



# HYGIENIC VALVE TECHNOLOGY

Competence for safe milk and food processing





# VALVES AND COMPONENTS FOR PURE DELIGHTS

Whether milk, plant-based alternatives or other liquid foods – more and more processing systems are required to meet the growing global demand.

## **From fresh farm goods to high-quality products**

GEA engineers bring decades of industry-leading experience and know-how to the task of processing milk and a multitude of other liquid foods. From butter, quark, ice cream, cheese or whey derivatives to baby food, vegetable purees and modern oat drinks – GEA develops and provides complete solutions and highly functional components that you can always rely on.

## **Efficiency for first-class processes**

Hygienic valve technology from GEA meets the strictest requirements in terms of food safety and optimum quality of your products. Our valves save raw materials and resources and provide a route to safe and efficient processing of sensitive liquids. Our groundbreaking flexible valve concept and modern digital control and automation functions offer maximum safety for your product and your process. Our highly functional components for efficiently designed CIP (Cleaning In Place) and product recovery solutions pave the way for sustainable, future-proof processes with considerable savings potential.

With GEA as your partner, your company is ideally poised to meet the growing demand for dairy products, milk alternatives and liquid foods.

# EVERY PRODUCT ACHIEVES PERFECTION

Thanks to unlimited selection, adaptation and combination options, you can implement all your process ideas with GEA valve technology.

Mapping the entire production process, our hygienic valves serve as shut-off valves, divert valves, mixproof valves or tank bottom valves. They also take on countless special functions as sampling valves, control valves or overflow valves to control the pressure during pump operation.

## **Components for all process stages**

The modular GEA VARIVENT® valve series is recognized worldwide as a pioneering portfolio and benchmark for premium-quality valve technology. Numerous complementary component series cover special application requirements.

Inline measuring systems, tank safety systems, expansion compensators and product recovery systems add to your possibilities with hygienic valve technology.

Compatible GEA D-tec® and GEA Aseptomag® series are available for applications in the hygienic classes UltraClean and Aseptic, for instance in the filling area.

## **Sealing options for every application**

As food products are extremely sensitive, there are many different parameters that determine the selection of valve sealings – from the process temperature and the flow rate to product viscosity and oil content. The modular sealing concept for GEA valves is tailored to ensuring the right selection of hard or soft sealings, made of EPDM, FKM or HNBR to adapt each valve precisely to its application point.



