GEA Flow Components

Keeping your product in motion

engineering for
a better world

gea.com

What we do

Regardless of the application – for our customers product quality and profitability are what matters. This is what GEA Flow Components is known for. Our engineers are specialists in everything that flows.

APPLICATIONS

Beverage
Beer, juice, smoothie products …

Dairy
Milk, yoghurt, cheese …

Food
Sauces & cremes, ketchup, mayonnaise …

Pharma/Biotech
Pharmaceuticals, biotechnology products, cosmetics & health care …

Chemicals
Fine chemicals, bulk chemicals, cleaning chemicals …

Dairy farming
Raw milk processing …

GEA Group Aktiengesellschaft

GEA is one of the largest suppliers of process technology for the food industry and for a wide range of other industries. As an international technology group, the company focuses on world-leading process solutions and components for sophisticated production processes.

GEA Flow Components

GEA offers well-engineered process components and services to ensure smooth production processes in the treatment of liquid products. We develop and produce a comprehensive product range that includes valve technology for all hygienic classes (Hygienic, UltraClean, Aseptic), hygienic pumps and cleaning technology.

GEA Flow Components products and services are available around the world through the international GEA network.

Every fourth liter of human blood is handled by GEA equipment

Around one quarter of the milk processed is handled by GEA equipment

Roughly every second liter of beer is brewed using GEA equipment and solutions

Approx. one in three instant coffee lines has been built by GEA

GEA Flow Components meet the highest hygienic standards where required, such as EHEDG and 3-A standards.

Hygienic valves and components from GEA form the core component of matrix-piped process plants.

When it comes to sterile applications, GEA offers both UltraClean and Aseptic valves and systems. The hermetic sealing of the product area provides a maximum level of process line isolation and thus contributes to process and product safety.

The hygienic pump range from GEA includes centrifugal pumps (single-stage, multi-stage and self-priming), as well as rotary lobe pumps.

GEA cleaning devices – whether index, orbital, rotary or static – achieve optimum cleaning results in multiple industries. GEA product recovery systems help to recover valuable products and reduce both waste disposal costs as well as water and detergent consumption.

HYGIENIC VALVE TECHNOLOGY

A complete range of economically designed Hygienic valves for complex tasks as well as basic functions, helping producers to achieve high product quality and efficiency.

ASEPTIC VALVE TECHNOLOGY

UltraClean and Aseptic valves are suitable for production processes which require a higher safety protection against contamination from the environment and thus warrant microbial stability of the product over the whole process.

HYGIENIC PUMP TECHNOLOGY

A great variety of Hygienic pumps with sensibly rated high efficiency motors and carefully designed flow paths, driving economic efficiency and sustainable operation.

CLEANING TECHNOLOGY

Index, orbital, rotating and static cleaners in a complete range, developed with special emphasis on saving valuable resources in the cleaning process.

Hygienic valve technology

A complete range of economically designed Hygienic valves for complex tasks as well as basic functions, helping producers to achieve high product quality and efficiency.

Hygienic valves from GEA form the core component of matrix-piped process plants. All our valves facilitate considerable cost savings, offering a flexible valve concept and reliable, innovative control functions. All valves are economically designed for the application they are intended for.

Complementing our portfolio, we provide high-efficiency product recovery systems to increase plant output and reduce waste, water and detergent consumption, as well as process connections, expansion compensators and safety-enhancing tank lock systems.

GEA VARIVENT® system

VARIVENT® valves are the core component in matrix-piped process plants. They are operationally reliable, easy to maintain and suitable for CIP/SIP operations. They contribute significantly to the highest product quality. Low operation, maintenance and service costs make the system economical and productive.

The VARIVENT® system is a flexible, modular system that has many advantages: for instance standardized parts that go with various valve types. The result: cost-effectiveness for the plant owner, optimized stock keeping, favorably priced spare parts and low parts diversity.

Mixproof valve

Our valve program includes single-seat shut-off valves, single-seat divert valves, mixproof valves, mixproof divert valves, mixproof bottom valves, vacuum valves and sampling valves. Modulating control valves, safety valves, constant pressure valves and overflow valves then complete this wide program. Many of these valve types are EHEDG certified and meet the 3-A standards.

VARIVENT® valves are characterized by their special sealing technique. The metallic stop of the valve disk is the core element for a defined deformation of the seal. With this technique a longer service life in the process plant is reached – leading to shorter downtimes and continuous production.

All of our valve series can be combined with T.VIS® control tops. They integrate and combine our valves into the automated process plant.

