDMA/Fawema Maschinenfabrik GmbH & Co. KG

Inside wideonet, shutterstock.com  
Pincasso, shutterstock.com  
Magdanatka, shutterstock.com  
Vladimir Nenezic, shutterstock.com  
casanisa, shutterstock.com  
wavebreakmedia, shutterstock.com  
Afrika Mojca Odar, shutterstock.com  
Vladimir Nenezic, shutterstock.com  
vege, fotolia.com  
Romolo Tavani, shutterstock.com  
Romolo Tavani, shutterstock.com  
Stockr, shutterstock.com  
showcake, shutterstock.com  
Graphic design, shutterstock.com  
NRT, shutterstock.com  
momente, shutterstock.com  
BillionPhotos, shutterstock.com  
strannik fox, shutterstock.com  
symbiot, shutterstock.com





## **VDMA**

Food Processing and  
Packaging Machinery

Lyoner Str. 18  
60528 Frankfurt am Main  
Germany

## **Contact**

Phone +49 69 6603-1432

Fax +49 69 6603-2432

E-Mail [nuv@vdma.org](mailto:nuv@vdma.org)