# HYGIENIC SAFETY FOR DEMANDING PROCESSES

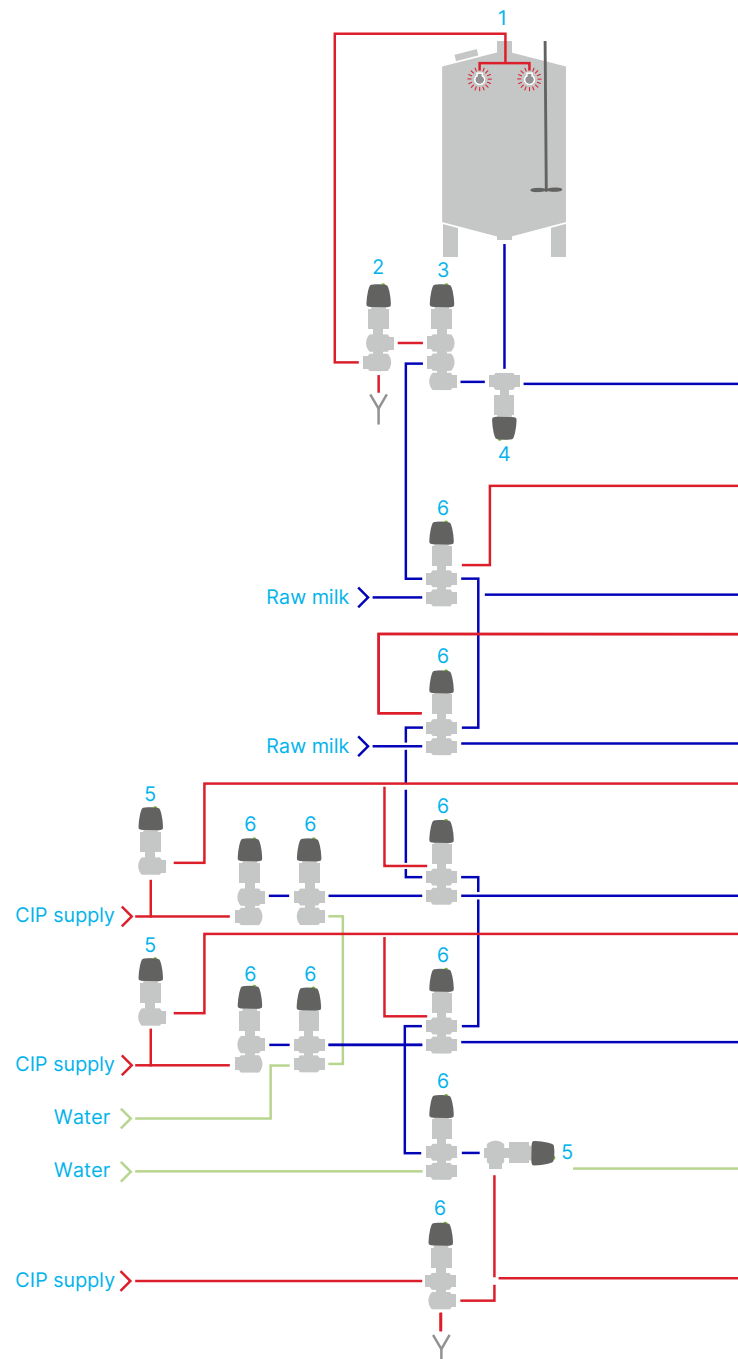
When it comes to safe food production, the product must be prevented from coming into contact with incompatible media, from the receipt of the raw materials to the filling line. For decades, GEA VARIVENT® mixproof valves have been leading the way in terms of maximum safety, allowing you to set up complex flow paths and safely avoid contamination. Two media flow through the valve chamber but are sealed against each other by two separate valve discs.

## Product Reception, Distribution and Storage

1. Tank
2. Merging changeover valves
3. Distributing changeover valves
4. Tank bottom valves
5. Shut off valves
6. Mixproof valves