Mixproof double-seal valve

SIZES

Valve type	Metric	Inch OD	Inch IPS
Single-seat shut-off valves	DN 25 – DN 150	1" – 6"	2" – 6"
Single-seat divert valves	DN 25 – DN 150	1" – 6"	2" – 6"
Single-seat long stroke valves	DN 65 – DN 100	2.5" – 4"	–
Mixproof valves	DN 25 – DN 150	1" – 6"	2" – 6"
Mixproof double-seal valves	DN 25 – DN 150	1" – 6"	–
Mixproof divert valves	DN 25 – DN 150	1" – 6"	2" – 6"
Mixproof bottom valves	DN 25 – DN 150	1" – 6"	2" – 6"
Control valves	DN 25 – DN 150	1" – 6"	2" – 6"
Overflow valves	DN 25 – DN 100	1" – 4"	2" – 4"
Constant pressure valves	DN 40 + DN 65	1.5" + 2.5"	–

Single-seat shut-off valve

Mixproof bottom valve

Mixproof divert valve

Control valve

GEA T-smart valves

Our T-smart valve series is designed for basic functions; it is favorably priced and designed for standard applications. This valve series includes seat and butterfly valves.

The T-smart valve series is characterized by standardized products while still offering necessary variations (e.g. body combinations, seals, feedback options). Clearly assigned item numbers simplify the selection and ordering process.

The butterfly valves T-smart 7 are used as cost-effective shut-off elements on valve blocks, panels and pipe fences for product and cleaning.

The T-smart 7 offers the benefits of excellent hygiene, higher ease of assembly, shorter assembly and maintenance times and thus higher production uptimes.

Also a mixproof butterfly valve T-smart 9 is available and suitable for a safe media separation. All variants are highly functional, CIP/SIP compatible, easy to maintain and reliable for the safety of the production process.

Single-seat shut-off valve

SIZES

Valve type	Metric	Inch OD
Seat valves T-smart	DN 25 – DN 100	1" – 4"
Butterfly valves T-smart 7	DN 15 – DN 150	0.5" – 4"
Mixproof butterfly valves T-smart 9	DN 50 – DN 100	2" – 4"

Butterfly valves

Mixproof seat valve

Mixproof butterfly valve

SEAT VALVES:

Shut-off, divert, mixproof, tank bottom and double-seal valves.

BUTTERFLY VALVES:

Standard and mixproof butterfly valves.

GEA ECOVENT® valves

With our ECOVENT® program, we offer a valve series that covers shut-off and divert valves. ECOVENT® valves are based on the VARIVENT® philosophy and offer a cost-effective product with basic functions.

Single-seat shut-off valve

Single-seat divert valve

SIZES

Metric	Inch OD
DN 10 – DN 100	1" – 4"

GEA VARINLINE® housings and connection flanges

The installation of VARINLINE® housings into the pipeline system permits integration of measurement and control instruments in the process system and, thus, structuring the production process transparently.

VARINLINE® housings can have up to two process connections – they allow pocket-free installation of the sensors and hence are used in process plant with high hygienic standards.

Many manufacturers have assumed this established process connection type and offer meters for installation in VARINLINE® fittings as standard. This ensures hygienic and quick integration of different devices into the process system.

The process connections offer the option of holding up to two components in one VARINLINE® housing

SIZES

Metric	Inch OD	Inch IPS	ISO
DN 10 – DN 150	1" – 6"	2" – 6"	13.5 – 114.3

GEA VARICOVER® product recovery system

VARICOVER® product recovery systems are used in different applications to optimize the economic efficiency of a process system by recovering the valuable products from pipelines.

Product recovery systems are used whenever viscous products are expelled from pipe systems without the risk of intermixing with other media. Waste water costs are reduced considerably, with corresponding savings of water and detergent consumption.

Product recovery cleaning station MST

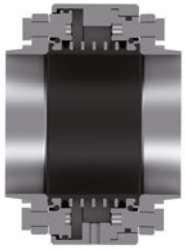
SIZES

Metric	Inch OD
DN 25 – DN 100	1" – 4"

GEA VARICOMP® expansion compensator

The innovative VARICOMP® expansion compensator equalizes expansions and tensions that result from temperature differences in the pipeline system. Its special design principle makes it also suitable for aseptic processes.

The unique advantage of the VARICOMP® expansion compensator, the pocket-free design with draining capability, meets the requirements of optimum cleaning with CIP/SIP processes. Due to its compact dimensions, the VARICOMP® expansion compensator is especially suitable for valve blocks and process units.



