



GEA VARIVENT®

The family of hygienic valve units
for uncompromised processing

GEA HYGIENIC VALVES AND COMPONENTS

Efficiency delivering perfect results



GEA
Hygienic butterfly valves



GEA VARICOVER®
Hygienic product recovery systems



GEA VARITOP®
Hygienic tank safety systems



GEA VARIVENT®
Hygienic seat valves

GEA is one of the largest suppliers for food processing technology and of related industries. The global group specializes in machinery, plants, as well as process technology and components. Our customers are at the heart of everything we do and we build strong partnerships with them. We provide individual and sustainable solutions for a wide range of customer-specific applications.

Hygienic valves from GEA form the core component of matrix-piped process plants. Thanks to a pioneering valve concept that sets standards for its flexibility, as well as the latest control and automation functions, our valves offer manufacturers maximum product safety and process reliability.

All GEA hygienic valves are designed to be efficient and cost-effective for their applications, leading to sustainable operation and considerable savings potential.





GEA VARIVENT®
Hygienic mixproof valves for
special safety requirements



GEA VARIVENT®
Hygienic special
application valves



GEA VARICOMP®
Hygienic expansion
compensators



GEA VARINLINE®
Hygienic process
connections

GEA valve technology controls flow processes

Our hygienic valve technology ensures safe, efficient processes wherever sensitive liquid products are manufactured. In food production, the classic application areas range from milk processing to liquid foods and on to the brewing of beer and production of beverages. Further significant areas are biotechnology and pharmaceuticals, as well as care products and cleaning agents/detergents.

Regardless of the sector, the application or production specifications: Our hygienic valve technology is sure to meet the demands of our users.

Hygienic solutions for every task

Additional components in our range are available to optimize the design of any process plant – from pigging systems for the recovery of valuable products, process connections and expansion compensators for offsetting thermal stress to tank safety systems for securing and cleaning tanks and containers.

Supported by our Research and Development Center, we regularly launch new, technologically mature products. Our markets have high standards, which we continuously and systematically meet.

The latest GEA innovations in valve design ensure the maximum purity, safety and reproducible quality of your products.



THE GEA VARIVENT® FAMILY



GEA VARIVENT® Hygienic seat valves

The GEA VARIVENT® core range for every conceivable application in liquid processes.

Safely to safe products

As a pioneering standard for premium quality valve technology, the GEA VARIVENT® modular system offers an unrivalled range of ever-reliable, pocket-free valves – from classic single seat and mixproof double-seat valves to valves with special process functions. A nearly limitless choice and variety of customization, combination and materials options meet all hygiene, performance and stress requirements of individual customers. Systematically standardized modules with low parts diversity help cut the operating costs for maintenance and spare parts logistics. Each GEA VARIVENT® Valve Unit represents the perfectly balanced combination of supreme valve technology and state-of-the-art digital control top.

The benchmark for hygienic VALVE technology

- Modular system with unlimited versatility and low spare part stocks
- Hygienic design free of dead spaces
- FDA-compliant seal materials: EPDM, FKM, FFKM, HNBR, TEF ASEP® gold
- Digital control top for future-proof automation options



Download catalogs from our
GEA VARIVENT® web pages!



**GEA ECOVENT® Hygienic seat valves in the
GEA VARIVENT® family**

Standardized valve designs with the DNA of our GEA VARIVENT® technology – perfect for undiminished performance in less complex applications.



GEA VARIVENT® Hygienic valves with special functions

The specialists for specific applications in liquid processes: sample valves, control valves, safety valves, overflow valves and constant pressure valves in the GEA VARIVENT® system.