Scan the QR code and watch our product animation video





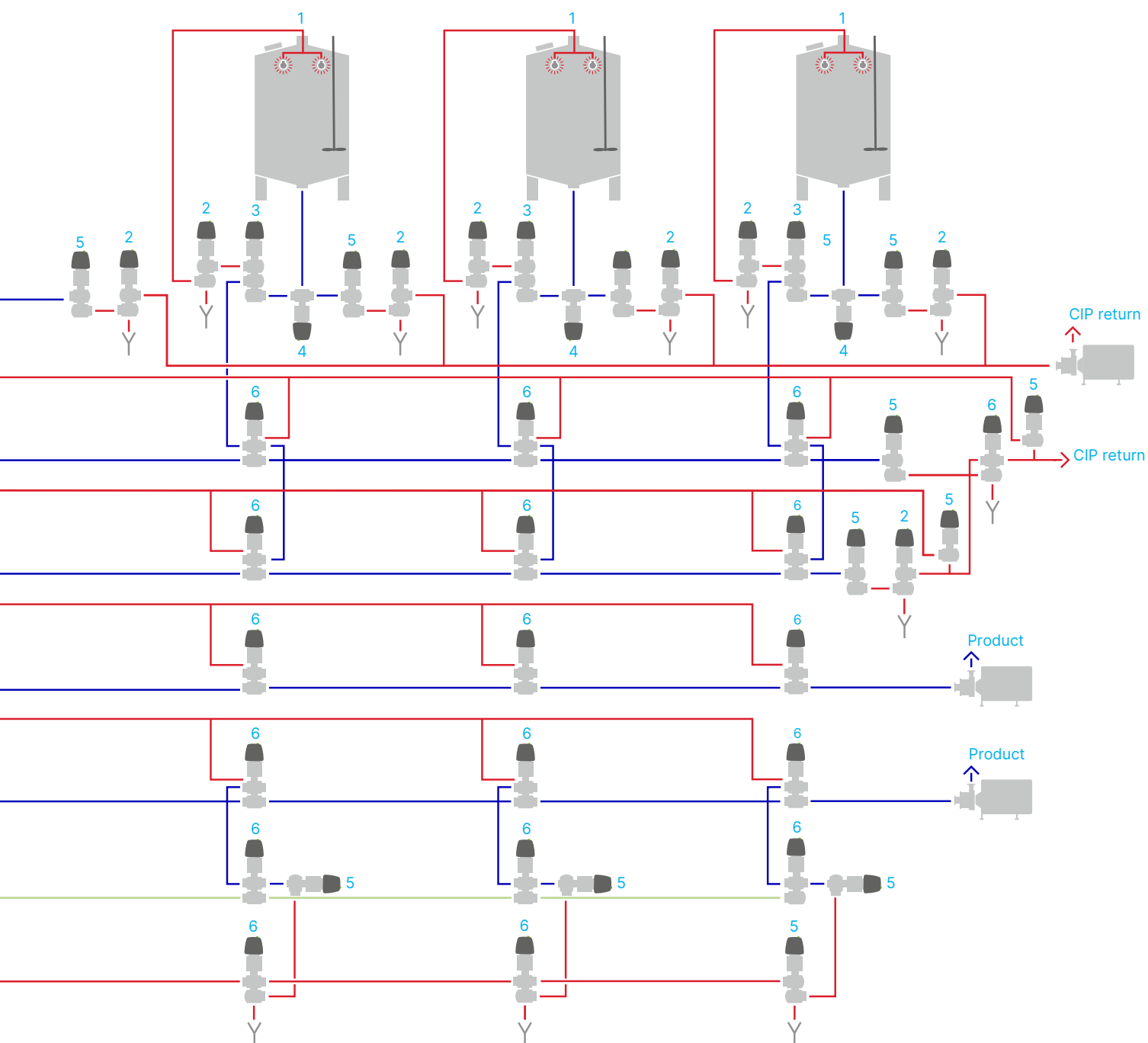
GEA VARIVENT®  
hygienic single-seat valves