Expansion compensator

SIZES

Metric	Inch OD	Inch IPS
DN 50 – DN 125	2" – 4"	3" – 6"

GEA VARITOP® tank safety system

This modular and compact system is used for the protection and cleaning of process tanks and it satisfies the highest hygienic demands. VARITOP® meets the requirements of cleaning compatibility as well as CIP/gas management, functionality and reliability.

Tanktop safety systems

- Installation on a tank dome cover or using a central connection
- Ventilation and cleaning via one connection only
- Connection for pressure measurement
- Free selection of the cleaner type

Safety valves

- Spring-loaded safety valves
- Against overpressure for steam, gases and liquids

SIZES

Metric	Inch OD
DN 25 – DN 100	1" – 4"

Vacuum valves

- For securing tanks against vacuum pressure
- Valve opens upwards

SIZES

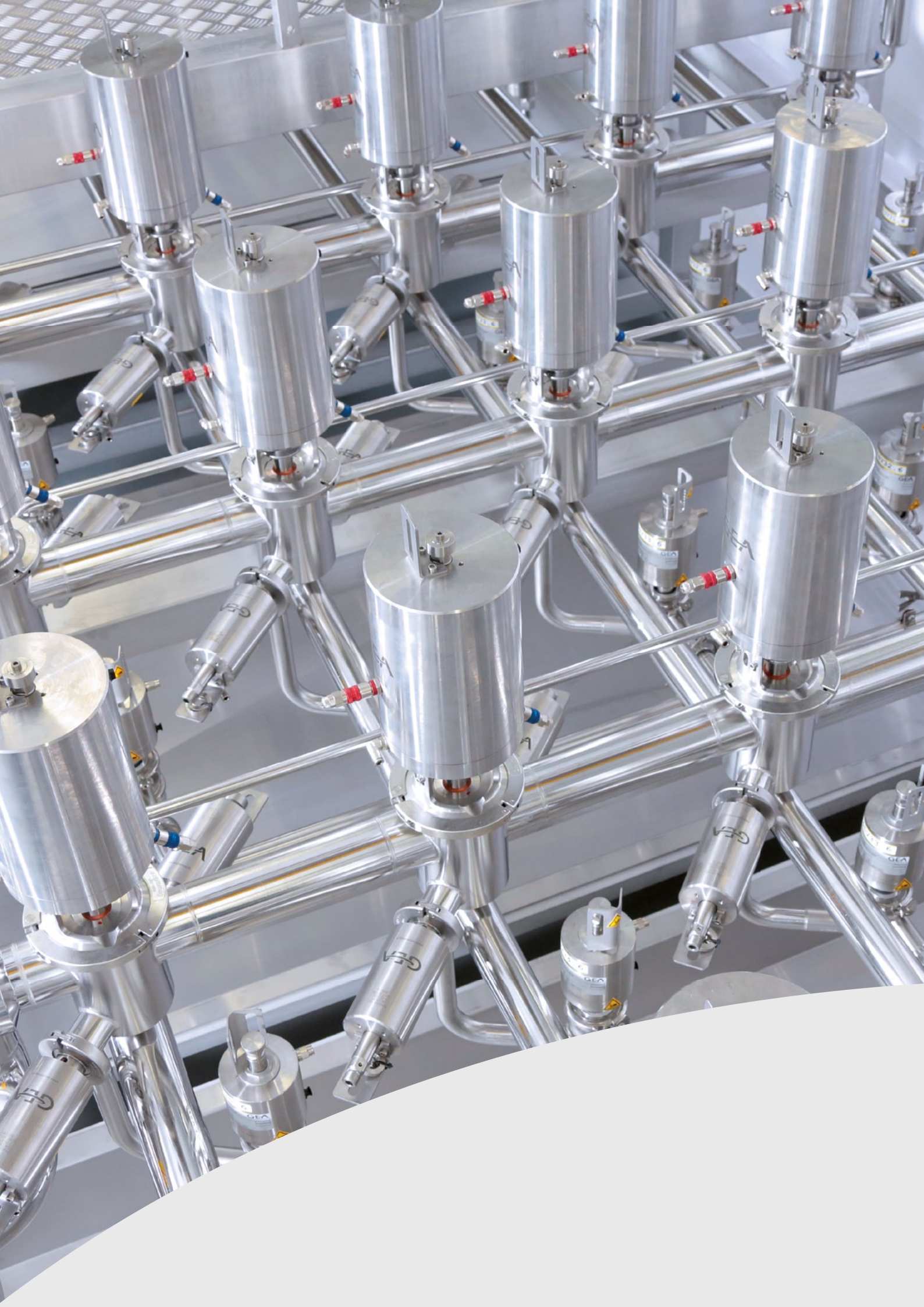
Metric	Inch OD	Inch IPS
DN 65 – DN 100	2.5" – 4"	6"