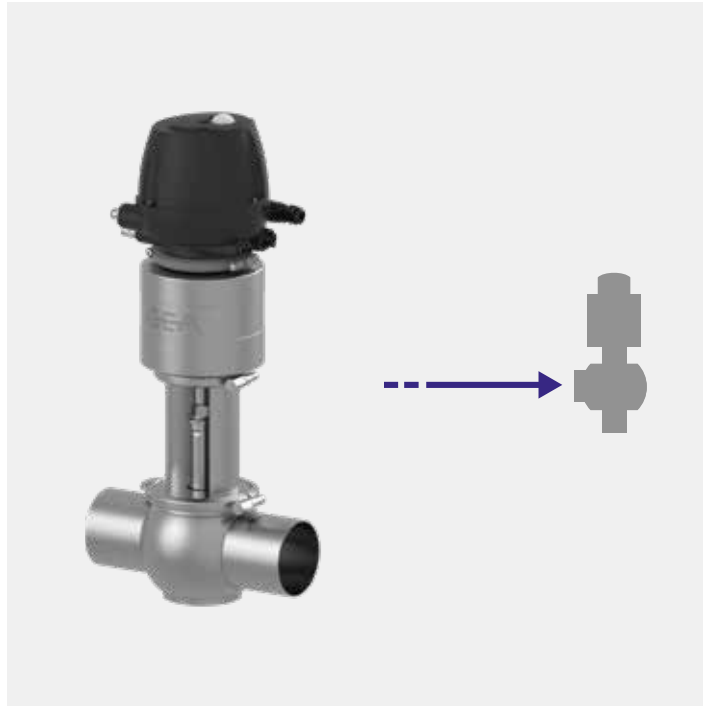
**GEA VARIVENT® Hygienic valves for special safety
requirements**

These valve series make it possible for you to ensure state-of-the-art protection for your product and meet the strictest hygiene standards worldwide (EHEDG, PMO, 3-A).

SETTING THE COURSE OF THE PROCESS

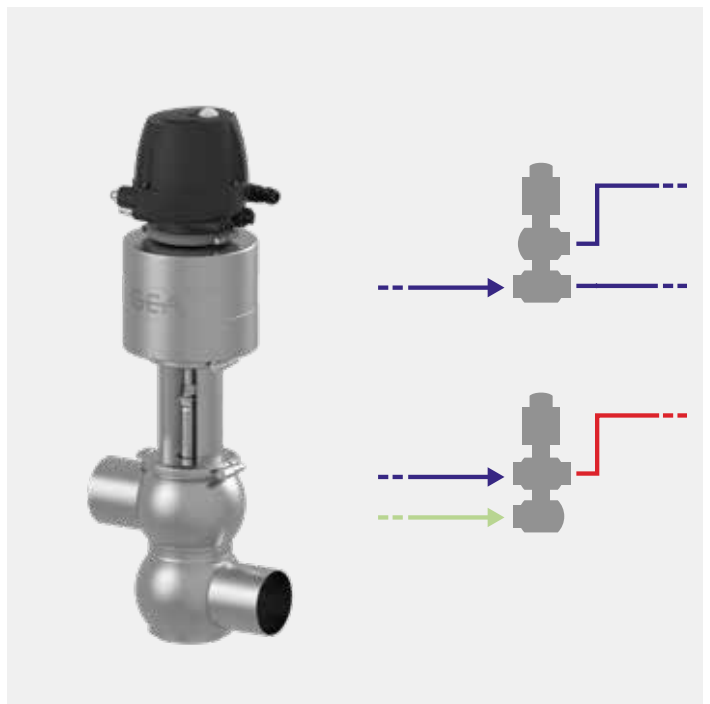
Shut-off valves

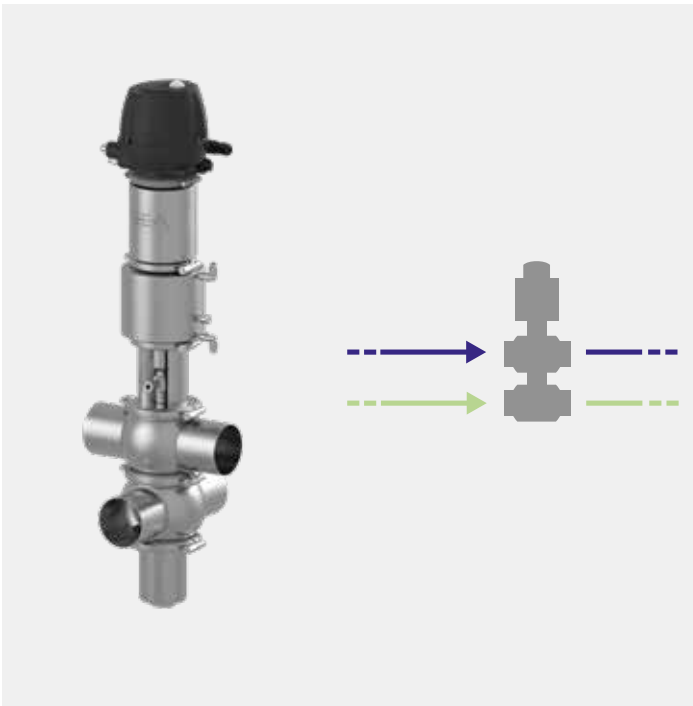
Single-seat valves are used for simple shut-off inhygienic applications. The valves impress with their ease of operation and flexibility. In order to avoid pressure shocks, separate versions are designed in the GEA VARIVENT® module for different directional flows.