GEA VARINLINE®  
hygienic process connections



GEA VARIVENT®  
hygienic double-seat valves



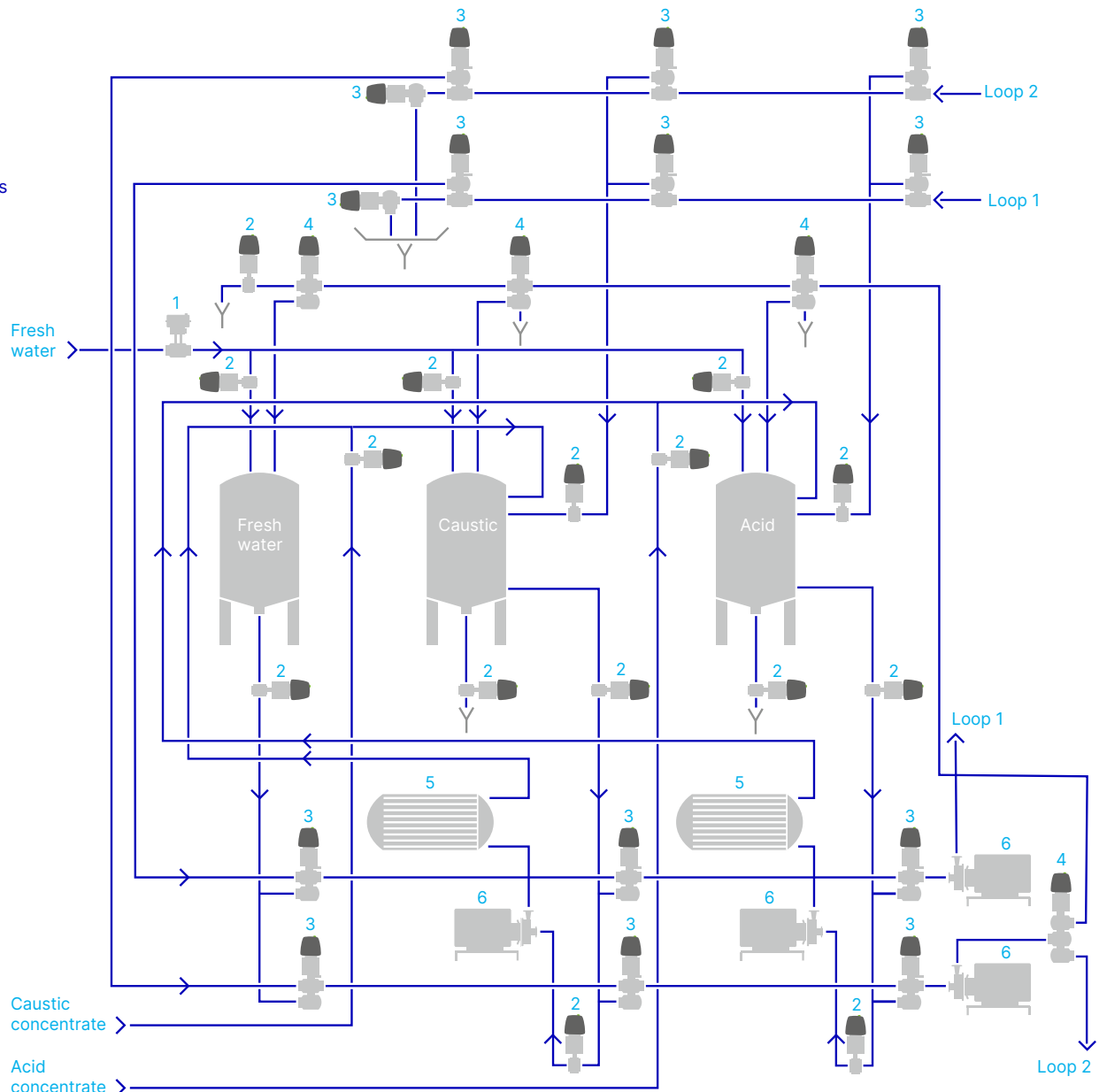


# PERFECT AND ECONOMICAL CLEANING

In modern manufacturing processes, systems for efficient cleaning and product recovery provide decisive advantages.

## CIP-SYSTEM

- 1. Control valves
- 2. Butterfly valves
- 3. Shut-off valves
- 4. Divert valves
- 5. Heat exchanger
- 6. Centrifugal pumps







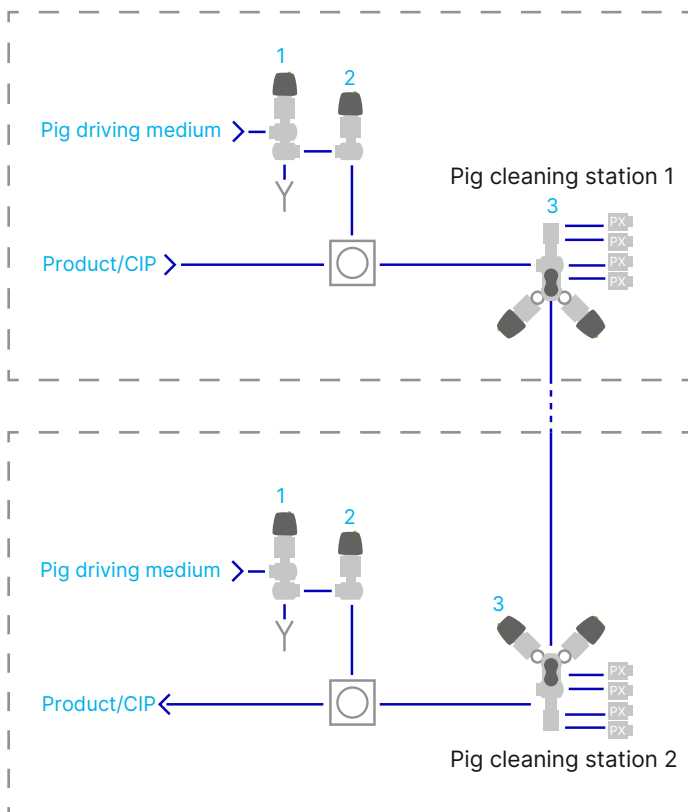
### Time-saving CIP systems

All flow paths food or dairy processing must be cleaned of product residues in regular cycles. In the pipe matrix for optimally efficient CIP (Cleaning In Place) loops, our GEA VARIVENT® mixproof shut-off and divert valves play a key role as safe switching points.