Installation using a central connection

Installation on a tank dome cover

Spring-loaded safety valve

Vacuum valve



Aseptic valve technology

UltraClean and Aseptic valves are suitable for production processes which require a higher safety protection against contamination from the environment and thus warrant microbial stability of the product over the whole process.

The increased safety of UltraClean valves results from the valve stem being protected from the atmosphere by steam or by a hermetical sealing diaphragm. In conjunction with the materials used, UltraClean valve concepts provide cost-effective solutions for products not requiring the most stringent aseptic process demands.

Aseptic valves, the highest hygienic class, are distinguished by the uncompromising hermetic sealing of the valve stem against the environment, minimizing the risk of contamination in sterile processes. Aseptic components also rank highest in safety due to the detection possibilities of stainless- steel bellow technology and other construction features.

GEA D-tec® stem diaphragm valves

D-tec® stem diaphragm valves are characterized by a higher safety protection against contamination from the environment and, thus, warrant microbial stability of the product over the whole process in UltraClean applications in the food, beverage and dairy industry.

The hermetically sealing diaphragm gives the D-tec® stem diaphragm valve a higher hygienic standard that ensures higher product quality and longer shelf-life of products as often demanded from customers with UltraClean applications. The innovative connection between valve stem and diaphragm in the product area and the minimized mechanical stress of the diaphragm during switching procedures should be noted. The D-tec® diaphragm sets standards for the service life at proven temperature resilience and cleaning ability.

The D-tec® stem diaphragm valve is based on the VARIVENT® modular system and offers many advantages because of this – e.g. a high level of flexibility in terms of valve configuration. The result: Economic efficiency for the system operator and optimized stock keeping from reduced diversity of parts at proven quality.

All of our D-tec® valves can be equipped with T.VIS® control tops. They integrate and combine our valves into the automated process plant.

Shut-off valve

SIZES

Valve type	Metric	Inch OD
Shut-off valves	DN 25 – DN 100	1" – 4"
Divert valves	DN 25 – DN 100	1" – 4"

Divert valve

GEA Aseptomag® aseptic valves

Aseptomag® aseptic valves are designed to meet the highest demands for aseptic processes in the dairy, food and beverage industry.

Aseptic bellow valves distinguish themselves with the uncompromisingly hermetic seal of the valve stem, thereby minimizing contamination risks and maximizing detection possibilities. The Aseptomag® valve program is the equivalent to the VARIVENT® program for aseptic processes and provides everything from shut-off over bottom-seat to mixproof and sampling valves. The valve program meets the highest hygienic standards where required, such as EHEDG and 3-A standards. Thanks to the modular build-up the Aseptomag® program also allows tailor-made valve solutions for specific process requirements (i.e. components for aseptic pigging systems). Aseptomag® valves can be combined with T.VIS® control and can therewith seamlessly be integrated into an automated process plant.

Shut-off valve

Control valve

Leakage valve

Double-chamber bottom-seat valve

SIZES*

Valve type	Metric	Inch OD
Shut-off valves AV	DN 15 – DN 150	0.75" – 6"
Bottom-seat valves AVBS	DN 15 – DN 150	0.75" – 6"
Divert valves UV	DN 15 – DN 100	0.75" – 4"
Filling valves AF	DN 25 – DN 100	1" – 4"
Control valves RV	DN 15 – DN 100	0.75" – 4"
Back-pressure valves GD	DN 15 – DN 150	0.75" – 6"
Mini valves AMV	DN 06 – DN 10	0.25" – 0.5"
Leakage valves LV	DN 40 – DN 100	1.5" – 4"
Leakage bottom-seat valves DT	DN 40 – DN 100	1.5" – 4"
Leakage valves ADV	DN 25 – DN 100	1" – 4"
Double-chamber valves DK	DN 25 – DN 150	1" – 6"
DK bottom-seat valves DKBS	DN 25 – DN 150	1" – 6"
DK valves – type DDK	DN 25 – DN 150	1" – 6"
DK valves – type AXV	DN 25 – DN 150	1" – 6"
Sampling valves PV	DN 10 – DN 15	0.5" – 0.75"
Steam inlet valves DE	DN 25 – DN 40	1" – 1.5"

** Additional valve sizes and connection standards (i.e. ISO) available upon request*

Divert valve

Back-pressure valve

Double-chamber valve

Sampling valve

GEA VESTA® sterile valves

VESTA® sterile valves are a true asset for applications from laboratory up to highly complex process plants especially in the pharmaceutical, biotech, cosmetics industry, but can also be used in the food industry.