Divert valves

Divert valves direct a liquid medium into the right path. Different types of application include the distribution of a liquid into two channels and the merging of channels in blending processes. Versions supplied by GEA are designed for different directional flows.

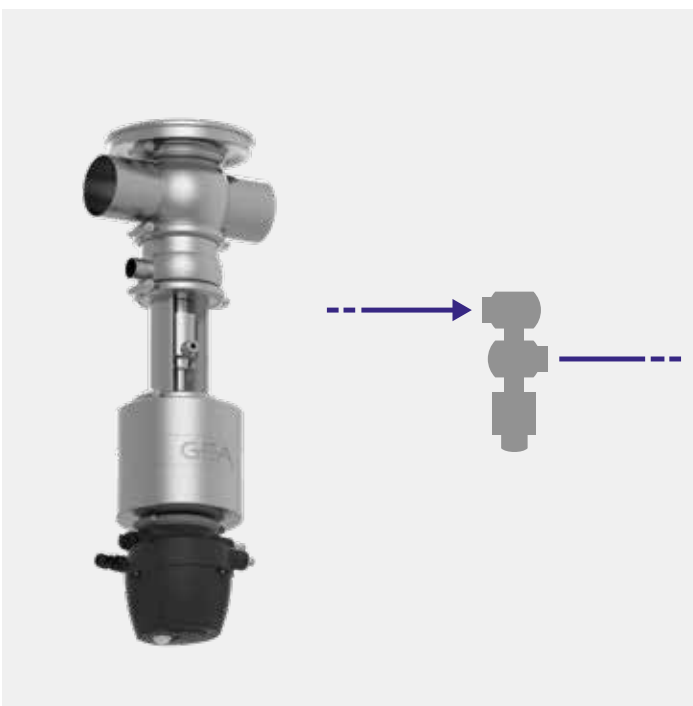




Mixproof valves

Double-seat mixproof valves provide the shut-off of incompatible media at pipe intersections.

Developed by Otto Tuchenhagen, the founder of GEA's hygienic valve technology range, mixproof valves to this day deliver crucial benefits for safe and secure applications, e.g. in the case of cleaning agents in pipes carrying products. Divert valves are also available as mixproof valves and support the safe construction of an efficient valve matrix.



Tank bottom valves

Tank bottom valves serve to hygienically shut-off pipes on tanks or containers. The various housing connections can be welded directly into the bottom of the tank or mounted flush with the tank bottom wall.

WHAT EXCELLENCE IN VALVE TECHNOLOGY MEANS FOR YOU

The uncompromising GEA VARIVENT® hygienic valve technology adapts to all requirements and delivers sustainable and economical system and process solutions for the most diverse and demanding production tasks.

Perfection in every product

Our valves adapt to your process and your product – and not the other way around. By relying on precisely configured valve technology, you can achieve the exact quality characteristics you want for every liquid product. GEA VARIVENT® offers an unparalleled range of configurable valve types – from classic single-seat and mixproof valves for shut-off, merging and distribution in valve clusters and other locations to control valves, sample valves and pressure-regulating valves for any application.

Safety in every process step

Whether you plan for one process step or several, for long-term service or frequent process changes, GEA VARIVENT® is every bit as flexible as you are. Our engineers' peerless experience, combined with the huge installed base of valve

units in the global markets, offers the best possible assurance of safe function and absolute reliability. Globally recognized hygienic safety certifications are available for all valve configurations. Our advanced manufacturing processes also guarantee that each valve unit is sufficiently robust to protect your products and processes.

Unique modularity for the perfect solution

Whether you are planning a new system, modifying your existing process line or want to expand the existing setup: Over a million combination and furnishing options in the modular GEA VARIVENT® valve system ensure perfect adaptation to any conceivable challenge. Existing valve systems in process plants can be modified or adjusted without the need to alter the overall system concept.