### More yield thanks to efficient product recovery

The further a product goes through the process, the higher its value and the more important it becomes to recover product residues before pipe cleaning. The GEA VARICOVER® pigging system does this by sending an air-driven pig through the pipe. This results in the same yield from less materials and with less rinse water – a plus also for the environment.

GEA VARICOVER®  
hygienic product recovery systems



### Pigging System with Pig Stations

1. Divert valves
2. Shut-off valves
3. GEA VARICOVER®

Scan the QR code and watch  
our product animation video



# ASSURANCE AS DESIRED

With innovative developments in hygienic valve technology, GEA fulfills special safety requirements and market needs.

Thanks to breakthrough developments by GEA, you can now add maximum safety to your sensitive dairy and food products. Protect the well-being of consumers and the reputation of your brand against process errors and meet the food safety requirements of the future today!

The GEA VARIVENT® valves for special safety requirements in the valve series M offer all our safety innovations in one valve. A special vacuum effect, built into the leakage chamber, prevents incompatible substances from mixing, even if the sealing fails. Balancers in both pipelines safeguard the valve against water hammer and thermal pressure.

With this innovation, GEA engineers were the first to develop a double-seat valve for successful application in US dairies under the demanding PMO (Pasteurized Milk Ordinance) safety requirements. The new GEA VARIVENT® Mixproof Valve type MX, designed to international standard sizes, offers this maximum level of safety to GEA customers around the world.



GEA VARIVENT®  
hygienic valves for special safety requirements



# AUTOMATED PROCESSES FOR TOMORROW

Digital valve automation unlocks decisive options for efficiency-optimized processes.



Our valves and product recovery systems can be equipped with digital control tops that are connected to the central control system and integrate the valve technology into highly automated process operations.

## **The process system goes digital**

Dairy and food processing companies can benefit from the high potential of digital control technology to optimize their processes. The digital control tops from GEA ensure automatic, error-free activation and monitoring of all valve functions as specified in the central program. For the plant operator, this means streamlined and fully flexible production and cleaning processes that require less staff, time and energy.

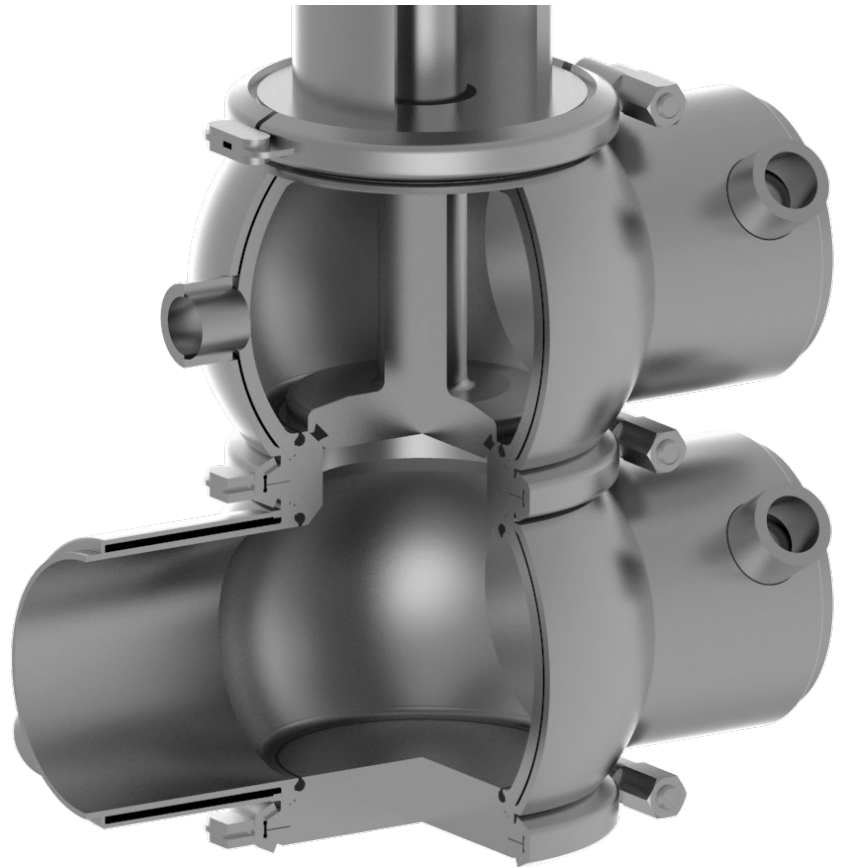
Control tops and valve bodies from GEA offer perfectly coordinated mechanical and electronic functions. Commissioning is also carried out automatically with minimum effort.