Thanks to the hermetic sealing of the valve stem with a PTFE bellow, VESTA® sterile valves provide a maximum level of process line isolation and therewith contribute to customers' product and process safety.

The VESTA® valve series is specifically designed to meet the highest requirements for sterile processes in the pharmaceutical, biotech and cosmetics industry. The valve program provides everything that is required to ideally serve these industries. The high-quality valve range consists of different valve types, and thanks to the modular build-up, the valves can also be tailor-made for specific process conditions and still meet all requirements from a regulatory point of view.

VESTA® valves can be seamlessly integrated into an automated process plant by using the T.VIS® control tops.

Shut-off valve

Tank bottom valve

SIZES

Valve type	Metric	Inch OD	ISO
Shut-off valves	DN 10 – DN 100	0.5" – 4"	ISO 13.5 – ISO 114.3
Mixed matched valves	DN 10 – DN 80	0.5" – 3"	ISO 13.5 – ISO 88.9
Tank bottom valves	DN 10 – DN 100	0.5" – 4"	ISO 13.5 – ISO 114.3
Block valves	DN 10 – DN 65	0.5" – 2.5"	ISO 13.5 – ISO 76.1
Sampling valves	DN 10 – DN 15	0.5" – 0.75"	ISO 13.5 – ISO 17.2
Multiport	DN 10 – DN 25	0.5" – 1"	ISO 13.5 – ISO 33.7

Sampling valve

Mixed matched valve

Block valve

Multiport

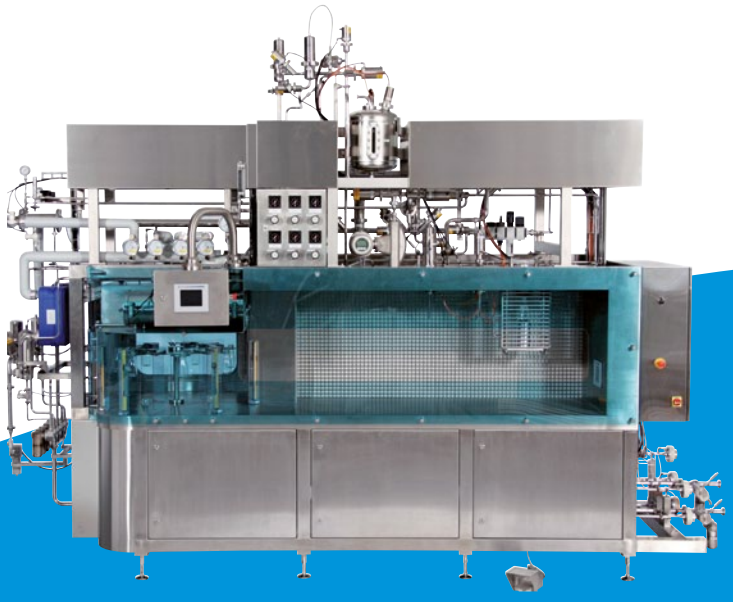
GEA system solutions for the aseptic industry

Besides our components portfolio, GEA also offers standardized as well as tailor-made system solutions for different applications and industries.

VESTA® sampling system

The aseptic VESTA® sampling system is based on a modular design concept, making sampling at different locations in the process line possible with outstanding simplicity. Thanks to the system's compact design and freely selectable degree of automation it can adapt with ease to any customer process requirements.

The fillasept® pilot filling machine is designed to fill containers up to 2 liters under aseptic conditions. The decontamination and drying process is fully automated and the residual head space volume can be filled with nitrogen gas. The whole filling and closing process takes place in the integrated laminar flow area, which allows flexibility on one hand and maximum product safety on the other hand.