Digital strength for your progress

It is crucial that valve technology operates at peak efficiency every single day – and GEA VARIVENT® valve units ensure that with leading solutions, while also promoting process digitalization and automation. The key is the current range of GEA control tops, compatible with all GEA VARIVENT® valve configurations. Each control top enables intelligent valve control for easy commissioning and maximum safety in process sequences.

Uncompromising sustainability

Whether valuable raw materials, process water from the natural water cycle or the energy consumption in your system: GEA VARIVENT® provides you with hygienic valve technology for the sustainable use of resources without compromise and without impairing product quality or economical operation. Tailor-made valve solutions with perfectly tuned switching cycles ensure lowest possible product losses and minimum water and cleaning media consumption across all processing steps.



Dependable quality assured

Every GEA VARIVENT® valve unit and every component built into it goes through countless production steps until completion. Without exception, every single part must meet the strictest standards in terms of quality and function. We ensure full compliance with these standards in our own production facility in Büchen/Germany in order to guarantee every GEA VARIVENT® user lasting benefits and maximum operational safety over the entire plant service life.

Unparalleled food safety

Up-to-date technical safeguards protect your sensitive products, the consumers and your brand from process errors. Your production is certain to meet exceptional demands at all times.



UNIQUE DESIGN FOR PERFECT FIT AND FUNCTION

The GEA VARIVENT® modular system

The VARIVENT® system is the first – and, to date, the only – valve module to feature a flexible design. Its modular concept offers numerous advantages, such as the standardized forms and connections across all valve types, thereby ensuring that all components can be removed, replaced, combined and expanded without any issues. The result? Cost-efficient system operation, optimized warehousing, economical spare parts and low parts diversity.

Existing valve systems in process plants can be modified or adjusted without the need to alter the overall system concept. The VARIVENT® system remains the benchmark others seek to emulate.

1. Control and feedback system

Each control top enables intelligent valve control for easy commissioning and increased safety in the process sequence. Detectable valve positions make a decisive contribution to optimal system operation. All common connection types and control systems are available for technical communication in the plant.

2. Actuator

A process-specific selection of the actuator size according to the installation situation results in low air and energy consumption. Depending on the tasks of the valve, various actuator options are available and can be adapted optimally to customer requirements. All actuators can be used in Ex zones as standard, although the Ex-conformity of the electrical add-on components must be taken into account. Furthermore, the actuator contains an integrated interface for mounting a control and feedback system. The internal air supply reduces the risk of failure with external hoses.

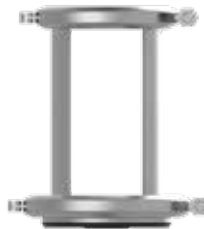
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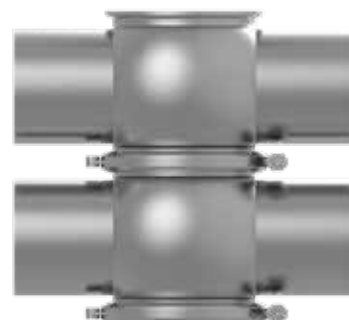
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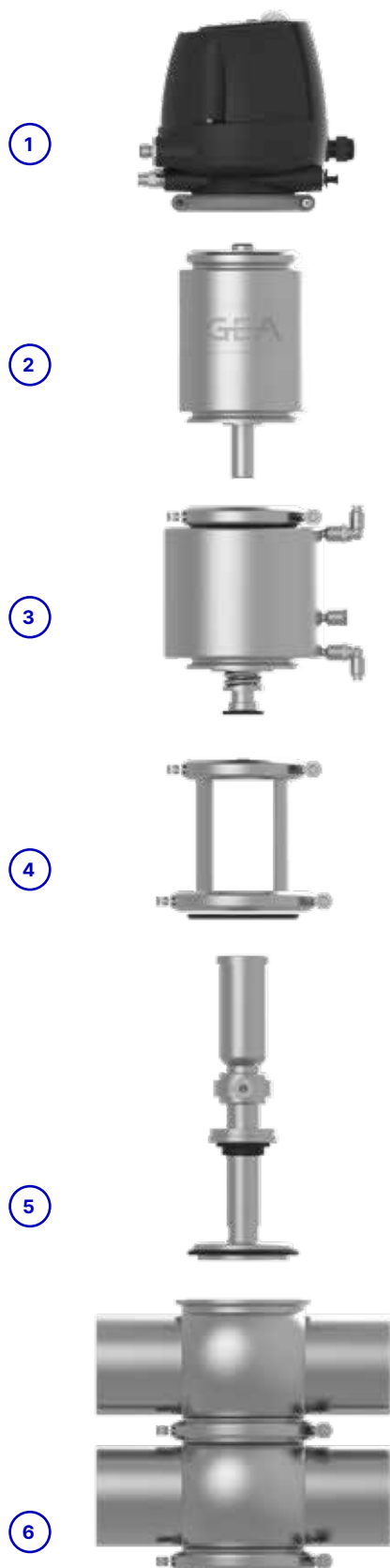