## **Built-in savings potential**

Improved sustainability is a key benefit of intelligent valve control: The selectable LEFF® function in GEA's T.VIS® A-15 control top saves up to 90 percent cleaning fluid through optimized timing of the switching movement. In addition, consistent automation simplifies the entire system setup for processes that can be fully validated. Using a modern IO-Link system can enable early, efficient integration into effort-optimized Industry 4.0 environments.

# ENGINEERING SKILL FOR FINEST TASTE

Chocolate and ice cream are popular with every generation. Dedicated concepts are required to manufacture these high-quality products.





GEA's extensive range of equipment solutions offers the right system equipment for every task. At the GEA competence center for hygienic valves in Buechen near Hamburg, Germany, our engineers are constantly exploring new paths for improvement and work together with customers to create solutions for individual requirements.

#### **Jacketed valve housings ensure stable processing temperatures**

At the request of a well-known manufacturer of confectionery, GEA developed the heated, jacketed GEA VARIVENT® housing about 15 years ago. Thanks to this innovation, producers of sensitive media can maintain perfect processing temperatures at all times.

This solution has become a standard in the chocolate processing industry to achieve the best results with quality products.

#### **Integrated GEA solutions enable special process steps**

Customized systems offered by GEA for numerous special process applications incorporate our hygienic valves and have proven themselves over decades, from mixing stations to degassing and filtration systems.

The complete GEA portfolio includes further dairy and food processing technologies, from a comprehensive selection of pumps and tank cleaners to milk separators, homogenizers and dryers.



# YOUR ADVANTAGE WITH US

Make the most of GEA hygienic valves to secure your lead in the dynamic market for modern dairy and food products.

## **Your product is the focus**

Whether yoghurt, cream cheese or ketchup: Our valves adapt to your process and your product, not the other way round. There are no limits to your product ideas and demands. With ideally suited solutions, you can seize every opportunity to make a profit in your market.

## **Complex becomes easy**

Thanks to our variety of configurable valve types, you can implement even the most difficult process steps exactly as envisioned. The modular GEA VARIVENT® valve kit, by itself, offers millions of combination and expansion options for you to adapt to every conceivable challenge.

## **Safety is assured**

Globally valid certifications for hygienic safety are available for every valve configuration. Thanks to our advanced manufacturing processes, each valve unit is built to protect your products and processes.

## **You are ready for tomorrow**

Our valve technology consistently supports you with highly advanced digital technologies to make your processes future-proof.

## **Sustainability gets top billing**

Valves and components from our portfolio achieve valuable savings on raw materials, process water and energy throughout the process. Customized solutions and optimized switching operation result in lowest product losses and minimum consumption of water and cleaning fluids.

## **Premium quality gets premium results**

Our valves and components, as well as all the components built into them, go through countless manufacturing steps before they are completed. Without exception, every part must meet our strictest standards.

## **Maintenance effort becomes low**

Consistently standardized modules ensure a low number of different parts, which lowers the operating costs for maintenance and spare parts logistics. In case of any need, the worldwide GEA service network is available with fast, competent help.

Learn more at [gea.com](https://www.gea.com)







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