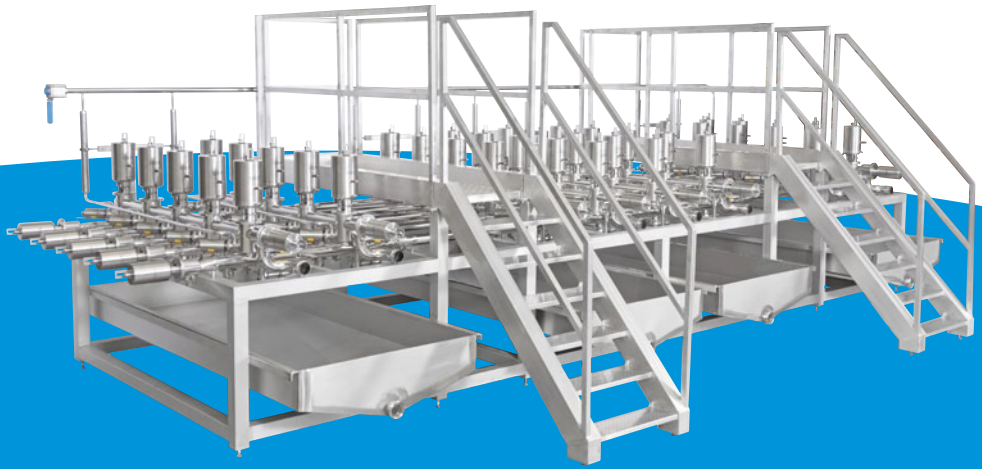


fillasept® pilot filling machine

The IBCfill® filling system is a plug & play solution for the aseptic filling of IBC modules (Intermediate Bulk Containers) and is especially distinguished by its compact design, the easy connection to industrial processes as well as the smooth adjustment of process parameters to the product to be filled.

IBCfill® filling system

In addition to our standardized systems, we assist customers with implementing specific process functionality into compact modules by using components out of our modular and extensive product portfolio. We design, plan and fabricate tailor-made valve manifolds in close cooperation with our customers, focussing on product and process safety as well as maintainability.



Tailor-made valve manifolds


Cerveza
GEA

Hygienic pump technology

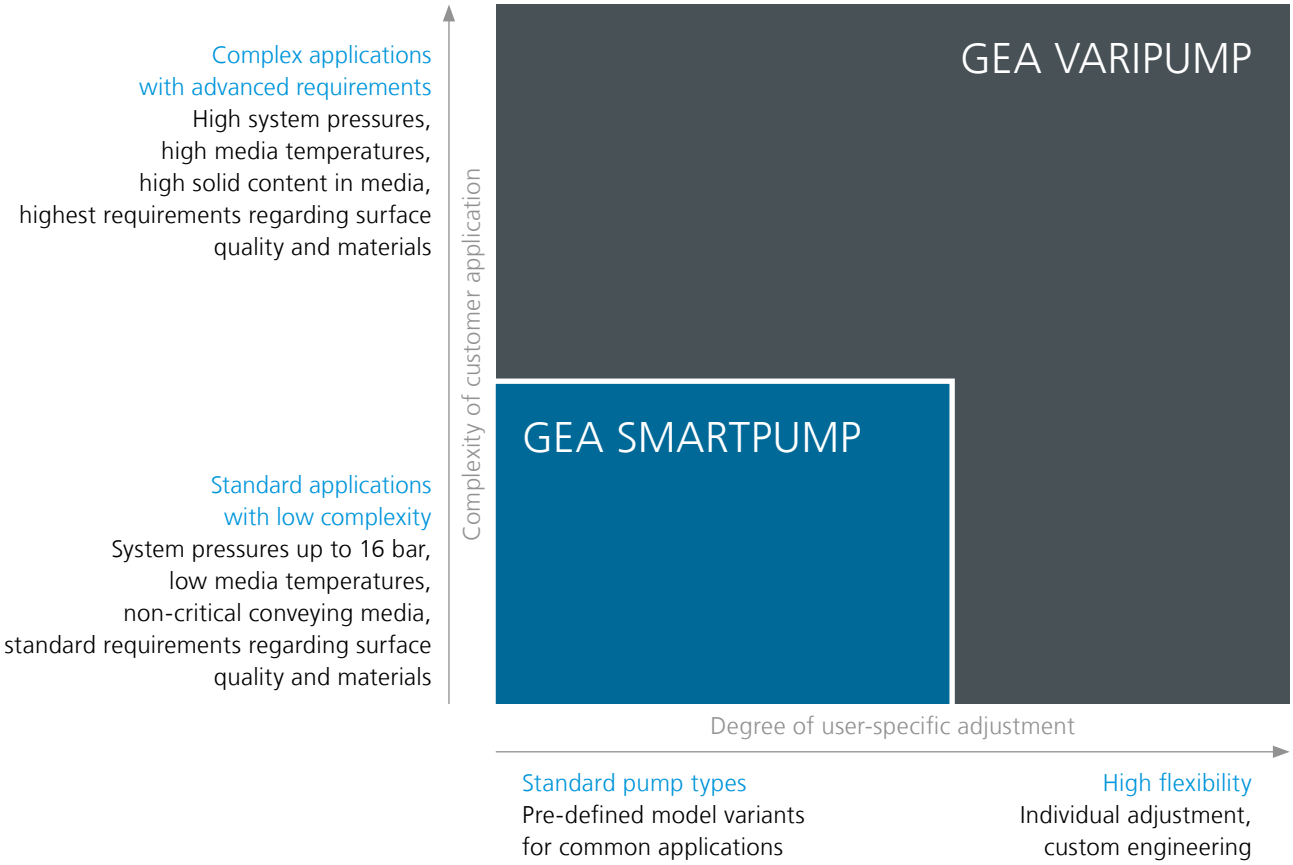
A great variety of hygienic pumps in two modern pump lines with sensibly rated high-efficiency motors and carefully designed flow paths, driving economic efficiency and sustainable operation.