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3. Lifting actuator

Mixproof valves are optionally equipped with a lifting actuator, which enables individual lifting of a single valve disc when cleaning the respective pipe. This allows cleaning of the sealing surfaces in the seat area.

4. Lantern

The open lantern separates the actuator and product parts from one another. It permits visual inspection of the stem seal, and is also used for indicating any leakages. Furthermore, heat transfer from the valve housing to the actuator is prevented. In the VARIVENT® valve series, it is possible to integrate additional valve options, for example a limit stop or support of up to two proximity switches.

5. Valve disc

The VARIVENT® system offers an extensive number of different valve types for particular applications in process systems. These are mainly characterized by the different configurations of the valve disc. This concerns in different ways the double disc (upper disc) and the valve disc (lower disc).

6. Valve housing

The height of the dead-zone-free housing exactly corresponds to the diameter of the connection pipeline. This avoids domes and sumps with their negative effects such as oxidization damage or cleaning problems. The special ball shape of the housing offers the best flow profiles without flow separation. Optionally, numerous housing combinations are available with either clamped or welded seats.

FUTURE-PROOF VALVE AUTOMATION

Mechanical and digital excellence

Every GEA VARIVENT® valve unit is fitted with a latest-generation GEA control top to facilitate convenient valve operation and control. Leading-edge control and automation options enable operators to achieve optimum control and monitoring of the valve.

All the mechanical and digital components together form a balanced valve unit that enhances the functionality and safety of the valve application and also proves more cost-effective in operation.

State-of-the art control tops

The key component for all digital and automated valve control functions is an advanced GEA T.VIS® control top. GEA's ground-breaking, especially reliable control and feedback technology automatically and continuously monitors, records, evaluates and if necessary, corrects all valve operations. This facilitates optimized production and cleaning processes with less expenditure on staff, energy and time.

Special priority is given to sustainability in intelligent valve control. For instance, with the selectable LEFF® function integrated into the state-of-the-art GEA T.VIS® A-15 Control Top, up to 90 percent of the cleaning agents can be saved

through optimized pulsing of the valve discs during cleaning processes, independently of the PLC.

In addition, control tops from GEA offer the best protection from adverse ambient conditions such as moisture, dust, liquids of any kind, vibrations and other mechanical impact.

Modern plant communication at the threshold to Industry 4.0

The control tops in the current GEA range can be configured for all common types of connection and control systems. Users can ensure early digital integration of the system control setup in Industry 4.0 environments by way of the modern IO-Link technology.