GEA offers sanitary pumps for hygienic applications in numerous industries: food and dairy, brewery and beverage as well as pharmaceutical, cosmetics and chemical.

GEA pumps enable considerable cost savings. Sensibly rated high-efficiency motors help to keep energy consumption as low as possible. Carefully designed flow paths free from dead corners ensure optimum utilization of the conveying energy. Our centrifugal pumps are EHEDG certified. Lower consumption of energy, water and chemicals means less load on environment and climate. Careful and sustainable handling of available resources becomes more and more important in our world. To use GEA pumps means to benefit not only from proven environmentally responsible production methods but also from high hygienic standards in the production process.

Two modern product lines

Two product lines, GEA VARIPUMP and GEA SMARTPUMP, enable our customers to choose from a highly versatile pump range with a multitude of smart adaption options to achieve simpler operation, higher-quality production, and reduced consumption of valuable resources.



GEA VARIPUMP

The pump models in the GEA VARIPUMP line have been specially conceived for extreme application demands and are individually optimized for each task.

Characteristics of the GEA VARIPUMP line:

- Developed for advanced application conditions
- Project-specific customization
- Surface roughness up to $R_a \leq 0.4$ µm
- Selection of materials in contact with product according to specific requirements

GEA SMARTPUMP

The GEA SMARTPUMP line covers common applications at standard conditions. The pumps are highly standardized, attractively priced, easy to select and ready for fast delivery.

Characteristics of the GEA SMARTPUMP line:

- Application for common and clearly defined “standard” process tasks
- Simple selection and configuration, fast delivery
- Standardized spare parts

Hygienic pump series

GEA Hilge HYGIA

The “Swiss Knife” among the hygienic pumps. Premium quality and highest flexibility of customization ensure successful application in the food, beverage, and pharma industries.

Technical data	50 Hz	60 Hz
Flow rate	110 m³/h	110 m³/h
Flow head	70 m	90 m
System pressure	16 bar up to max. 25 bar	

GEA Hilge MAXA

A single-stage centrifugal pump designed for heavy-duty operation in industrial processes. The major dimensions and characteristics of these pumps correspond to DIN EN 733 and DIN EN 22858.

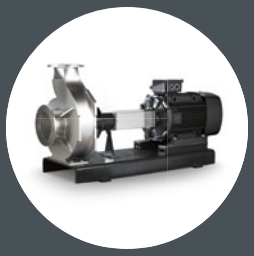
Technical data	50 Hz	60 Hz
Flow rate	1,400 m³/h	1,400 m³/h
Flow head	100 m	100 m
System pressure	10 bar	

GEA VARIPUMP

Wide model range with numerous variants. Customization to specific customer requirements

GEA Hilge HYGIA

GEA Hilge MAXA



Single-stage end-suction centrifugal pumps

GEA SMARTPUMP

Clearly defined list of models, limited to standard requirements, no other variants

GEA Hilge TP

GEA Hilge TP

The GEA Hilge TP is the smart solution for standard applications. The single-stage centrifugal pump suits a wide range of applications and offers uncompromising hygiene and quality.

Technical data	50 Hz	60 Hz
Flow rate	220 m³/h	240 m³/h
Flow head	95 m	130 m
System pressure	16 bar	

GEA Hilge SIPLA

A single-stage self-priming side channel pump, especially suited for SIP/CIP return systems and applications with high gas content. Right- and left-hand rotation can be freely adjusted for additional application options.

Technical data	50 Hz	60 Hz
Flow rate	80 m³/h	65 m³/h
Flow head	50 m	60 m
System pressure	10 bar	

Single-stage self-priming centrifugal pumps

GEA Hilge CONTRA

Single- and multi-stage centrifugal pumps are available in this series. The hygienic design in every detail provides for perfect solutions to numerous tasks in sterile and hygienic processes.

Technical data	50 Hz	60 Hz
Flow rate	40 m³/h	35 m³/h
Flow head	160 m	260 m
System pressure	25 bar	

Multi-stage centrifugal pumps

GEA Hilge NOVALOBE

This rotary lobe pump has been specifically designed for viscous media – and for applications where gentle pumping or dosing is required. The pump is fully drainable and EHEDG certified.

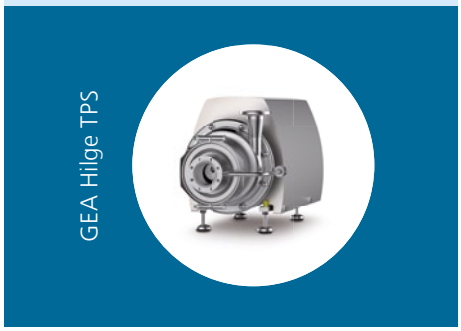
Technical data	50 Hz
Cavity volume	1.29 l/U
System pressure	25 bar

Rotary lobe pumps

GEA Hilge TPS

This self-priming centrifugal pump is the solution of choice especially for emptying tanks as well as for conveying products containing gas, e.g. CIP return systems.

Technical data	50 Hz	60 Hz
Flow rate	100 m³/h	120 m³/h
Flow head	90 m	100 m
System pressure	16 bar	



GEA Hilge DURIETTA

This end-suction single- or multi-stage centrifugal pump in a very compact design has been created for applications with low flow rates at high flow heads.

Technical data	50 Hz	60 Hz
Flow rate	8 m³/h	8 m³/h
Flow head	70 m	40 m
System pressure	8 bar	

Cleaning technology

Index, orbital, rotating and static cleaners in a complete range, developed with special emphasis on saving valuable resources in the cleaning process.

Power meets intelligence in GEA cleaning technology, developed for advanced processes. Our tank cleaning devices – whether index, orbital, rotary or static – combine strong mechanical impact with a self-cleaning hygienic design. They are the superior choice for sustainable, eco-friendly practice and best cleaning results in multiple industries.

GEA tank cleaners series

GEA cleaning technology offers the optimal solution for every cleaning process.

We offer economical, flexible and service-oriented solutions. Our wide range of orbital, index, rotating, static and retractable cleaners achieve optimal cleaning results in many different industries – thus for your application, too. Our cleaning equipment has been developed for sustainable application, with special emphasis on saving valuable resources in the cleaning process. We do reach this target by hygienic design and the accurate selection of the cleaner type for the required task.

Orbital Cleaners

- Liquid-driven or Motor-driven
- Working pressure 1 to 25 bar
- Cleaning diameter up to 33 m
- Flow rate 0.5 to 48 m³/h

Tempest

Jumbo 6

TMC

Index Cleaners

- Working pressure 4 to 90 bar
- Cleaning diameter up to 27 m
- Flow rate 1.2 to 25 m³/h

Fury TWB

Fury 602/404

Rotating Cleaners

- Controlled rotating or Free rotating
- Working pressure 1 to 20 bar
- Cleaning diameter up to 12 m
- Flow rate 0.9 to 30 m³/h

Turbo SSB

Chemidisc

Torus

Static Cleaners

- 3-A optional
- Working pressure 1 to 2.5 bar
- Cleaning diameter up to 8 m
- Flow rate 0.9 to 67 m^3/h

Spray balls

Retractors

- Retractable cleaning devices for special cleaning applications
- Working pressure 1.8 to 4 bar

IS 25

MR1

engineering for
a better world

We live our values.

Excellence • Passion • Integrity • Responsibility • GEA-versity

GEA Group is a global engineering company with multi-billion euro sales and operations in more than 50 countries. Founded in 1881, the company is one of the largest providers of innovative equipment and process technology. GEA Group is listed in the STOXX® Europe 600 Index.

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