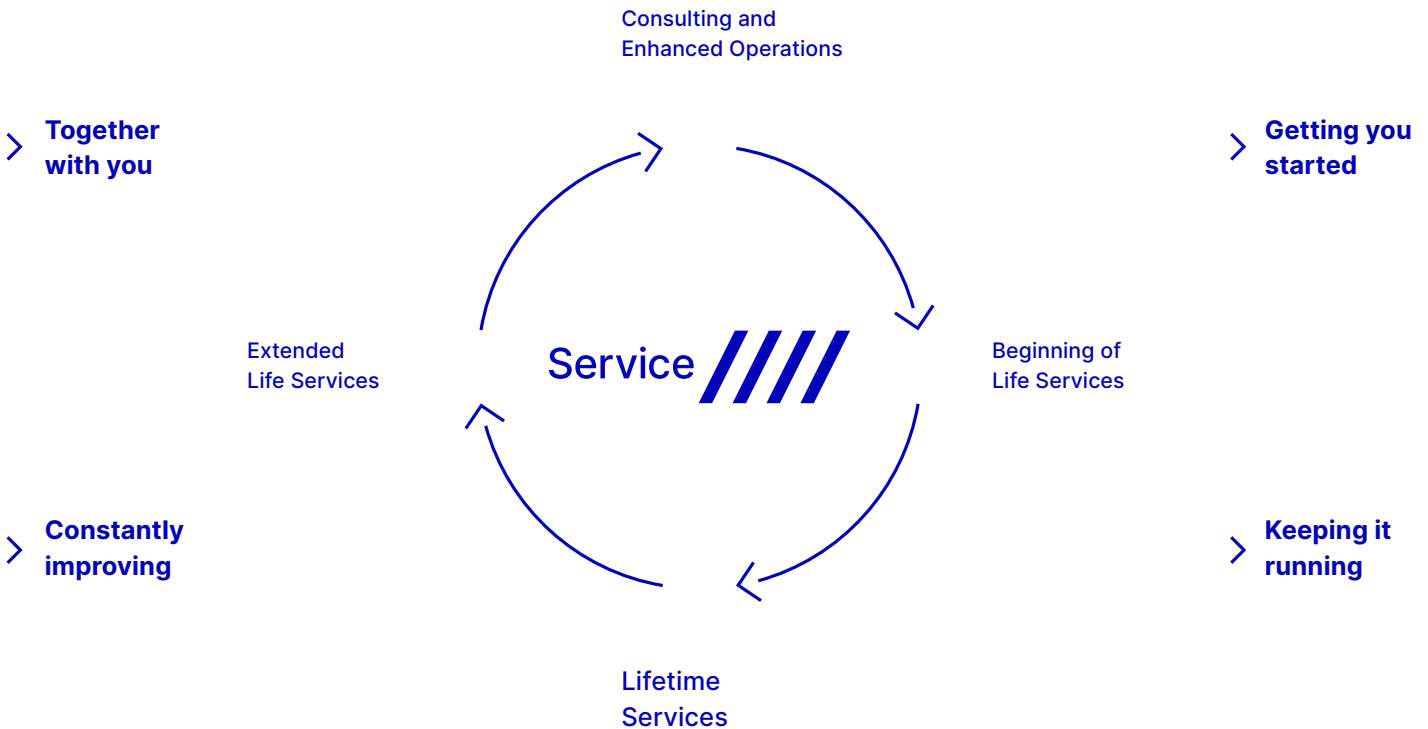
Easy Quick-SETUP of the valve unit

Thanks to pre-configurable system parameters and a fully automatic Quick-SETUP function, the installation for digital valve control is almost effortless and takes only seconds, even without extensive training.

Regional requirements, application-specific certificates (UL/CSA/PMO/ATEX) and other individual specifications can be provided.



SERVICE PACKAGE FOR RELIABLE OPERATION AND PERFORMANCE



With a tailored service concept, you can extend the service life of your hygienic valve technology. Professional services and original spare parts from GEA help to ensure maximum system availability and security, smooth operation and precise process execution.

Our service specialists are here to assist you in every phase of system utilization – from the initial process concept and throughout the entire performance period to advising on your best strategies for the future.

Beginning of life services

We draw on our decades of experience to support you in configuring your system and providing extensive employee training. Our consultations and training sessions take place in our Competence Centre in Büchen or, upon request, at your premises.

Lifetime services

We optimize your spare parts logistics by using our modular component system and our extensive service network. Preventive maintenance programmes based on comprehensive data, routine troubleshooting and efficient repair logistics keep downtimes to a minimum.

Extended life services

When upgrades are available to enhance your system, you benefit from our continuing advances in hygienic valve technology. We offer extensive advice and consultation.

Consulting and enhanced operations

Working in partnership with you, we support your enduring success and develop service strategies and Service Level Agreements for a profitable future operation.



GEA VARIVENT® – the benchmark for hygienic valve technology

- Visit GEA VARIVENT® online to learn more:
- Detailed descriptions and illustrations
- Catalogs for the full GEA VARIVENT® portfolio
- Customer stories and industry information reports
- GEA contacts for all your questions and requests



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